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PERFORMANCE AND IMPACT EVALUATION OF THE WAGE SUBSIDY PROGRAM “JOB VOUCHERS 2014”

**The “Job Vouchers 2014” is Federal Employment Institute’s
active labor market measure**

February, 2019, FINAL REPORT

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MONITORING AND EVALUATION SUPPORT ACTIVITY (MEASURE-BIH)

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Prepared under the USAID Monitoring and Evaluation Support Activity (MEASURE-BiH),
Contract number FPCS No. CLIN I-C2-2420-011

Submitted to:

USAID/Bosnia and Herzegovina

Submitted by:

Association PREMISA

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ACKNOWLEDGMENTS

PREMISA and the Evaluation Team members would like to express our sincere appreciation to IMPAQ International and USAID/BiH Monitoring and Evaluation Support Activity (MEASURE-BiH), who recognize the importance of rigorous evaluation of policies in B&H. The authors would like to thank a variety of individuals who contributed to the implementation of the IMPACT EVALUATION OF THE JOB VOUCHER 2014 PROGRAM IN B&H. At MEASURE-BiH, Davorin Pavelić, our Chief of Party (COP), Anela Kadić Abaz and Anesa Hadžić, Research Analyst, who provided valuable guidance and assistance throughout this project. We would also like to thank numerous Cantonal employment officials, including representatives Razija Majstorović, Nedžad Velagić, Saudina Udovičić, Mirena Perić, Mahir Lokvančić, Aida Radić, Sehadet Hodžić, Jagoda Ševo and Jela Klaić for their prompt assistance during the IMPACT EVALUATION OF THE JOB VOUCHER 2014 PROGRAM IN B&H. They showed the utmost responsiveness in providing administrative data, and assistance in conducting surveys for natural and private entities. Here we would also like to thank Muhamed Čomić and Kenan Rešo who provided support for data collection from the Federal Tax Office through the Information Technology Service. We also want to thank to Marios Michaelides from IMPAQ International who provided valuable suggestions and guidelines, which resulted in a more valuable Final Evaluation Report.

PREMISA and the Evaluation Team members would like to extend our sincere gratitude and special thanks to Mrs. Helena Lončar the Director of the FEI. Without her continuing support and unselfish assistance, it would not have been possible to finish the report.

Sincerely,
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LIST OF ACRONYMS AND ABBREVIATIONS

ATE	Average Treatment Effect
B&H	Bosnia and Herzegovina
BAM	Currency: Convertible Marks
BPC	Bosnia Podrinje Canton
CI0	Canton 10
CES	Cantonal Employment Service
CS	Sarajevo Canton
FB&H	Federation of Bosnia and Herzegovina
FEI	Federal Employment Institute
HNK	Herzegovina Neretva Canton
ILO	International Labor Organization
LFS	Labor Force Survey
LoU	Length of Unemployment
NGO	Non-Government Organizations
PC	Posavina Canton
PREMISA	Association for Proactive Empirical Research and Analysis
PSM	Propensity Score Matching
RCTs	Randomized Control Trials
SBC	Central Bosnia Canton
SMD	Standardized Mean Difference
TC	Tuzla Canton
USC	Una Sana Canton
WHC	West Herzegovina Canton
ZDC	Zenica Doboje Canton

DEFINITIONS

Beneficiary companies: Companies that signed a contract with FEI and the program participant; the company in which the Program was executed. They also appear in the report as **companies** or **private entities**.

Outcome variable: This is binary variable: 1 for a person in unsubsidized employment after the Program was supposed to end, and 0 for a person who is not. There are 12 outcomes for 12 months.

t1...t12: The time frame of the first month after Program implementation. The evaluation estimates 12 outcome effects for 12 time frames for 12 months.

Treatment: This involves persons who participated in the Job Voucher 2014 program. In this report, they are referred to as **program participants, natural entities, treated, or unemployed beneficiaries**. The treated are those who started the program but did not necessarily complete it.

Unemployed person: a person registered as unemployed at the bureau for employment.

Job Voucher 2014: The name of the intervention, a wage-subsidy program aimed at disadvantaged unemployed persons, and launched for the first time in 2014. In this report, it is also referred to as **the Program Voucher 2014, Voucher 2014** and **the intervention**.

EXECUTIVE SUMMARY

This evaluation report presents the results and recommendations of a rigorous evaluation of the Job Voucher 2014 intervention. This program was funded by the Federal Employment Institute (FEI) and implemented by the Cantonal Employment Services (CES). This is a wage subsidy program that targeted a group of disadvantaged unemployed persons who satisfied three conditions simultaneously: a minimum of 40 years of age; a maximum qualification of high school certificate; and a minimum 24 months of unemployment.

The purpose of this evaluation study is to contribute knowledge and understanding of the impact of the interventions on the transition from unemployment to unsubsidized employment, for the FEI.

This evaluation was conducted through a mixed-methods approach consisting of a non-experimental impact analysis and a performance study. The impact analysis utilized the rigorous study design to examine the causal effect of the intervention on unsubsidized employment each month over a twelve-month period. The first period measured was the first month after the Program was supposed to end.

The performance study intended to investigate how activities were implemented, and how companies and unemployed persons perceived the Program. It also investigates why the Program did not cover all 60 unemployed per canton, as intended.

The Program showed a significant causal effect in all twelve months. However, the results for the first two were affected by a provision in the law, according to which a person may receive social benefits after being employed for 8 months. There is no significant difference in the effect between genders, except in the third observed month, in which the impact for men was slightly higher than it was for women.

The evaluation showed that in general both employers and employees were satisfied with Program implementation. Matching unemployed persons with companies was conducted in three ways: by the employers' incentive; by the incentive of the unemployed person; and cantonal or municipal bureau mediation. The conducted survey showed that the employers' incentive was dominant. The floods affected the unequal implementation of the Program, especially in Posavina Canton. Other reasons for unequal implementation could be lower economic activity in some cantons, especially CI0, and the fact that the Program considered equally the disadvantaged population in each canton.

Most of the recommendations presented have already been adopted by the FEI, which proves the flexibility of the Program specifications, and the adaptability of institutions to meet the needs *on the ground*. The length of the Program should stay the same, and due to the positive impact we recommend extending the Program to more users.

Since this evaluation observes short-term effects, it would be useful for decision makers to measure effects in the mid-term and long-term. Subsequent Vouchers programs had different target groups; therefore we recommend additional impact evaluation and comparison of results with those of Voucher 2014.

I. INTRODUCTION AND CONTEXT OF THE PROGRAM

The “Job Vouchers” intervention evaluated in this study is a wage subsidy program that was implemented for the first time in 2014. The Program was financed by the Federal Employment Institute (hereinafter: FEI), and was implemented in all cantons through Cantonal Employment Offices (hereinafter: CES) and Municipal Employment Bureaus. The target group was unemployed persons over 40 years of age, regardless of work experience, who had been registered for at least 24 months at the unemployment bureau, and had a maximum secondary education. The aim was to assist the unemployed person through “vouchers” distributed at CES, to seek independently employment in order to integrate into the labor market, thus ending long-term unemployment.

The unemployment rate is one of the biggest challenges for decision makers in Bosnia and Herzegovina. According to Eurostat, it is one of the highest in Europe. In 2014, the unemployment rate in the Federation of Bosnia and Herzegovina (hereinafter: FB&H) was 28.4%, and 71% of those unemployed were long term unemployed.

The unfavorable situation in the FB&H labor market demands adequate and active labor market policies. In 2014, the most popular programs (in terms of financial allocation) were wage subsidy programs.¹

To date, no rigorous impact evaluations of employment programs financed by the FEI and implemented in all cantons have been made. Such evaluations are extremely important for program designers, so they can know the impact of a measure.

The purpose of this evaluation study is to contribute knowledge and understanding of the impact of interventions on the transition from unemployment to unsubsidized employment, for the Federal Employment Institute.

This evaluation consists of two types of evaluation: impact evaluation and performance evaluation. The impact evaluation employs quasi-experimental methods using administrative data. We applied Propensity Score Matching and Average Treatment Effect. In performance evaluation, aside from administrative data we used surveys, interviews and voucher documentation.

The evaluation study was implemented as a result of MEASUREBIH’s Request for Proposal on May 11 2017. The goal of the Proposal was to procure an evaluation in order to build local organizational capacity for rigorous impact evaluation, and to build a body of evidence from rigorously evaluated social and economic programs that could inform decision making, and increase the effectiveness of development programs in B&H.

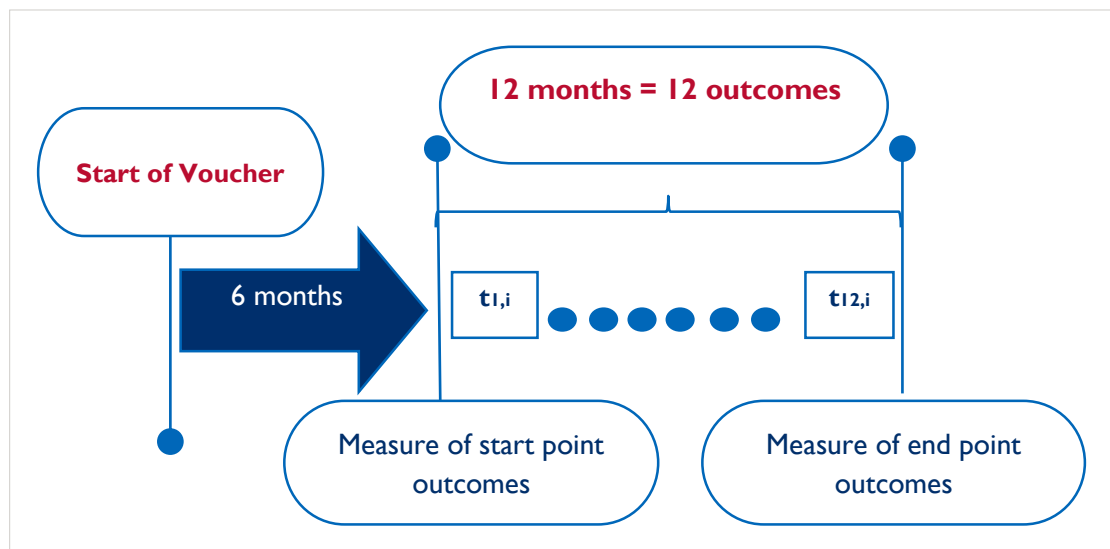
Although the Program was implemented in all ten cantons with a total of 439 participants, we only evaluated eight cantons: those that provided us with comparison databases. The program indicated an age category of 40+, but for this study we limited the target group to up to 60 years of age.

¹ Social inclusion Report for 2014, Directorate for Economic Planning

I.1 EVALUATION QUESTIONS

The **impact evaluation** investigates the effect of the Program on unsubsidized employment for each month in a 12-month period, starting in the month after the Program is supposed to terminate (see Figure I.1). The outcome for each month is binary: 1 if the person was employed in a particular month, and 0 if not.

Figure I. 1: Visual Overview of Outcomes



Note: “i” stands for the individual, since the start time of the Voucher varies for each participant

Additionally, we investigated potential differences in outcomes between genders. According to the B&H Agency for Statistics, males have higher employment rates than females, thus we wanted to investigate if the outcome of this intervention depended on gender.

Implementation of the Job Vouchers program was not distributed equally throughout the eight cantons. The purpose of the **performance evaluation** is to investigate why those differences occurred.

In the performance evaluation we analyzed:

- how the unemployed, the companies, and the cantonal employment officers perceived the Program;
- how the Program was implemented;
- how many participants completed the Program;
- why the unemployed were dropping out of the Program;
- how many of them remained employed after the Program ended;
- the costs of the Program.

The structure of this evaluation report is as follows:

- A description of the Program is provided in the **second section**, Background of the Program;
- methods and a description of data are provided in the **third section**;
- the findings are presented in the **fourth section**;
- conclusions and recommendations are given in the **fifth section**.

2. BACKGROUND OF THE PROGRAM

The Federal Employment Institute (hereinafter: FEI) in cooperation with Cantonal Employment Services (hereinafter: CES) implemented The "Job Voucher 2014" Program. This is a wage subsidy employment program, by which the FEI and CES co-finance the employment of persons difficult to employ. The target group of this Program is unemployed persons over 40 years of age, regardless of work experience, who have been registered for at least 24 months at the employment bureau, and who have completed a maximum secondary level of education.

The aim is to help the unemployed person through "vouchers" distributed at CES, to seek employment independently in order to integrate into the labor market and to end their long-term unemployment.

The program provides financing for six months in the amount of 490 BAM per month per person, or a total of 2,940 BAM per person. Funds are paid to the employer after signing a contract with the FEI and CES, and after the employer provides evidence that the salary is paid to the co-financed person.

The Public Call for Applications for the Program was published on 5 May 2014. Applications for Job Voucher 2014 ended officially on 31 December 2015. Contracts were signed with companies by the end of the first quarter in 2015, and the last payment was made in February 2016. The total value of the Project was 1,300,564.43 BAM.

The voucher itself was a form, available on the FEI web portal. Any unemployed person, who satisfied above mentioned conditions, could use it. If an employer selected an unemployed person, he/she signed the voucher, which was then submitted with a copy of the Public Call for Applications.

The Public Call was aimed primarily at the unemployed, encouraging them to apply for participation in the program. However, although unemployed persons from the target group could actively seek an employer, the contracts were signed between the FEI and the companies.

The implementation process of Voucher 2014 had three steps:

1. Fulfilling the Public Call for Applications online by the participants
2. Checking and processing received applications by the FEI
3. Conclusion of Co-financing Agreements

In total, in all ten cantons 439 unemployed persons received assistance through Voucher 2014, of which 208 were women. The Program included 364 companies.

According to the FEI Report on the implementation of the Program, most participants who benefited from the program had a secondary education (338, or 77%).² The average age of beneficiaries was 49.21 years, and on average they had been unemployed for 83.62 months.

² These statistics cover all ten cantons

This confirms that the Program encompassed a category that had an unfavorable position in the labor market.

2.1. GENERAL CHARACTERISTICS OF PROGRAM PARTICIPANTS

Although the Program was implemented in ten cantons the evaluation is restricted to eight. The reason for this is that the Association for Proactive Empirical Research and Analysis (hereinafter: PREMISA Association) received comparison databases from eight cantons. The research is limited to unemployed persons aged 40–60, as most elderly persons are retired.

In eight cantons, the total number of participants 40–60 years of age was 386³. The average age was 48.6, and the average length of unemployment prior to the Program, was 60 months. Most of the treated (79%) had completed high school, while the rest had completed elementary school.

Table 2. 1: Qualification Distribution among Those Treated*

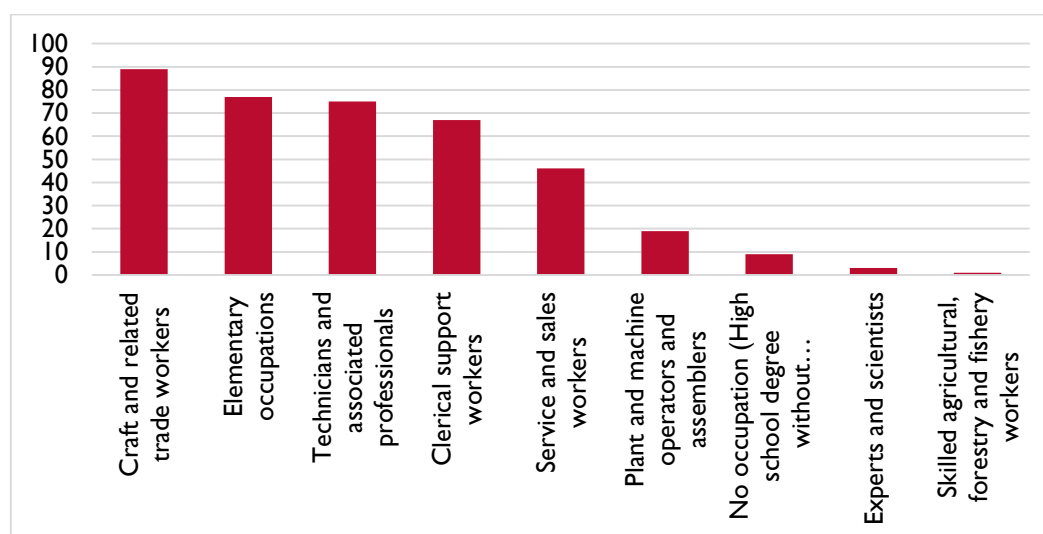
	Completed elementary education		Completed secondary education		
	Not qualified	Semi-skilled	Skilled	Highly skilled	Intermediate specialists
# of participants	68	13	84	3	218
% Share	17%	3%	22%	1%	56%

Source: Treatment database

* The division is made according to the Qualification Framework in Bosnia and Herzegovina (Official Gazette of B&H 31/2011)

Most participants were craft and related trade workers (23%). Every fifth participant had an elementary occupation. The smallest share of program participants was comprised of skilled agricultural, forestry and fishery workers.

Figure 2. 1: Vocation of Program Participants



³ One person was omitted from the study due to death during program implementation

Note: Qualifications are grouped according to the Law on Standardized Occupation Qualification, Official Gazette of FB&H 22-04, Decision Addendum 183

Differences between participants were observed in prior work experience, whether they were demobilized soldiers, and their place of residence four out of five participants had prior work experience; every fourth participant was a demobilized soldier; and two out of three had urban residence (see Table 2.2).

Table 2. 2: Additional Characteristics of the Treatment (N = 386):

	Gender		Prior work experience		Demobilized soldier		Urban/Rural	
	female	male	yes	no	yes	no	Urban	Rural
%	51%	49%	82%	18%	25%	75%	66%	34%
#	195	191	316	70	95	291	254	132

Company characteristics

There were 338 companies, employing 386 participants. In private companies, 364 participants were employed; in public bodies 15; and in NGOs 7. Every fourth participant was employed in the wholesale and retail sector (see Table 2. 3).

Table 2. 3: Companies by NACE (Statistical Classification of Economic Activities in the European Community)⁴, and Number of Participants

		#of Vouchers participants	%share in total
<i>Agriculture, forestry, fishery</i>	A	11	3%
<i>Manufacturing</i>	C	81	21%
<i>Water supply</i>	E	3	1%
<i>Construction</i>	F	54	14%
<i>Wholesale and retail; repair of motor vehicles</i>	G	102	26%
<i>Transportation and storage</i>	H	15	4%
<i>Accommodation and food service activities</i>	I	39	10%
<i>Information and communication services</i>	J	2	1%
<i>Professional, scientific and technical activities</i>	M	25	6%
<i>Administrative and support service activities</i>	N	10	3%

⁴NACE (Nomenclature des Activités Économiques dans la Communauté Européenne) is a European industry standard **classification system** similar in function to Standard Industry **Classification** (SIC) and **North American Industry Classification System** (NAICS) for classifying business activities.

<i>Public administration and defense</i>	O	1	0%
<i>Education</i>	P	9	2%
<i>Human health and social work activities</i>	Q	7	2%
<i>Arts, entertainment and recreation</i>	R	6	2%
<i>Other services</i>	S	21	5%

Note: "Law on Classification of Activities in Bosnia and Herzegovina" ("Official Gazette of B&H", no. 76/06, 100/08 and 32/10)

Data source: Federal Employment Institute treatment database

Companies employed a maximum of five participants, but this was rare. In most cases, one company employed one participant.

3. METHODS, DATA AND LIMITATIONS

3.1. IMPACT EVALUATION

3.1.1. Method description: Propensity Score Matching and Average Treatment Effect

Propensity Score Matching (hereinafter: PSM) is widely used to create a matched sample. It is a technique that helps us estimate the effect of the Program against the counterfactual. Since we did not have randomly selected treatment and control groups, we created an untreated group using PSM. The goal is to estimate the effect of the Program on those treated, taking into account what would have happened if these persons hadn't participated in the Program. After creating a matched comparison group, we estimated the effect using the Average Treatment Effect.

The propensity score is a number that depicts the conditional probability of being assigned or not assigned to a particular treatment.

It can be presented as:

$$e(x_i) = P(D_i=1|X_i) \Rightarrow \text{probability of being treated given } X$$

$e(x)$ => represents the propensity scores

P => is probability

$D=1$ => stands for treated

X => is a set of observed covariates

To estimate propensity scores we used the covariates presented in Table 3. 1. Our dependent variable, treatment, was binary: 1 for treated and 0 for not treated (Annex: A).

Table 3. 1: Covariates Used for the Model⁵

Variable	Type of variable
<i>Cantonal employment service</i>	Factor variable, name of canton
<i>Age interval</i>	Factor variable, five-year interval
<i>Occupation*</i>	Grouped into nine categories according to the official classification of occupation
<i>Level of education / Qualification</i>	Factor variable
<i>First time employment</i>	Binary variable

**Note: in the CES database "finished high school" was a category, under "occupation". We listed this as a separate occupation, since we could not match it with an occupation from the official classification.*

⁵ Details of the model are in Annex A. The VIF was calculated using "car" (John Fox and Sanford Weisberg (2011). An {R} Companion to Applied Regression, Second Edition. Thousand Oaks CA: Sage. URL: <http://socserv.socsci.mcmaster.ca/jfox/Books/Companion>)

<i>Disabled war veterans and other disabled person</i>	Two joint variables (1 for yes, 0 for no)
<i>Rural/Urban</i>	Factor variable Transformed according to the addresses we received. We used a document from the Federal Office of Statistics to determine rural or urban location

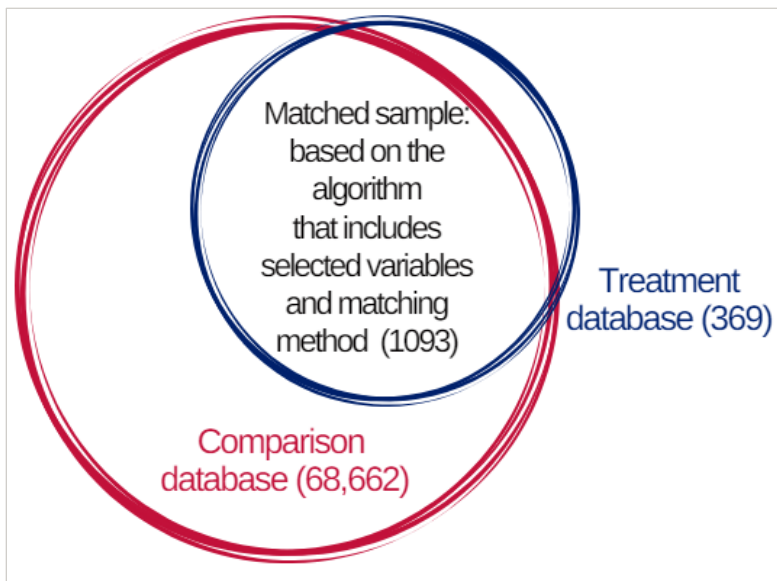
To create a matched sample, we used the “MatchIt”⁶ package, with the method of nearest neighbor, ratio = 2 and caliper = 0.1 (see Annex A for output tables and the balance between matched and unmatched samples) in R version 3.5.0.

The initial database consisted of 72,015 comparison and 386 treated. After discarding the outliers and the Vouchers 2016 and Vouchers 2017 treatments, the sizes of databases for estimating propensity scores were 68,662 in comparison and 369 in treated.

Before matching, the Standardized Mean Difference was 0.4978, and after matching it was 0.0007. The ratio of variance of propensity scores in the matched sample is 1.23 (see Annex A for balanced covariates, before and after matching).

The matched sample consisted of 684 from the comparison/untreated group and 348 from the treated group, which means 67,978 were discarded from comparison and 21 from treated. (see Figure 3.1).

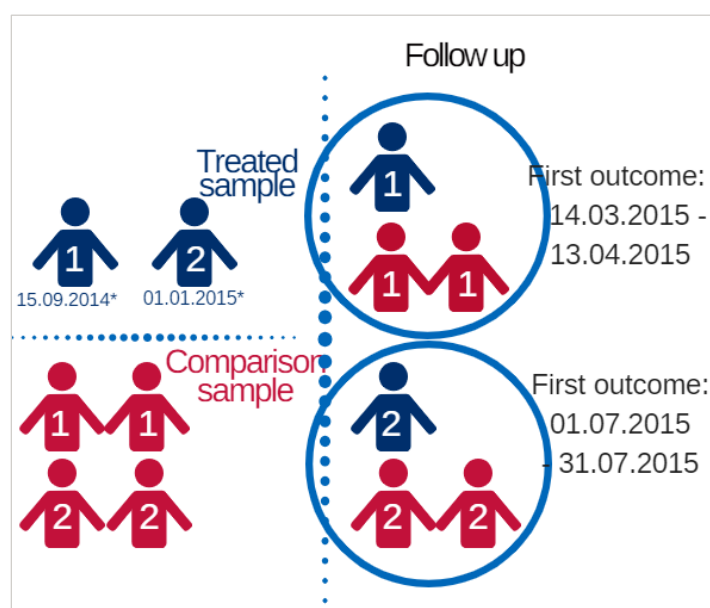
Figure 3. 1: Obtaining a Matched Sample through PSM



After obtaining the matched sample, we cross-checked the tax office database for follow-up information on unsubsidized employment. We checked each month after the Program was supposed to terminate, for a twelve-month period. This means we followed up twelve outcomes for 1,093 individuals. For the comparison/untreated groups we referenced the data according to their matched treated pair (Figure 3.2 on follow-up).

⁶Daniel Ho; Kosuke Imai; Gary King; and Elizabeth Stuart (2007b) “MatchIt: Nonparametric Preprocessing for Parametric Causal Inference,” Journal of Statistical Software, <http://gking.harvard.edu/matchit/>.

Figure 3. 2: Follow-up on Unsubsidized Employment for Two Cases



Note*: dates refer to start of the voucher. The dates are chosen provisionally for the purpose of this example

After obtaining the outcome variable (unsubsidized employment) for all twelve months, we calculated the conditional average treatment effect of the Vouchers program, based on the linear regression model via the Zelig⁷ package in R. This package calculates the predicted and expected values of the model. Their first difference presents the average treatment effect.⁸

The average treatment effect was estimated using the matched treatment database (N = 348), and the matched comparison database. For some individuals there were no data for a particular month, so they were omitted from the observation for that month. Because of this, the size of the sample varied from month to month (see Annex F)

3.1.2 Databases for Impact Evaluation

Impact evaluation uses administrative databases.

The **treatment database** is the database on Voucher 2014 participants. The FEI is in charge of this database, which contains socio-demographic information (date of birth, gender, length of unemployment, participation in other active programs, level of education and occupation) about Program participants. The database consists of 429 program participants, but due to restrictions this study uses 386 participants.

We collected **comparison databases** from 8 cantonal offices (all cantons except SBC and BPC). The total comparison database had 72,015 unemployed persons. The additional variables that were collected through comparison databases were:

⁷Choirat C, Honaker J, Imai K, King G, Lau O (2018). *_Zelig: Everyone's Statistical Software_*. Version 5.1.6, <URL: <http://zeligproject.org/>>.

⁸For more on this see: <https://zeligproject.org/>

- first time job seekers;
- length of employment;
- urban/rural;
- families of fallen soldiers;
- demobilized conscripts;
- disabled war veterans;
- other disabled persons;
- members of an ethnic minority – Roma;
- previously participated in a wage subsidy program;
- previously participated in a training program.

The evaluators transformed the Occupation and Rural/Urban variable. The occupation variable was grouped according to the Standardized Qualification of the Occupation⁹ in ten occupation genres. The Standardized Qualification Occupation is created according to the principals and system of the International Qualification Occupation (ISCO - 88), more specifically its European version (ISCO-88 COM) (see Annex A).

The Rural/Urban variable was created using addresses on one side, and the Systematic List of Municipalities and Settlements in FB&H¹⁰ on the other. The Systematic List recognizes two types of residence: urban and other. For this evaluation report, we denoted other as rural.

After Voucher 2014, two more Vouchers programs were implemented: Voucher 2016 and Voucher 2017.¹¹ We gathered 8 cantonal **databases on the treatment of Vouchers 2016** and 8 cantonal **databases on the treatment of Vouchers 2017**. The aim of this was to extract subsidized employment from the comparison group. In total, 337 participants from Vouchers 2016 and Vouchers 2017 were extracted from the comparison group.

An overview of the databases is shown in Table 3.2.

Finally, we used the **Federal tax office database** to checking employment status for the matched sample. In total we checked 1,032 persons for unsubsidized employment status in the 12 month period after the Program was supposed to end. We looked at each month (12 outcomes) to check whether or not the person was in unsubsidized employed.

Table 3. 2: Overview of Administrative Databases

Name of database	Source of database	Purpose of database
Voucher 2014 treatment database	FEI	PSM, ATE and output analysis
Comparison 2014	CES	Obtaining Comparison database used for PSM and ATE
Voucher 2016	CES	

⁹ Law on Classification of Activities in Bosnia and Herzegovina (“Official Gazette of BiH ”, No. 76/06, 100/08 and 32/10)

¹⁰ Systematic list of Municipalities and Settlements in the Federation of Bosnia and Herzegovina, Census 2013, Federal Institute of Statistics

¹¹ Voucher 2018 is in the phase of implementation

Voucher 2017	CES	Comparison = Comparison 2014 – Voucher 2016 – Voucher 2017
Employment Status	Tax Office database	Obtaining outcome variable: unsubsidized employment status for matched sample

3.2. PERFORMANCE EVALUATION

3.2.1. Methods

Besides the quantitative analysis of the treatment database, we conducted and analyzed interviews and surveys to evaluate the Program’s performance.

To guide the interview discussions, the PREMISA Association developed a semi-structured interview protocol, attached in Annex B. Surveys were developed in parallel with the work plan after the design was accepted. They are attached in Annex C. The open-ended questions in the surveys were analyzed qualitatively, along with the interviews, according to the implementation evaluation questions. We gave appropriate descriptive codes, and the findings were organized into themes according to the performance evaluation questions.

We quantitatively analyzed multiple choice questions, rank order questions, and dichotomous questions.

In order to ascertain whether the recommendations were employed in the second and third vouchers programs, we reviewed the appropriate documentation.

3.2.2. Input for Performance Evaluation

The goal of **the interviews** was to investigate how activities were implemented, discover the officials’ perspective on the Program, and to ascertain possible reasons for the different distribution of beneficiaries, even though each canton should have had a coverage of 60 beneficiaries. The interviews were conducted with eight cantonal employment services and with FEI officials in the period July–September 2018 (see Annex B: Interview Protocol).

All interviews were conducted in person except one, which was conducted by phone (Canton 10). The average length of the interviews was 35 minutes.

The goal of the **surveys** was to identify the positive and negative aspects of program implementation, and to suggest improvements to the Program. We also wanted to assess whether participants were satisfied with employers, and vice versa.

We constructed a stratified random sample, with a sample size of 50 unemployed persons (natural entities) and 50 companies (legal entities). The conditions for stratification were: the proportion of beneficiaries who did not complete the Program; the proportion of beneficiaries who completed the program but were not employed after the Program; and the proportion of beneficiaries who worked after the Program. Officials from Cantonal Employment Services conducted the surveys in the period May–September 2018.

The response rate was 70% for natural entities and 65.3% for legal entities (see Annex C):

We analyzed **documentation** from Voucher 2014 and subsequent Vouchers, in order to see if changes were made to the Program design and program implementation, such as target group, general conditions, and process of realization.

We wanted to establish if some recommendations had already changed in subsequent Vouchers programs.

3.3. EVALUATION LIMITATION

The impact evaluation uses a quasi-experimental research design to test the causal effect of an intervention. Like any other quasi-experimental design, it lacks the random assignment that characterizes RCTs. Propensity Score Matching was used to estimate the comparison group.

The other limitation was the validity of the comparison database.

In B&H the discrepancy is often discussed between labor market measures reported by the Federal Employment Institute (administrative data), and by the Agency for Statistics (survey data, based on ILO methodology). The cantonal databases on unemployment registries contain LFS inactive populations. This means that cantonal databases contain populations that are motivated to register at bureaus in order to access social and health benefits.

When we were designing this Evaluation Study, we asked FEI officials for their position on a comparison database that would contain inactive and employed populations. The FEI informed us that municipal bureaus delete persons from their database on a daily basis if they neglect to register, or refuse a job that the bureau offers. Because of this, they strongly believe that the database is valid. The database should not include a significant number from the inactive population that might drastically influence the results.

We also used a PSM that would decrease potential bias.

4. FINDINGS

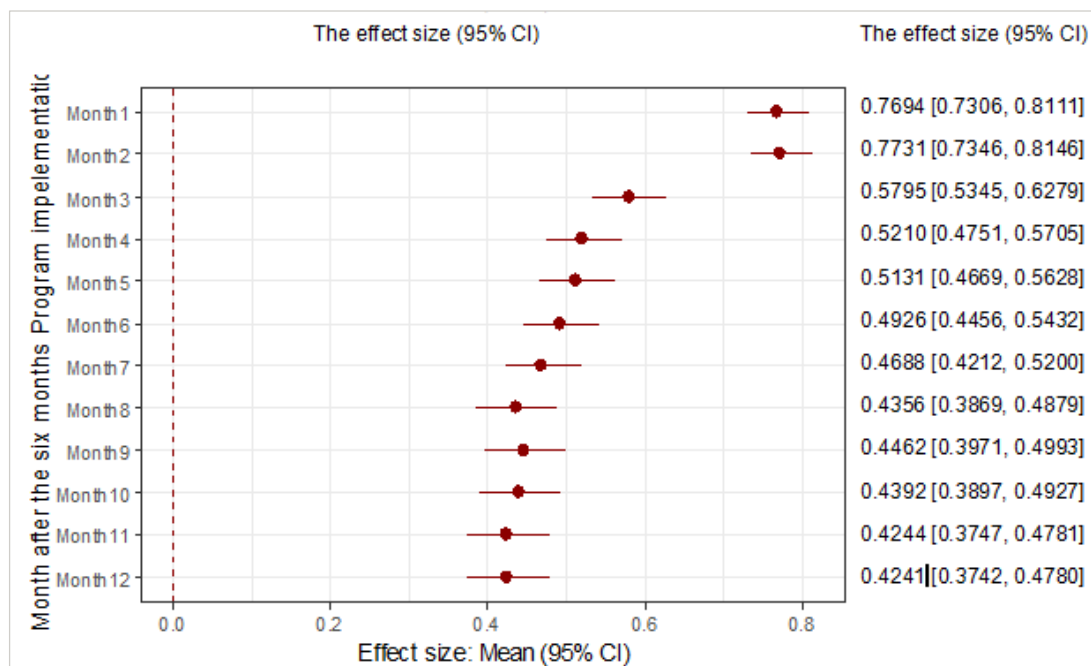
4.1. IMPACT OF THE PROGRAM

We examined the effect of the intervention on unsubsidized employment month by month, over a twelve-month period. The first month for which we estimated the effect was the seventh month after the start of the Program.

As recommended by the MatchIt authors¹², we used the Zelig package to estimate the Average Treatment Effect.

We used a conditional Average Treatment Effect for the Vouchers program, based on a linear regression model. The effects for all twelve months are presented in Figure 4. I.

Figure 4. I: Effect Size of the Program



*** $p < 0.001$

The impact of the intervention was highest in the first two months after the Program ended, with a mean effect of .77. In the third month, the effect dropped to .58. In other words, in the third month the Program increased the mean employment rate by 782% (see Annex E: table for mean employment rates for treatment and comparison groups.)

The effect for the first two months is not a “real” effect. According to the Law on Employment, Mediation and Social Security Offices of Unemployed Persons¹³, if a person works continuously for eight months, he/she will receive 30% of the average FB&H salary (calculated in the three months before termination of the contract) in benefits, for the next 6 months.

¹² <https://r.iq.harvard.edu/docs/matchit/2.4-20/matchit.pdf>

¹³ Law on Employment and Social Security Offices of Unemployed Persons (Official Gazette of FB&H, 2.10.2001.)

This means that after the 6 months of Voucher 2014, some participants arranged with an employer (a Voucher employer or another legal entity) to put him/her on the payroll for an additional two months so that s/he could receive social benefits from the bureau for the next 6 months. This explains the big difference between the effect size in the first two months, and in the third month. The mean difference in effect between the second and third months is 0.2521.

On average, the effect for all twelve months was 0.5239 (0.4776, 0.5739), and for last ten months 0.48 (0.4312, 0.5304). This means that in the last ten observed months, the Program increased the mean employment rate by an average of 551%.

Concerning gender, a significant difference in effect size was observed only in the third month. The size of the effect was higher for males than for females by 5% ($p < 0.05$). (See Annex: E for regression results for all months).

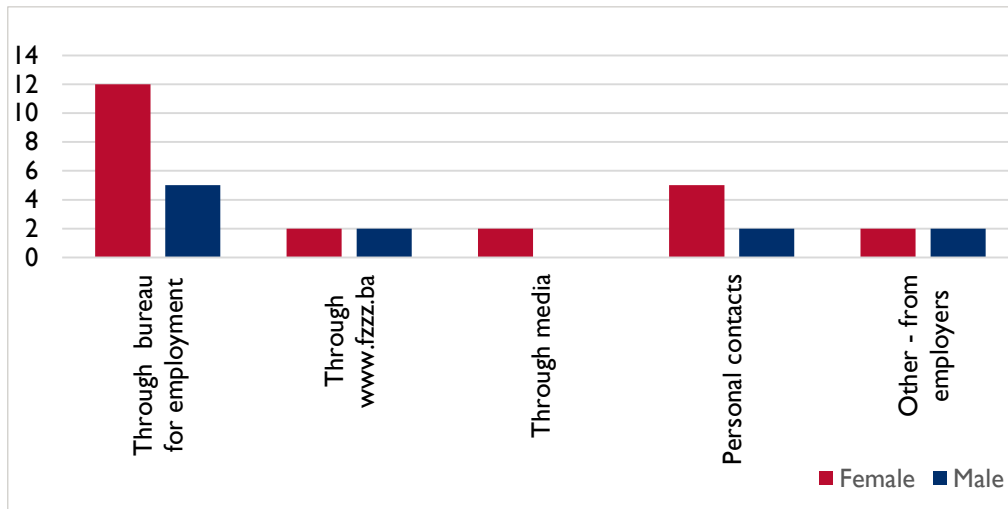
4.2. PERFORMANCE EVALUATION OF VOUCHER 2014

4.2.1 Implementation of the Program

The FEI published the Program's Public Call for Applications on 5th May 2014. The first contract that an employer signed with an unemployed person was on June 1 2014, and the last one was almost a year later (1 March 2015). In total, 95.6% of participants completed the Program. One person died during implementation, and was no longer considered for further analysis. Three of the persons who dropped out of the program found a job with another employer. Thirteen persons dropped out without providing a reason. Since the Program was not characterized by participants who dropped out, we did not investigate this further.

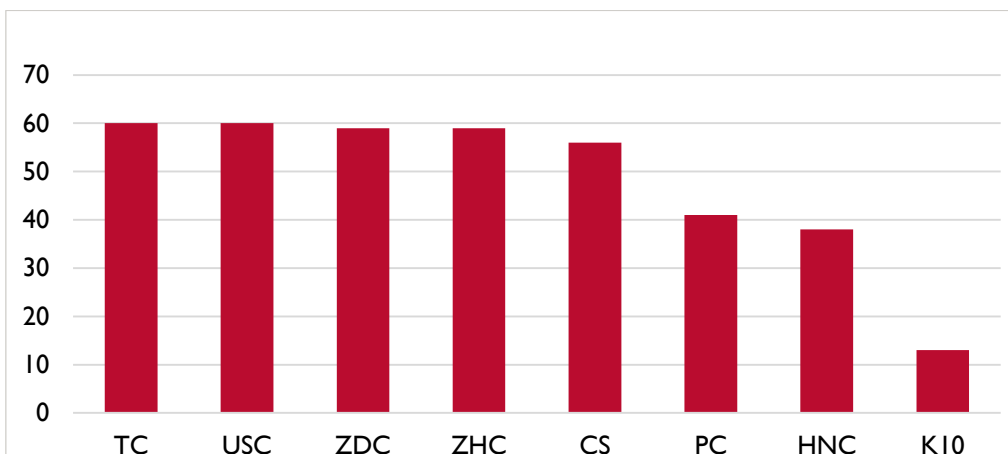
Most of the natural entities surveyed reported that they found out about the Program through the media, the employment bureau, or the FEI web page (24 out of 35). The rest reported that they had found out about the program through the employer, or from friends or relatives.

Figure 4. 2: How Participants were Informed about the Program (Results by Gender)



The quota assigned to each canton for Vouchers implementation was 60 unemployed beneficiaries. Five cantons successfully filled their quotas, and three did not. Figure 4.3 represents the distribution among cantons.

Figure 4. 3: Distribution among Eight Cantons



Source: FEI treatment database, Voucher 2014

Note: This distribution is restricted to 40–60 years of age, so not all Vouchers participants were counted

In order to obtain information on the difference in implementation across cantons, we conducted an interview with each cantonal officer involved in the implementation of the measure, and with the FEI.

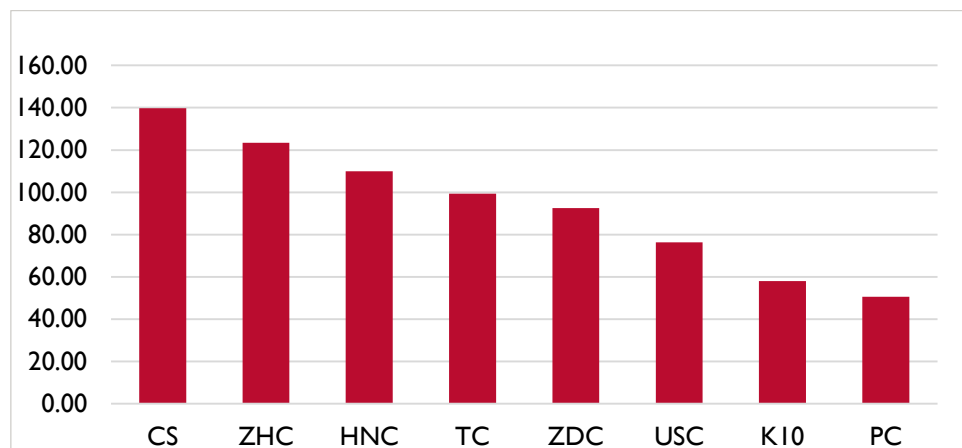
Reasons for under implementation

The lowest Program participation was in C10, HNC and PC.

The reasons for the unequal distribution among cantons reported during the interviews could be the **economic activity** in the canton. If a canton was not economically active, it was not interested in employing someone from the disadvantaged group. We checked this argument

against the Development Index in FB&H. Although PC and C10 score poorly, it cannot explain why HNC did not implement all 60 vouchers.

Figure 4. 4: Development Index in FB&H, 2014 (FB&H = 100)



Source: Socioeconomic indicators across municipalities in FB&H in 2014, April 2015, Federal Institute for Programming Development

In May 2014, B&H was dealing with severe **floods**. During interviews in some cantons (namely PC and ZDC), cantonal officials reported flooding as a possible obstacle to program implementation. However, ZDC fulfilled its quota with the other municipalities (most of the flooding was in Maglaj). In PC most participants were from Odžak, except one from Orašje and two from Domljanovac-Šamac, the two municipalities that suffered the most during the floods.

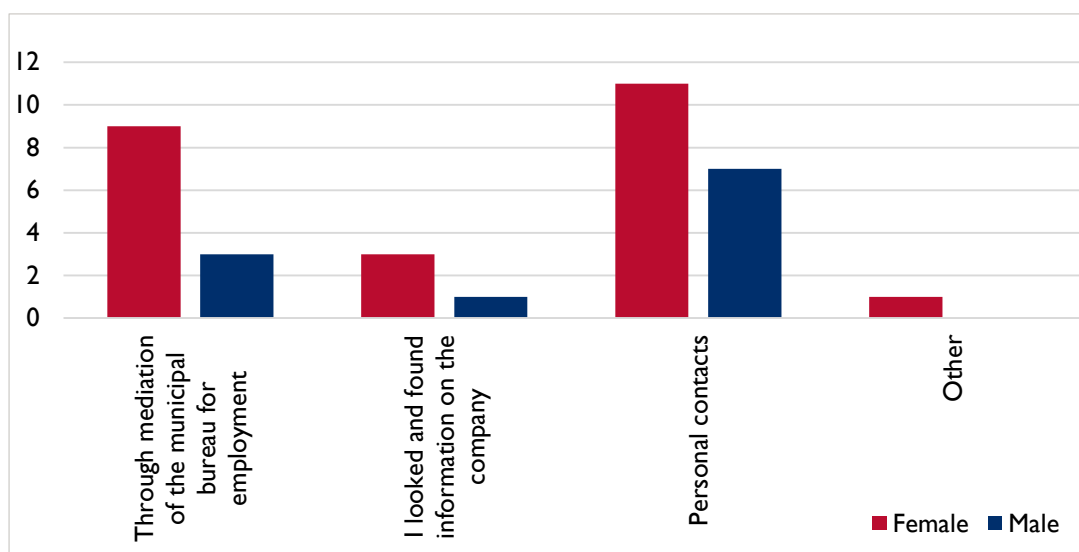
The third factor that could have influenced Program implementation was that **the target group was defined too narrow and equally across the cantons**, and what is a disadvantage in one canton is not necessarily in another. During their interview, HNC representatives reported that programs implemented across all cantons should have some flexibility in defining what a disadvantaged group means for each specific canton. They feel that a situation analysis should be conducted in each canton to check whether it is applicable to all, and whether any changes should be made to accommodate cantonal specifics.

Matching unemployed persons with companies

The surveys showed us that companies and the unemployed were matched in several ways. Relationships and levels of satisfaction between the employers and beneficiaries who took part in Voucher 2014 were assessed in a survey. Twenty-five of the employers surveyed employed 1 beneficiary, five employed two beneficiaries, one employed three, and one employed five. In total, placements were found for 43 persons.

The employers reported that 31 persons in the Program were employed through the employer's incentive and 7 were not. Eighteen of 35 unemployed persons reported that they got in touch with employers through personal contacts and 12 through mediation from the municipal bureau. Only 4 out of 35 reported that they sought information about the company independently, and made contact with it themselves.

Figure 4. 5: Method of Contacting the Employer (Results by Gender)

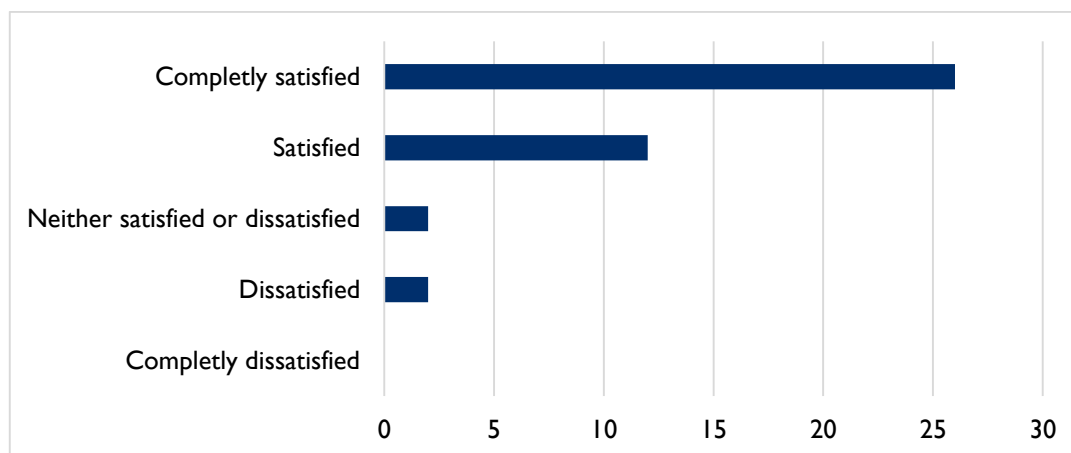


Relationships between employers and employees during and after the program

Information on the relationships between employers and employees was established using the treatment database and the surveys.

The 32 surveyed employers were providing answers for 43 treated persons. The employers were very satisfied with the voucher participants 26/43, satisfied 12/43, for two persons they were not satisfied and for two there were neither satisfied nor unsatisfied. Not a single employer reported to be completely dissatisfied.

Figure 4. 6: Employer Satisfaction with the Choice of Vouchers Employee, and His or Her Level of Commitment



The employers surveyed reported that 27 out of 41 participants (65.9%) stayed employed after termination of the Program, and 14 did not.

The treatment database analysis shows that 95.6% participants completed the Program (N=386). The first month after the Program ended 82.9% participants were employed, and the last observed month indicates that 45.6% of participants were employed. During the observation period (the 12 month period after the Program was supposed to end), 90–95%

of those treated who were in unsubsidized employment were employed with their Vouchers employer.

The reasons for not accepting Voucher participants after the termination of the program are listed in Table 4. 1. The answers were categorized into four groups: employer incentive, worker incentive, both, and other.

Table 4. 1: Reasons for Not Accepting Vouchers Participants after the Termination of the Program

Category	#of Cases	Examples
Employer incentive	6	“Because of the reduction in the volume of work, there was no need for further employment.” (Private company, Agriculture)
Worker incentive	5	“The employee stopped working to pursue an opportunity to work abroad.” (Private company, Industry)
Both	1	„She did not express any desire to remain in the workplace-cleaner.“ (Private company, Services)
Other	1	“We re-employed the person later, and that person is still working for us.” (Private company, Services)

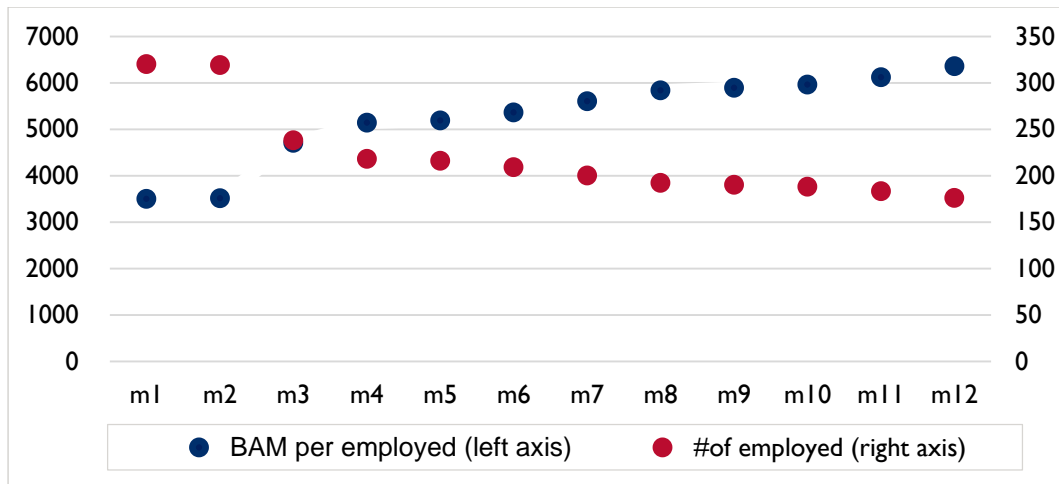
Cost of the Program

This section analyses the cost of the Program for all participants, but also per participant who completed the Program, and those who remained employed after their contracts ended.

The program provided financing for six months in the amount of 490 BAM per month per person, or a total of 2,940 BAM per person. Funds are paid to the employer after signing a contract with the FEI and CES, and after the employer provides evidence that the salary has been paid to the co-financed person.

The Law on Employment and Social Security Offices of Unemployed Persons contains a provision that after eight months’ employment an unemployed person receives a financial benefit of approximately 250 BAM per month for six months. Because of this, there was a drop in unsubsidized employment in the third month after the end of the Program.

Figure 4. 7: BAM per Person Employed and by Number of Persons Employed



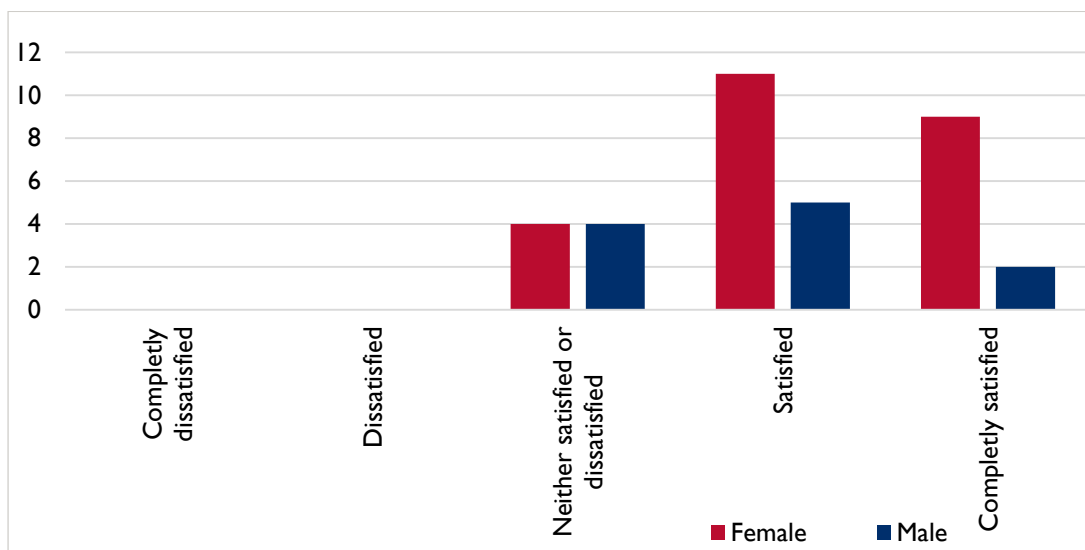
4.2.2 Positive aspects and challenges of program implementation

Positive aspects of the program

Employers rated the Program with an average score of 4.33 (on a scale from 1 to 5). Generally, the employers surveyed were satisfied with the program, and 32 of them declared that they would participate again in the same or a similar program. The positive aspects mentioned were conditions, communication, and the timely manner in which resources were distributed.

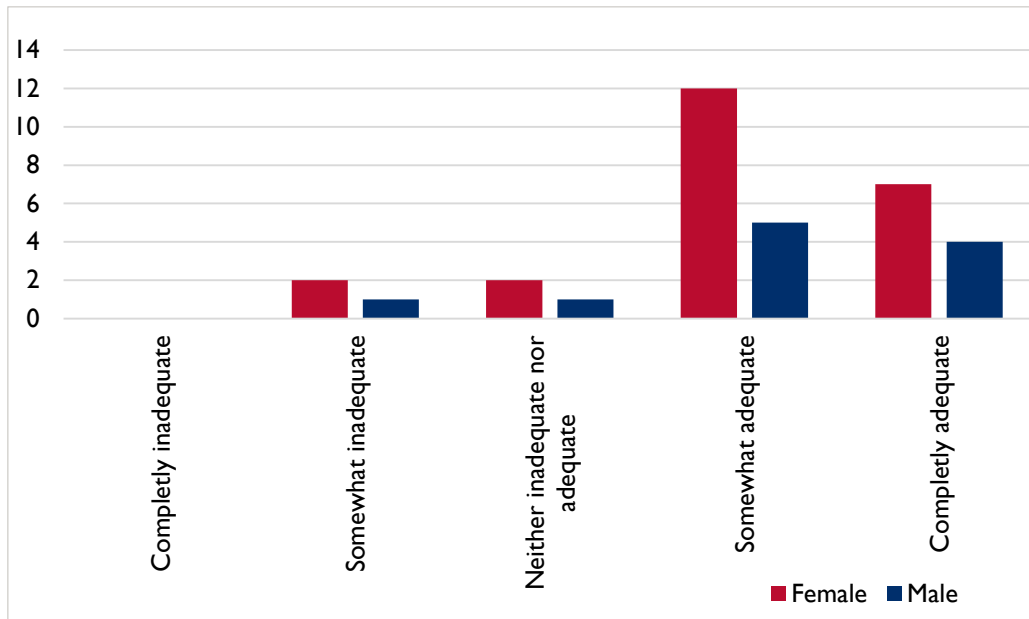
During the survey, 16 out of 35 natural entities were satisfied with the benefit they gained during the Program, 11 of them were completely satisfied and 8 were neither satisfied nor dissatisfied. None were dissatisfied or completely dissatisfied. For gender disaggregation, see Figure 4. 8.

Figure 4. 8: Employee Ratings of Benefits Gained through the Program (Results by Gender)



Natural entities mostly reported that the Program was adequate for their level of education and skills.

Figure 4. 9: The Extent of the Program’s Adequacy Based on Participants’ Level of Education and Skills (Results by Gender)



Positive aspects from the participants’ perspective were: income (mentioned nine times), the Program’s target group (mentioned three times), the gaining of new skills, and the award of an internship (mentioned once each).

Table 4. 2: Positive Aspects of the Program and Program Implementation

	Code	Frequency of code	Examples
Employer	Conditions	5	“Everything was great, cooperation, consulting, communication etc.” (Private company, Services)
	Timely manner	1	“...the contract was fully respected, and subventions were paid on time” (Private company, Industry)
	Communication	2	“Affability and readiness to help in line with competencies.” (Private company, Services)
Vouchers participant	Income	9	The Program was good. It enabled me to be active again, with an income, after being unemployed for a long time. (Female, unemployed)
	Skills	1	With this job, I renewed my knowledge and skills in my profession. (Female, unemployed)
	Target group	3	Great program, addressing disadvantaged groups (Female, unemployed)

	Internship	1	<i>Opportunity to gain at least a 6-month internship. (Female, unemployed)</i>
Interviews	Motivation to participate	6	<i>“The Vouchers Program was special for both the employers and the unemployed. It is financially significant for the employers, and also for the unemployed disadvantaged group” (PC, Q6: According to your experience, was this Program special, and if so what set it apart from other Projects?)</i>

Although some natural entities surveyed were dissatisfied with some elements of the Program, 32 out of 35 declared that they would stay in the company after the Program if given the opportunity. Additionally, 32 employers declared that they would participate in the realization of the same or a similar Program.

Challenges of program implementation

The Program was implemented for the first time by the FEI with CES cooperation.

One of the biggest challenges was to connect entrepreneurs and the disadvantaged population, who are actually discouraged from finding employment.

The FEI experienced pressure from the entrepreneurs’ side to change the conditions for workers. This was the first time a program like this has been implemented, and the financial inputs were considered to be “the motivating factor for employers and employees“, as mentioned several times during the interviews.

Employers outlined the challenges in the open-ended question of the survey (Comments and recommendations), and the open-ended question on reasons for not being satisfied with the FEI.

Participants described their challenges in open-ended questions, where they were given the opportunity to explain why they were not satisfied with particular aspects of the program.

Challenges mentioned by employers were late payments, and a slow and badly informed contract procedure. It is important to mention that only three persons directed criticism at the Program.

Table 4. 3: Challenges Outlined by Employers, Participants and Officials

	Code	Frequency	Examples
Employer = N	Slow contract procedure	2	<i>“..signing the contract on wage subsidy took too long. Three months is too slow.” (Private company, Services)</i>

	Poorly informed	1	<i>"I wasn't well informed about the services available." (Private company, Services)</i>
	Late payments	2	<i>"The payments were delayed." (Private company, Services)</i>
Participant N=35	Income	3	<i>"Persons without work experience often have to return the subvention to the employer." (Female, employed)</i>
	Skills	3*	<i>"I had extensive previous work experience, so did not learn new skills." (Female, employed)</i>
	Program criteria***	3	<i>"Employers seek younger persons." (Female, unemployed, 61 years old)¹⁴</i>
Interviews (8 with CES officials and 1 with the FEI)	Program criteria**	2	<i>"There were no measures to cover unemployed persons from 30–40 years of age with several years of unemployment, although those people are also disadvantaged" (USC, Q8, what would you change in this Program?)***</i>
	Application procedure	5	<i>"The electronic application and certain details ... that were later adopted in other measures." (TC, Q8, what would you change about this Program?)</i>
	Economic weakness of the canton	2	<i>"The capacities of each canton in terms of their business activity significantly influenced the Program's realization." (FEI, Q9: In your opinion why was there a discrepancy in implementation between cantons?)</i>
	Floods 2014	3	<i>"There were some cases in the Orašje and Maglaj municipalities." (FEI, Q10: Did the floods influence the Program's implementation?)</i>

*5 participants declared they did not acquire new skills, and three of them explained why. The explanations are shown in column 4

**3 participants felt that their chances of finding a job did not increase, due to their age

***These criteria were changed later

Three Vouchers participants out of 35 named income as a negative aspect of the program. From their comments, it was evident that their employers did not fully respect the conditions of the Program, and these employees did not receive the full amount allocated to them by the Program. When asked about gaining new skills, 5 out of 35 responded that they did not acquire new skills, and 30 reported that they did. Disaggregated by gender, 3 out of 24 females and 2 out of 11 males responded that they did not acquire new skills.

¹⁴ The characteristics at the time when surveys were conducted

4.2.3 Lessons learned

This section is the result of qualitative analyses (interviews and surveys). All three sides (employers, participants, and cantonal officials) gave recommendations for the Program's improvement (see Table 4. 4).

Table 4. 4: Recommendations Given by Employers, Program Participants and FEI and CES Officials

	Code	Frequency	Evaluator's comments
Employers	Improve the contract procedure	3	<i>It wasn't clearly stated which segment of the procedure</i>
	Different conditions to consider (age, length of unemployment)	1	<p><i>Last Vouchers¹⁵ targets:</i></p> <ol style="list-style-type: none"> <i>1. Unemployed persons over 40 years old registered for at least six months at the employment bureau before the employer submitted the application</i> <i>2. Women between 30 and 40 years of age registered for at least six months at the employment bureau before the employer submitted the application</i> <i>3. Long term unemployed persons from 30 to 40 years of age registered for at least 12 months at the employment bureau before the employer submitted the application</i>
	Limit number of unemployed per firm	1	<i>Not applicable for Voucher 2014, because although companies employed a maximum of five persons, most only employed one. In the last Vouchers, the limit was set to 30 per company in one canton</i>
	Increase financial resources	1	<i>Nine Vouchers beneficiaries mentioned income as a positive aspect of the Program, and employers mentioned conditions as a positive aspect 5 times</i>
	Increase the length of program	1	<i>The length should not be increased, since after Vouchers ended, many participants worked an additional two months in order to access social benefits</i>
Vouchers participants	Repeat everything in the same way	6	
	Ensure contract is respected by all parties	1	<i>It is not clearly stated which part of the contract was not respected by all parties</i>

¹⁵ Eligibility for the Program, Federal Employment Institute

	Focus on each individual not program	1	<i>The Program already widen the range of what disadvantaged means</i>
	Increase the length of program	3	<i>The length should not be increased, since after Vouchers ended, many participants worked an additional two months in order to access social benefits</i>
	Keep worker after termination of the subvention	1	<i>Some Programs oblige companies to keep a worker after the termination of the subvention. However, we don't know the impact of these measures, especially in the case of the disadvantaged population</i>
Officials' recommendations	Different conditions to consider (age, length of unemployment)	2	<i>The last Voucher¹⁶ targets*:</i> <i>1. Unemployed persons over 40 years old registered for at least six months at the employment bureau before the employer submitted the application</i>
	To recognize the specifics for each cantonal office and to define the disadvantaged group according to the specificity of individual cantons	1	<i>2. Women between 30 and 40 years of age registered for at least six months at the employment bureau before the employer submitted the application</i> <i>3. Long term unemployed persons between 30 and 40 years of age registered for at least 12 months at the employment bureau before the employer submitted the Public Call for Applications.</i>

*The FEI added special conditions for this particular target group:

- persons with secondary education (III and IV degree) and lower education;
- disabled persons, as well as special needs persons with low to moderate intellectual disabilities
- families of fallen soldiers
- unemployed war veterans
- children of unemployed war veterans,
- children and spouses of persons with a disability rated at more than 60%
- households in which all members are unemployed
- members of an ethnic minority – Roma,
- single parents, persons with custody, and caregivers and their children
- parents to disabled children and parents to children with a serious illness
- victims of violence: civilian war victims, victims of domestic violence, and others
- former addicts
- former users of children's residential care institutions.

¹⁶ Eligibility for the Program, Federal Employment Institute

5. CONCLUSIONS AND RECOMMENDATIONS

The FEI implemented the wage subsidy program Job Vouchers in cooperation with the CES and municipal bureaus, to improve the employability of the long-term unemployed. The intervention was implemented for six months. This evaluation of the Program contributes to the knowledge of the wage subsidy program in the short-term (twelve months), by providing rigorous evidence of the effects, and an in-depth analysis.

Job Vouchers proved to be a very successful intervention in transitioning the unemployed to employment. The effect was largest in the first two months after the Program ended. This effect is not the “real effect”; due to a provision in the Law, participants are eligible to receive social benefits after being employed for eight months. The time they spent in subsidized employment counted as work experience, so they only needed two more months’ employment to be able to access these benefits. Despite this, the Program had a significant effect, as we can see by observing the ten months that were not affected by the provision in the Law. On average, in the last ten months the intervention increased employability by 551%, which is an indicator of significant Program success. The Program not only increased mean employment rates, it also helped the unemployed to look for a job independently, to receive an income, to gain knowledge, and to increase work experience. The program only had a significantly different effect between the genders in the third month of the twelve observed. In the third month, a greater effect was observed for men.

Although the FEI reported that they experienced pressure from employees to lower the “disadvantage threshold”, in general most employers were satisfied with the Vouchers participants.

Although the Program was largely perceived as positive, our qualitative findings revealed some challenges in its implementation, e.g.: the canton's economic activity could not accommodate labor by disadvantaged groups (C10); the 2014 floods (PC); and the definition of the target group (HNC).

The Program was rated with an average score of 4.33 on a scale of 1 to 5. Almost all employers surveyed declared that they would take part in the Program again.

The in-depth analysis showed that 45.6% of participants were in unsubsidized employment in the last (twelfth) observed month, and 90% of those were employed with their Vouchers employer. Six employers reported that they didn’t continue to employ the person due to their own incentive, 5 due to the worker's incentive and one reported both.

While almost all participants we surveyed reported that the Program augmented their income, skills, work experience etc., participants expressed a few concerns about contract violation by employers. However, neither we nor the FEI could prove that the employer violated those rules. This is the jurisdiction of the Federal and Cantonal Administrations for Inspection Affairs, and does not fall within the scope of the Program.

It is important to point out that more research is needed to understand the Program's mid- and long-term effects on employment. Taking into consideration that the target groups of Voucher 2016 and 2017 differ from that of Voucher 2014, it would be useful to conduct a rigorous evaluation of the former two, to contribute to the knowledge of the Program's effect. Although an increase in the length of the Program has been recommended four times, it should remain unchanged.

Due to the Program's success, it should consider a higher coverage to include more unemployed persons.

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ANNEX A Tables and graphs

Table A. 1: Logit model

	Estimate	Std. Error	z value	Pr (> z)	
(Intercept)	-8.456	0.684	-12.366	0.000	***
CoBurCS	-0.784	0.318	-2.468	0.014	*
CoBurHNC	-0.302	0.326	-0.929	0.353	
CoBurPC	1.407	0.329	4.275	0.000	***
CoBurTC	0.678	0.312	2.172	0.030	*
CoBurUSC	0.178	0.312	0.569	0.569	
CoBurZDC	1.033	0.315	3.278	0.001	**
CoBurZHC	1.781	0.315	5.654	0.000	***
Occupation_corrected10	-0.535	0.689	-0.776	0.438	
Occupation_corrected3	0.053	0.600	0.088	0.930	
Occupation_corrected4	0.781	0.603	1.296	0.195	
Occupation_corrected5	2.365	0.612	3.861	0.000	***
Occupation_corrected6	1.548	1.194	1.296	0.195	
Occupation_corrected7	2.578	0.611	4.219	0.000	***
Occupation_corrected8	2.744	0.646	4.247	0.000	***
Occupation_corrected9	4.064	0.680	5.977	0.000	***
RUUrban	0.522	0.118	4.429	0.000	***
age.int45-49	-0.161	0.140	-1.146	0.252	
age.int50-54	-0.280	0.154	-1.820	0.069	.
age.int55-60	-0.044	0.171	-0.259	0.796	
LoENKV	-1.793	0.371	-4.837	0.000	***
LoENSS	3.419	0.507	6.744	0.000	***
LoEPKV	-0.218	0.320	-0.682	0.495	
LoESSS	3.404	0.183	18.621	0.000	***
LoEVKV	1.215	0.601	2.022	0.043	*
FirstTimeEmploymentYes	-0.894	0.141	-6.346	0.000	***
Hend.RVIYes	-1.226	0.586	-2.092	0.036	*

Table A. 2: VIF of the Model (Variation Inflation Factor)

Variable	GVI F	Df	GVIF $^{(1/(2 * Df))}$
CoBur	1.28	7	1.02
Occupation_corrected	14.33	8	1.18
RU	1.11	1	1.05
age.int	1.20	3	1.03

LoE	14.14	5	1.30
FirstTimeEmployment	1.08	1	1.04
Hend.RVI	1.01	1	1.00

Note: VIF was calculated using R package car. John Fox and Sanford Weisberg (2011). An {R} Companion to Applied Regression, Second Edition. Thousand Oaks CA: Sage. URL: <http://socserv.socsci.mcmaster.ca/jfox/Books/Companion>

Table A. 3: Summary of Balance all Data Versus Matched Data

	Summary of balance for all data (before matching)			Summary of balance for matched data (after matching)		
	Means Treated	Means Control	SMD	Means Treated	Means Control	SMD
distance	0.0526	0.0051	0.4978	0.0379	0.0379	0.0007
CoBurC10	0.0352	0.0487	-0.0731	0.0316	0.0431	-0.0623
CoBurCS	0.1382	0.3081	-0.4915	0.1351	0.1523	-0.0499
CoBurHNC	0.1030	0.1652	-0.2043	0.1063	0.1149	-0.0283
CoBurPC	0.1057	0.0371	0.2227	0.1063	0.1020	0.0140
CoBurTC	0.1572	0.1224	0.0954	0.1667	0.1408	0.0710
CoBurUSC	0.1572	0.2033	-0.1265	0.1609	0.1609	0.0000
CoBurZDC	0.1463	0.0803	0.1866	0.1494	0.1279	0.0609
CoBurZHC	0.1572	0.0349	0.3354	0.1437	0.1580	-0.0394
Occupation_corrected10	0.0217	0.025	-0.0288	0.0230	0.0187	0.0296
Occupation_corrected3	0.1816	0.1210	0.1570	0.1925	0.1796	0.0335
Occupation_corrected4	0.1762	0.0651	0.2912	0.1868	0.1853	0.0038
Occupation_corrected5	0.1220	0.0790	0.1311	0.1207	0.1121	0.0263
Occupation_corrected6	0.0027	0.0046	-0.0366	0.0000	0.0014	-0.0276
Occupation_corrected7	0.2358	0.2131	0.0533	0.2328	0.1983	0.0811
Occupation_corrected8	0.0515	0.0392	0.0555	0.0489	0.0560	-0.0325
Occupation_corrected9	0.2005	0.4469	-0.6143	0.1868	0.2428	-0.1398
RUUrban	0.6531	0.5764	0.1609	0.6408	0.6264	0.0301
age.int45-49	0.2981	0.2804	0.0386	0.2989	0.2615	0.0816
age.int50-54	0.2358	0.2511	-0.0361	0.2385	0.2414	-0.0068
age.int55-60	0.1653	0.1982	-0.0883	0.1638	0.1868	-0.0618
LoENKV	0.1653	0.4424	-0.7449	0.1753	0.2141	-0.1043
LoENSS	0.0136	0.0051	0.0734	0.0086	0.0129	-0.0372
LoEPKV	0.0352	0.0362	-0.0052	0.0374	0.0374	0.0000
LoESSS	0.5583	0.1990	0.7225	0.5374	0.5244	0.0260
LoEVKV	0.0081	0.0045	0.0407	0.0086	0.0057	0.0320
FirstTimeEmploymentYes	0.1897	0.3858	-0.4995	0.1925	0.1997	-0.0183
Hend.RVIYes	0.0081	0.0307	-0.2510	0.0086	0.0129	-0.0479

Table A. 4: Vocation of the Program participants

Elementary occupations	#of Program participants	%share in total
No occupation (Grammar school degree)	77	20%
Skilled agriculture, forestry and fishery worker	9	2%
Plant and machines operators and assemblers	1	0%
Experts and scientists	19	5%
Technicians and associate professionals	3	1%

Clerical support workers	75	19%
Service and sales workers	67	17%
Craft and related trade workers	46	12%
	89	23%

Note: Qualifications are grouped according the Law on Standardized Occupation Qualification, Official Gazette of FB&H 22-04, Decision Addendum 183

Table A. 5: List of available variables

Name of variable	Type of variable
1. Age	continues
2. Gender:	factor
3. Rural/Urban	factor
4. Level of education – qualifications	factor
5. Vacation	factor
6. Length of employment in months	continues
7. First time job seekers (Yes/No)	factor
8. Work experience in months prior the Program	continues
9. Demobilized conscripts (Yes/No)	binary
10. Families of fallen soldiers (Yes/No)	binary
11. Disabled war veterans (Yes/No)	binary
12. Other disabled person (Yes/No)	binary
13. Belongs to ethnic minority – Roma (Yes/No)	binary
14. Had he/she previously participated in a wage – subsidy program	binary
15. Had he/she previously participated in a training program	binary

Table A. 6: Occupation according to standard qualification of occupation

Code of occupation Type of occupation

1	Functionalists and members of legislative bodies
2	Experts and scientists
3	Technicians and associate professionals
4	Clerical support workers
5	Service and sales workers
6	Skilled agriculture, forestry and fishery worker
7	Craft and related trade workers
8	Plant and machines operators and assemblers
9	Elementary occupations
0	Military
00	Finished high school/grammar school*

Note: *Added by the evaluator

ANNEX B: Interview Protocol

Through the FEI, we intend to obtain telephone contacts from people who were directly involved in the implementation of Voucher 2014 in cantonal offices.

We will present ourselves over the telephone, and suggest a date, place and time to meet.

General (factual) questions that we will ask the FEI:

Q1 What documentation was required to apply to the program/measure "Job Voucher 2014" (hereinafter: the Program)?

Q2 How was the Call for the Program announced? (web, posters, newspaper, radio, TV ...)?

Q2 How many Calls for Proposal were there?

Q3 When was the Program announced, and how long was the Call open?

Table B.1.1: Voucher completed by canton (only for 60+) 1 for yes 0 for no			Table B.1.2: Unsubsidized employment 1 month after finishing voucher (only for 60+) 1 for yes 0 for no		
	0	1		0	1
HNC	2	36	HNC	5	33
CI0	0	12	CI0	0	12
CS	5	51	CS	10	46
PC	2	40	PC	10	32
TC	1	59	TC	13	47
USC	5	55	USC	12	48
ZDC	5	54	ZDC	11	48
WHC	0	59	WHC	5	54
Table B.1.3. Unsubsidized employment 6 months after Voucher 1 for yes 0 for no			Table B.1.4. Unsubsidized employment 13-18 months after Voucher 1 for yes 0 for no		

Q4 How many requests for participation were received?

Q5 If there were any rejections, what were the reasons?

Q6 How much money was spent on Vouchers, by canton?

Q7 Distribution of Vouchers after 2014 (refers only to completed Vouchers. What was the limit, and what was the implementation by canton)?

	0	1		0	1
HNC	5	33	HNC	12	26
C10	0	12	C10	4	8
CS	8	48	CS	22	34
PC	8	34	PC	24	18
TC	10	50	TC	28	32
USC	10	50	USC	30	30
ZDC	11	48	ZDC	24	35
WHC	5	54	WHC	34	25

Table B.1. Key preliminary treatment statistics (for interviewer)

Introduction

Thank you for taking the time to speak with me. I greatly appreciate the insight you are sharing today. As you may already know, PREMISA is conducting an impact evaluation of the Voucher 2014 Program. We want to assess how successful the Program was, and to give recommendations to the FEI in order to improve it.

Analysis of the treatment identified that there were differences between cantons in their implementation. For example, one canton had 13 beneficiaries and another had 60. We want to identify why these differences occurred, and whether anything could be done to improve the Program. We have also checked in employment of the beneficiaries after the end of Vouchers. In total (Table B.1) had kept their jobs one month after Vouchers ended.

We will also survey 50 beneficiaries and 50 companies. Additionally, we will interview officials in each cantonal office, because we believe that your perspective of the Program is valuable.

At any point during our conversation, please feel free to ask me questions, especially if a question I ask is unclear.

Q1 The Program was implemented for the first time in 2014. Please walk me through the process. What did you do first, and what were the next steps? **(FEI + canton)**

Q2 How active were you in this Program? Did the offices contact entrepreneurs and the unemployed to apply, or did you rely on the Public Call for Applications? If you can recall, were you occupied with other activities, or could you be committed to this program? Did you have other active programs, projects, or activities that occupied too much of your time?

Q3 Were you in direct contact with the beneficiaries? How would you describe your communication with the beneficiaries? Did they understand the terms of reference? How did they submit their applications? Were they alone, or accompanied by someone else (a member of the family)?

Q4 To what extent were contractual obligations respected during Program implementation? Were the activities conducted in a timely manner (application deadline)? If there were delays, what caused them?

Q5 Were you in direct contact with officials in municipal bureaus? What were their comments on the Program? Did they report any challenges, and if so how did they overcome them?

Q6 Reflecting on your experience to date, what have the high points of the Program been? Did you feel that you made a difference, that you helped people? Was this Program different to other Programs? Was it special in any way? Could you recall a specific situation, and describe it to me?

Q7 In your opinion, what were the main challenges of the Program? How were they overcome? Did you learn any lessons that you could apply to the following Vouchers?

Q8 What would you change about this Program? Do you have any suggestions, in terms of the process, target population, procedure, etc.? In your opinion, what could be improved?

Q9 How would you explain the difference between maximum coverage of 60 and the coverage implemented in your canton?

Q10 The spring of 2014 (the time of the first Call for Applications) in B&H is associated with the floods. In your opinion, did they have an influence on the Program's implementation?

Closing

Thank you for the interview. If you have any questions, please don't hesitate to ask.

If any questions arise while I am reviewing your answers, could I contact you?

ANNEX C: Surveys

I. Survey for natural entity

Evaluation form for the beneficiaries: NATURAL ENTITY “Co-financing the employment of hard-to-employ - Job Voucher 2014”
Date of survey: (D/M/Y)
Method of conducting the survey: By phone In person
Information on person that conducts the survey Name of company _____, Address _____, Phone _____ email _____
Information on the co-financed person Name and surname _____, Address _____, Phone _____ email _____
Information on the company Name of company _____, Address _____, Phone _____ email _____
Distance in km between residence of beneficiary and the company: _____
Demographic characteristics Age (current age): Gender: <input type="checkbox"/> M <input type="checkbox"/> F

Residence: Urban Rural

Marital status: Married Single Divorced Widow

What is your current net monthly income from all sources? _____KM

The highest level of education:

No education

Completed Elementary school

Completed Secondary school 3 year program

Completed Secondary school 4 year program

Length of unemployment in months prior program: _____

Did you complete the Program (all six months)?	YES	NO
---	-----	----

If no, what are the reasons?

a) Dismissed /due to different reasons

b) A job of limited duration / seasonal or temporary duration

c) Education or training

d) Own illness or disability

e) I was not satisfied with the job. Please specify

Other reasons. Please specify

Were you employed one month after completing the Program?	YES	NO
---	-----	----

4. If YES to the Question 3, were you employed with the same employer?	YES	NO
--	-----	----

5. Are you currently employed?	YES	NO
--------------------------------	-----	----

6. If YES to the Question 5, are you employed with the same employer from the Program?	YES	NO
--	-----	----

7. How did you get informed about the Program for co-financing employment and co-financing the acquisition of the first work experience - "Co-financing the employment of hard-to-employ - Job Voucher 2014"?

- a) Through the municipal Employment Bureau / Employment Advisor
- b) Through the web portal: www.fzzz.ba
- c) Through media
- d) Through personal contacts (family, friends, relatives ...)
- e) Other – please specify: _____

8. How did you get in touch with an employer with whom you got the opportunity to work with this program?

- a) With the mediation of the municipal employment office
- b) I looked up and found information about this company and applied
- c) Knowledge / contacts (family, friends, relatives ...)
- d) Other - please specify: _____

9. Do you think that with the support of this program you have acquired your skills / improved your knowledge?

YES NO

If your answer is NO, please explain:

10. Do you feel that you have more chances to find a (new) job than you had before you entered the Voucher 2014 program?

YES NO

If your answer is NO, please explain:

11. In order to evaluate benefits you received through the implementation of this program, how would you rate it using the following scale

Completely dissatisfied	Dissatisfied	Neither satisfied nor dissatisfied	Satisfied	Completely satisfied
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Please explain your score descriptively

12. What would you say, to what extent was this Program (the Voucher 2014) adequate for a person with your education and skills?

Completely inadequate	Somewhat inadequate	Neither inadequate nor adequate	Somewhat adequate	Completely adequate
-----------------------	---------------------	---------------------------------	-------------------	---------------------

13. Do you think that with the support of this Program (the Voucher 2014) you become more competitive/employable in the labor market?

Completely inadequate	Somewhat inadequate	Neither inadequate nor adequate	Somewhat adequate	Completely adequate
-----------------------	---------------------	---------------------------------	-------------------	---------------------

14. Do you think that your socio-economic status has been improved through the realization of this program?

YES	NO	PARTLY
-----	----	--------

15. . If you had an opportunity, would you have stayed in the company after the expiration of the co-financing contract?¹⁷

YES	NO
-----	----

If your answer is NO, please explain:

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¹⁷The issue concerns only those who have terminated the contract after the expiration of the co-financing agreement.

Place, date:	The signature of the co-financed person/or the person who conducted the survey if it is not in person

2. Survey for private entity

<p>Program for co-financing employment and co-financing the acquisition of the first work experience</p> <p>“Co-financing the employment of hard-to-employ - Job Voucher 2014”</p>
Date of survey: (D/M/Y)
<p>Method of conducting the survey:</p> <p>By phone</p> <p>In person</p>
<p>Information on the person that conducts the survey</p> <p>Name of company _____</p> <p>Address _____</p> <p>Phone _____</p> <p>email _____</p>
<p>Primary activity:</p> <p>a) Agriculture/forestry/fishery</p> <p>b) Industry (Construction excluded)</p> <p>c) Construction</p> <p>d) Services</p>
<p>Form of ownership</p> <p>a) Private company</p> <p>b) Government/State-owned</p> <p>c) Mixed</p> <p>d) Cooperative</p>
Total number of employees: _____

QUESTIONS

How were you informed of the Program for co-financing employment and co-financing the acquisition of first work experience – „Co-financing the employment of difficult-to-employ jobs - Job Voucher“?

- a) Through the municipal Employment Bureau / Employment Advisor
- b) Through the web portal: www.fzzz.ba
- c) Through media
- d) Through personal contacts (family, friends, relatives ...)
- e) Other – please specify: _____

How many persons did you co-finance through the Program for co-financing employment and co-financing the acquisition of first work experience –“**Co-financing the employment of hard-to-employ - Job Voucher 2014**”?

Questions	First name Last Name	First name Last Name	First name Last Name	First name Last Name	First name Last Name
3. How did you get in touch with the person who was co-financed with the support of the Program?	<p>a. It was not my initiative - I was contacted by/on behalf of that person (e.g. Employment Bureau, acquaintance/friend/relative)</p> <p>b. It was my initiative – I identified that person through my outreach activities, (e.g. adverts, personal contacts, Employment Bureau)</p> <p>c. Other - specify</p>	<p>a. It was not my initiative - I was contacted by/on behalf of that person (e.g. Employment Bureau, acquaintance/friend/relative)</p> <p>b. It was my initiative – I identified that person through my outreach activities, (e.g. adverts, personal contacts, Employment Bureau)</p> <p>c. Other - specify</p>	<p>a. It was not my initiative - I was contacted by/on behalf of that person (e.g. Employment Bureau, acquaintance/friend/relative)</p> <p>b. It was my initiative – I identified that person through my outreach activities, (e.g. adverts, personal contacts, Employment Bureau)</p> <p>c. Other - specify</p>	<p>a. It was not my initiative - I was contacted by/on behalf of that person (e.g. Employment Bureau, acquaintance/friend/relative)</p> <p>b. It was my initiative – I identified that person through my outreach activities, (e.g. adverts, personal contacts, Employment Bureau)</p> <p>c. Other - specify</p>	<p>a. It was not my initiative - I was contacted by/on behalf of that person (e.g. Employment Bureau, acquaintance/friend/relative)</p> <p>b. It was my initiative – I identified that person through my outreach activities, (e.g. adverts, personal contacts, Employment Bureau)</p> <p>c. Other - specify</p>
4. Are you satisfied with the choice and commitment of the person to whom you have enabled employment with the	<p>a) Completely dissatisfied</p> <p>b) Dissatisfied</p> <p>c) Neither satisfied nor dissatisfied</p> <p>d) Satisfied</p>	<p>a) Completely dissatisfied</p> <p>b) Dissatisfied</p> <p>c) Neither satisfied nor dissatisfied</p> <p>d) Satisfied</p>	<p>a) Completely dissatisfied</p> <p>b) Dissatisfied</p> <p>c) Neither satisfied nor dissatisfied</p> <p>d) Satisfied</p>	<p>a) Completely dissatisfied</p> <p>b) Dissatisfied</p> <p>c) Neither satisfied nor dissatisfied</p> <p>d) Satisfied</p>	<p>a) Completely dissatisfied</p> <p>b) Dissatisfied</p> <p>c) Neither satisfied nor dissatisfied</p> <p>d) Satisfied</p>

support of this program?	e) Completely satisfied	e) Completely satisfied	e) Completely satisfied	e) Completely satisfied	e) Completely satisfied
5. Has the person co-financed with the support of this Program remained in employment after the conclusion of the co-financing agreement?	a) YES b) NO	a) YES b) NO	a) YES b) NO	a) YES b) NO	a) YES b) NO
If NO, please explain:					

6. How would you rate the services provided by the Federal Employment Institute / the Cantonal Employment Service / Municipal Employment Office?

Completely dissatisfied Dissatisfied Neither satisfied nor dissatisfied Satisfied Completely satisfied

Please explain:

7. How would you rate **your satisfaction with scale 1 -5?**

- a) Method of application and procedure for granting the application (__)
- b) Contractual obligations and established procedures (__)
- c) Efficiency and Effectiveness in Realization (__)
- d) Intermediation in hiring the necessary employee profile (__)

8. If you had the opportunity, would you again participate in the realization of the same or similar co-financing program?

YES NO

If your answer is NO, please explain:

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COMENTS, SUGESTIONS & RECOMANDATIONS FOR THE PROGRAM

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Place, date:	Signature of director

Table C. 1: Comparison between surveyed participants and total population

	# of surveyed participants (N=35*)	%Share surveyed	#of whole sample (N=386)	%Share total sample
Gender				
<i>Male</i>	11	31%	191	49%
<i>Female</i>	24	69%	195	51%
Residence				
<i>Urban</i>	22	62%	254	66%
<i>Rural</i>	13	38%	132	34%
Level of education				
Elementary	6	17%	81	20%
Secondary 3 years	13	37%	87	24%
Secondary 4 years	16	46%	218	56%
Start working after program				
Yes	27	77%	328	85%
No	8	23%	58	15%
Age				
Mean age*	54		48.6	
Length of unemployment				
Mean LoU in months	79.5		60	

Note: *Mean age is for surveyed participants that participants reported in the time when survey is conducted. In general, they are supposed to be older since four years passed after first contract was signed and time when survey was conducted.

Table C. 2: Primary activities of surveyed companies compared with the whole sample

	% of surveyed companies (N=32*)	Share surveyed	#of whole sample (N=386)	Share total sample
<i>Agriculture</i>	1	3%	11	3%
<i>Construction</i>	3	9%	54	14%
<i>Industry</i>	4	13%	81	21%
<i>Services</i>	24	75%	240	62%

*17 didn't answer the survey: 12 change of the contact, 2 companies didn't exist, 2 case where no one in the company could answer the survey, 1 refused to answer

ANNEX D: Documentation Review

Table D. I: Comparative View of Voucher Program, Target Group

	First Job Voucher	Second Job Voucher	Third Job Voucher
Target group	Unemployed persons over 40 years of age, registered for at least 24 months at the employment bureau	<ol style="list-style-type: none"> 1. Regardless of age, registered for at least 60 months at the employment bureau before the employer submitted the Public Call for the Program 2. Unemployed persons over 40 years of age, registered for at least 24 months at the employment bureau before the employer submitted the Public Call for the Program 	<ol style="list-style-type: none"> 1. Unemployed persons over 40 years of age, registered for at least six months at the employment bureau before the employer submitted the Public Call for the Program 2. Women between 30 and 40 years of age, registered for at least six months at the employment bureau before the employer submitted the Public Call for the Program 3. Long-term unemployed persons from 30 to 40 years of age, registered for at least 12 months at the employment bureau before the employer submitted the Public Call for the Program
Employers	First Voucher 2014	Second Voucher	Third Voucher
General conditions for participation in the measure	The beneficiaries of the Program are employers registered in FB&H, who regularly pay income taxes and contributions, and have signed an agreement with the Federal Tax Administration on the settlement of liabilities from contributions, as well as those covered by the Consolidated Financial Law	The beneficiaries of the Program are employers registered in FB&H, who regularly pay income taxes and contributions, and have signed an agreement with the Federal Tax Administration on deferred payment of debt based on public revenues, as well as those covered by the Consolidated Financial Law	The beneficiaries of the Program are employers registered in FB&H, who regularly pay income taxes and contributions, and have signed an agreement with the Federal Tax Administration on deferred payment of debt based on public revenues, as well as those covered by the Consolidated Financial Law

Number of employees the employer can hire by this measure	<p>The employer may be eligible to hire co-financed persons registered as unemployed, in a number not exceeding the total number of persons employed at the time of the public Call for the Program</p>		<p>The employer may be eligible for co-financing for a maximum of 30 unemployed persons per canton</p>
Limiting conditions for employers who participate in this measure	<p>The employer is not eligible to hire co-financed persons who were fired in the three (3) months before the public Call for the Program</p>	<p>The Program will not co-finance employment in state administration positions at any level of government in the Federation of Bosnia and Herzegovina</p> <p>The employer will not co-finance, nor use FEI or CES subsidies, to fund the recruitment of persons who were fired from a previous position in the 12 or 24 months before the Public Call for Applications</p>	<p>The employer will not co-finance, nor use FEI or CES subsidies, to fund the recruitment of persons who were fired from a previous position in the 12 months before the Public Call for Applications <i>(exception: public work)</i></p> <p>The employer will not co-finance, nor use FEI or CES subsidies, to fund the recruitment of persons who were fired from a previous position in the 24 months before the Public Call for Applications <i>(exception: public work)</i></p> <p>For the public works measure, beneficiaries are employers registered in FB&H, namely: public companies, local self-government units, federal, cantonal and municipal institutions/institutions operating in the field of social protection, education, culture, communal economy, ecology and tourism, and non-governmental organizations that cooperate with the mentioned institutions, or work on programs/projects supported by other donors</p>

<p>Those who are not eligible to participate in the measure</p>	<p>Employers who have used credit or non-refundable funds from an FEI or CES subsidy programs and did not comply with the contractual obligations, or did not employ the foreseen number of employees and did not return the funds regularly received</p> <p>Employers who do not comply with their employment tax and contribution obligations</p> <p>Employers who were registered as part of the black market economy in 2013</p>	<p>Employers who have used credit or non-refundable funds from an FEI or CES subsidy program, and did not comply with the contractual obligations, or did not employ the foreseen number of employees and did not return the funds regularly received</p> <p>Employers who <i>do not comply</i> with their <i>employment tax</i> and contribution obligations</p> <p>Employers who had received penalty charges for unpaid fines and costs associated with the offense of not having a labor contract(part of the black market economy</p>	<p>Employers who have used credit or non-refundable funds from an FEI or CES subsidy program, and did not comply with the contractual obligations, or did not employ the foreseen number of employees and did not return the funds regularly received</p> <p>Employers who do not comply with their employment tax and contribution obligations, and have not signed a Debt Settlement Arrangement agreement with the Federal Tax Administration</p> <p>Employers who had received penalty charges for unpaid fines and costs associated with the offense of not having a labor contract (part of the black market economy)</p>
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ANNEX E: Effect Size Models

Table E. 1: Total Effect

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9	Model 10	Model 11	Model 12
(Intercept)	0.08 *** (0.01)	0.08 *** (0.01)	0.07 *** (0.01)	0.07 *** (0.01)	0.08 *** (0.01)	0.08 *** (0.02)	0.09 *** (0.02)	0.10 *** (0.02)	0.10 *** (0.02)	0.10 *** (0.02)	0.10 *** (0.02)	0.10 *** (0.02)
Treated	0.77 *** (0.02)	0.77 *** (0.02)	0.58 *** (0.02)	0.52 *** (0.02)	0.51 *** (0.02)	0.49 *** (0.03)	0.47 *** (0.03)	0.44 *** (0.03)	0.45 *** (0.03)	0.44 *** (0.03)	0.42 *** (0.03)	0.42 *** (0.03)
R ²	0.59	0.60	0.38	0.32	0.31	0.29	0.27	0.23	0.24	0.23	0.22	0.22
Adj. R ²	0.59	0.60	0.38	0.32	0.31	0.29	0.27	0.23	0.24	0.23	0.22	0.22
Num. obs.	948	941	938	939	937	934	933	932	915	910	906	901
RMSE	0.30	0.30	0.35	0.36	0.36	0.37	0.37	0.38	0.38	0.38	0.38	0.38

Note: each model corresponds the month that is observed

Table E. 2: Gender Effect

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9	Model 10	Model 11	Model 12
(Intercept)	0.07 *** (0.01)	0.07 *** (0.01)	0.05 ** (0.02)	0.06 ** (0.02)	0.06 ** (0.02)	0.06 *** (0.02)	0.08 *** (0.02)	0.09 *** (0.02)	0.09 *** (0.02)	0.09 *** (0.02)	0.09 *** (0.02)	0.09 *** (0.02)
Treated	0.77 *** (0.02)	0.77 *** (0.02)	0.58 *** (0.02)	0.52 *** (0.02)	0.51 *** (0.02)	0.49 *** (0.03)	0.47 *** (0.03)	0.43 *** (0.03)	0.44 *** (0.03)	0.44 *** (0.03)	0.42 *** (0.03)	0.41 *** (0.03)
SexM	0.02 (0.02)	0.02 (0.02)	0.05 * (0.02)	0.04 (0.02)	0.04 (0.02)	0.04 (0.02)	0.02 (0.02)	0.02 (0.03)	0.02 (0.03)	0.02 (0.03)	0.02 (0.03)	0.03 (0.03)
R ²	0.59	0.60	0.38	0.33	0.32	0.29	0.27	0.23	0.24	0.23	0.22	0.21
Adj. R ²	0.59	0.60	0.38	0.32	0.32	0.29	0.27	0.23	0.24	0.23	0.22	0.21
Num. obs.	948	941	938	939	937	934	933	932	915	910	906	904
RMSE	0.30	0.30	0.35	0.36	0.36	0.37	0.37	0.38	0.38	0.38	0.38	0.38

*** p < 0.001, ** p < 0.01, * p < 0.05

Table E. 3: Mean Employment Rates for the Treatment and Comparison Group

	Month1	Month2	Month3	Month4	Month5	Month6	Month7	Month8	Month9	Month10	Month11	Month12
Treated	0.851	0.852	0.653	0.595	0.589	0.574	0.555	0.552	0.545	0.540	0.526	0.510
Comparison	0.082	0.078	0.074	0.074	0.076	0.081	0.086	0.096	0.098	0.101	0.101	0.100

