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Working Paper

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IFN Working Paper, No. 1369

Provided in Cooperation with:
Research Institute of Industrial Economics (IFN), Stockholm

Suggested Citation: Aldén, Lina; Bastani, Spencer; Hammarstedt, Mats (2020) : Ethnic Background and the Value of Self-Employment Experience: Evidence from a Randomized Field Experiment, IFN Working Paper, No. 1369, Research Institute of Industrial Economics (IFN), Stockholm

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IFN Working Paper No. 1369, 2020

Ethnic Background and the Value of Self-Employment Experience: Evidence from a Randomized Field Experiment

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Ethnic background and the value of self-employment experience: Evidence from a randomized field experiment*

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November 18, 2020

Abstract:

In this paper, we use a randomized field experiment in Sweden to investigate how self-employment experience is valued in the labor market. We find that self-employment experience negatively impacts the probability of receiving a positive response from employers. For male applicants, this holds regardless of their ethnic background, and independently of whether we consider applicants with experience solely from self-employment, or applicants with a mix of experience from wage-employment and self-employment. For female applicants, the results are less clear-cut. Our findings provide input into the discussion about the impact of self-employment on the chances for natives and immigrants to obtain wage-employment.

Keywords: Self-employment, wage-employment, randomized experiment, discrimination, labor market outcomes.

JEL codes: J15, J24, J71, L26

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* We are grateful to Towe Nilsson for outstanding research assistance. Financial support from the Kamprad Foundation is gratefully acknowledged. Mats Hammarstedt acknowledge a research grant from Marianne and Marcus Wallenberg Foundation.

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1. Introduction

Studies from several countries have documented ethnic differences in self-employment rates, and much attention in research has been devoted to increasing the understanding of why different groups of immigrants and natives have different incentives to become self-employed (see e.g. Borjas 1986; Yuengert 1995; Fairle and Meyer 1996; Fairlie 1999; Clark and Drinkwater 2000; Hout and Rosen 2000; Fairlie and Robb 2007; Robb and Fairlie 2009). Since certain groups of immigrants have difficulties in entering the labor market in many OECD countries, self-employment has been put forward as a way for immigrants to improve their economic situation in the regular labor market; by entering self-employment, individuals can escape poverty, avoid unemployment and discrimination, and gain relevant human capital.

It is well known that individuals who opt for self-employment typically leave self-employment after a number of years (see e.g. Blanchflower and Oswald 1998; Taylor 1999). This raises the question about their employability when they decide to re-enter the regular labor market, i.e. how do employers reward a spell of self-employment?

While the value of self-employment experience in relation to an extended period of unemployment when applying for a job, most likely is positive, the value of self-employment experience in relation to wage-employment experience is theoretically ambiguous. The impact on future earnings and employment prospects depends on how a period of self-employment affects the productivity in wage employment. Self-employment and wage employment may also provide different signals of innate abilities to employers. Thus, how a spell of self-employment is rewarded by employers is an empirical question.

A number of studies have used survey data or administrative data to analyze the impact of self-employment experience on subsequent wage earnings and employment prospects. Some of these studies indicate that, compared to continued wage-employment, a period of self-employment has no impact on subsequent earnings in wage-employment (Evans and Leighton 1989; Ferber and Waldfogel 1998). Other studies find that self-employment experience is negatively rewarded by employers both in terms of earnings and employment prospects, especially for women (Williams 2000; Bruce and Schuetze 2004; Hyytinen and Rouvinen 2008; Kaiser and Malchow-Möller 2011; Andersson 2011; Baptista et al 2012).

In this paper, we add knowledge to the research area regarding self-employment and its labor market consequences by conducting a field experiment where we let fictitious job applicants

with different ethnic background, gender, as well as with different length of self-employment experience, apply for job openings in the Swedish labor market. The focus is to provide causal evidence on how applicants with different lengths of self-employment experience are valued by employers in comparison to applicants with consecutive wage-employment experience, and how the perceived value of self-employment experience differs depending on the ethnic background and gender of the applicant. Our experimental design is a so-called correspondence test, where we submitted a large number of job applications to different employers with random assignment. The outcome measure is either a positive response from the employer, reflecting a request for more information, or callbacks, e.g., an invitation to a job interview.

To date, there is only one study that has used correspondence testing to study how self-employment experience is rewarded in the labor market. Koellinger et al. (2015) emailed pairs of fictitious resumes to job advertisements in the field of human resource management in the UK in 2011–2012. The authors found that self-employment experience is negatively rewarded in the labor market due to a lower probability of receiving a positive response from employers. Although the study provided the first causal evidence on this important question, it did not cover all aspects that may be of importance for the outcome of the job application, for example, the length of the self-employment spell, and the ethnic background of the job applicant. Moreover, it is important to examine whether the results from previous research extend to other labor market settings.

Our findings can be summarized as follows. We find that self-employment experience, in comparison to wage-employment experience, is negatively rewarded in the labor market and that this holds true also when self-employment experience is combined with past experience from wage-employment. In the case of male applications, these findings hold independently of ethnic background, whereas for female applications, the results are less clear cut. Finally, in line with a number of previous field experiments in the US as well as in several European countries (see e.g., Bertrand & Mullainathan, 2004; Carlsson & Rooth, 2007), we find that people with foreign names receive fewer responses in general when applying for job openings.

The paper is organized as follows. Section 2 provides a detailed description of the field experiment that we conducted. Section 3 presents the results, containing both an analysis of the raw data, as well as an analysis of several regression models. Finally, section 4 offers a concluding discussion.

2. The field experiment

The data used in the study was collected by conducting a correspondence test experiment with random assignment on the Swedish labor market from September 25 2019 to March 1 2020.[1] During this period, we applied for a total of 1 302 vacancies in selected occupations posted on the website of the Swedish Public Employment Agency.[2] We applied for all jobs, located all over Sweden, where it was possible to apply by e-mail. Applying by e-mail is possible for most private employers. In the public sector, many employers have a web-based recruitment system that requires job applicants to state their social security number. As a result, we mainly applied for private-sector jobs.[3]

To get a representative picture of how employers value self-employment experience relative to wage-employment, we needed occupations where it is possible to be both wage-employed and self-employed. To ensure the statistical power of the study we also required that the occupations had a relatively large number of vacancies posted the website of the Swedish Public Employment Agency. We chose the following two occupations that fulfilled these criteria: accountant and software developer.

We constructed the job applications to appear realistic for a typical job seeker for the advertised position. In order to control for the applicant's job history, we designed applications for relatively young workers who search for a job six years after graduating from the university. In addition, all applicants were born and raised in Sweden, and studied at Stockholm University. The education was chosen to match the occupation. The applicants also obtained their work experience in Stockholm, and were currently residing in Stockholm when applying for the job.

The application consisted of a cover letter and a detailed CV. In the cover letter, the applicant stated and motivated their interest for the position. The cover letter also included some general information about age, marital status, personality, and personal interests (the structure of the letter and the CV is outlined in Appendix B). All applicants were of the same age, and the age

[1] Due to the outbreak of the Covid-19 pandemic, we chose to stop the experiment on March 1 to avoid that the demand and supply shocks induced by the pandemic would affect our results. For applications sent out on March 1, we recorded call-backs from employers up until March 15.
[2] Estimates suggest that 30–40 percent of the all vacancies in Sweden are reported to the Employment Agency (Carlsson and Eriksson 2019).
[3] Slightly below 90 percent of the vacancies we applied for were private-sector jobs.

(29 years old) was chosen to match the educational attainment and work history. The applicants were cohabiting and had no children.

To each application, we randomly assigned a number of attributes: work history, ethnic background, and gender. More specifically, we randomly assigned three different work histories to the applications: 1) only self-employment experience (six years), 2) only wage-employment experience (six years), and 3) experience from self-employment and wage-employment (three plus three years). Our benchmark is the application with a consecutive period of wage-employment, which will be compared to applications with either a consecutive period of self-employment, or a spell of wage-employment followed by a spell of self-employment. Thus, for the applicants with self-employment experience, the most recent work experience is from self-employment. The length of the self-employment spell was chosen to provide both a realistic and strong signal of self-employment experience. The type of work history was stated both in the cover letter and in the CV. For wage-employed applicants, we stated the previous employer, using names of actual workplaces in Sweden with a large number of employees. We only sent out one application to each job, thereby avoiding the unnatural situation where a single employer receives two identical job applications that only differ in terms of the randomized attributes.

In order to signal ethnic background, applicants were assigned either a Swedish name or an Arabic/Middle Eastern name. The motivation is that high rates of unemployment in Sweden have been documented for immigrants from countries in the Middle-East and Africa (see e.g. Aldén and Hammarstedt, 2019). In addition, Middle Eastern immigrants are overrepresented in self-employment, and for this group in particular, self-employment is often put forward as a stepping stone to regular employment and integration on the labor market (see e.g., Hammarstedt, 2001; Andersson and Hammarstedt, 2015). We chose the following male and female names: 1) Erik Johansson and Mohamed Hussein and 2) Anna Johansson and Amina Hussein. The name choices were guided by that they should be distinctly Swedish or Arabic/Middle Eastern names and distinctly male and female names. We chose common names to avoid that actual individuals could be mistaken for the applicants.

We measured responses from employers in the form of call-backs. We recorded if the applicant received any reply, if the applicant was asked to provide more information, if the applicant was invited for an interview, or if the applicant was offered a job. To minimize the inconvenience to the employers, we promptly and politely declined positive responses, i.e. invitations to

provide more information, to an interview or a job offer. We also recorded job characteristics, such as if the job was full-time job or not and if the employer offered a permanent contract.

Several remarks are in order. First, since all fictitious applicants were stated to be born and raised in Sweden, the applicants with Arabic/Middle Eastern names should be referred to as second-generation immigrants, i.e. they are born in Sweden and raised by foreign-born parents.[4] This is an important feature of our research design, as it allows us to consider applicants that are similar in terms of their background characteristics, such as age, education and work experience. Moreover, it allows us to focus on the role of ethnic background, while removing uncertainty regarding language skills and the quality of qualifications, aspects that are difficult to vary in a convincing way in a correspondence test experiment.[5]

Second, the fact that we chose relatively high-skilled occupations is also important for our research design, since in relatively high-skilled occupations, formal qualifications (e.g., having an appropriate education) tend to be more important than informal ones (such as writing a convincing cover letter), and it is primarily formal qualifications that can be conveyed in a controlled manner in a correspondence test experiment.

Finally, it should be noted that we compare the value of a period of self-employment experience to a period of wage-employment experience. For individuals who chose to become self-employed in order to escape unemployment, the relevant comparison state would not be wage-employment, but rather unemployment. Since self-employment experience is likely to be positively perceived relative to unemployment, whereas the value of self-employment relative to wage-employment is theoretically ambiguous, we have chosen to compare self-employment experience with wage-employment experience in our paper. The relevance of our approach is further supported by the fact that those who move from unemployment to self-employment, typically leave self-employment after a few years to seek wage-employment. Thus, for many individuals, self-employment is only a short-term solution to the unemployment problem.

[4] Studies of self-employment among second-generation immigrants in Sweden have been conducted by Andersson and Hammarstedt (2010, 2011).

[5] The call-back rates we document for second-generation immigrants in our study are therefore likely larger than the rates that would materialize had we focused on first-generation immigrants with education or work experience obtained outside Sweden.

3. Results

3.1 An analysis of the raw data

Table 1 presents summary statistics of our experimental data. The table is divided into two panels, where panel A describes the outcomes of the male applications, and panel B describes the outcomes of the female applications. Each panel is then divided into three categories, depending on the type of labor market experience: only self-employment experience, some self-employment experience (together with some wage-employment experience), and wage-employment experience (referring to applicants with only wage-employment experience). The results are further separated based upon if the applicant had a native or immigrant name (operationalized in our experiment by either a common Swedish name or a common Arabic/Middle Eastern name). Taken together, these permutations allow us to investigate not only how employers value individuals with partial or full self-employment experience, but also how the effect of self-employment experience differs depending on the gender and ethnicity of the applicant.

The between-applicant comparisons, presented in columns (7) to (9), allow us to assess whether there are differences in response rates by ethnic background. Among males, applicants with a foreign name are less likely to receive a reply to their job application, and this holds true independently of applicants' type of labor market experience. The results are strongest for male applicants with self-employment experience, where 52.5 percent of immigrants received no reply, whereas the corresponding share for natives was 25.9 percent. Regarding the likelihood of being called to interview, which is a strong signal of employer interest, we find that there is, in similarity to the probability of being asked for more information, large ethnic differences among male applicants. Male applicants with immigrant names are much less likely to be called to an interview in comparison to native males, independently of their type of labor market experience. For immigrant men with only self-employment experience, the likelihood of being called to an interview is less than 6 percent, whereas the corresponding number for native men is 12 percent. For immigrant men with only wage-employment experience, the probability of being called to an interview is a bit less than 11 percent, whereas the corresponding share for native men is 24 percent.

Among women the pattern is slightly different. Similar to men, wage-employed native women generally receive more responses than wage-employed immigrant women. However, the

differences between self-employed applicants are considerably smaller, and there are no statistically significant differences. For example, among native applicants, 36.9 percent was asked for more information, while the corresponding share among foreign applicants is 21.3 percent. We see a similar pattern among female applicants with some self-employment experience. However, among female applicants with only self-employment experience, the ethnic differences in call-back rates are considerably smaller, and not statistically significant.

Columns (10) to (15) present within-applicant comparisons, that allow us to assess the extent to call-back rates vary by type of labour market experience. For men with foreign names, Table 1 shows that the likelihood of receiving a call back is strictly and strongly decreasing in the extent of self-employment experience. This is not only true for the probability of receiving no reply, but is also evident for the likelihood of being asked for more information. Only 12.7 percent of immigrants with experience purely from self-employment activities were asked to provide more information, whereas 23.6 percent of wage-employed immigrants were asked for more information. We see a similar pattern for native men, but the differences are not as pronounced. This indicates that there might be a substantial number of firms that completely discard applicants from immigrant men with self-employment experience at an early stage of the recruitment process.[6]

The pattern that comes out for women is again slightly different than that for men. Interestingly, among immigrant women, the differences between applicants with only self-employment experience, and applicants with consecutive wage-employment, are very small and not statistically significant. In contrast, among native women, applicants with experience from wage-employment are more likely to receive no reply and less likely to be asked for additional information.

It is interesting to note that for almost all groups, self-employment experience tends to be negatively associated with the likelihood of being called to an interview, and being only self-employed is always worse than having a mix of self-employment experience and wage-employment experience. The only exception is immigrant women where self-employment

[6] An important issue is of course the a priori beliefs employers might have about the ethnic and gender composition of different applicant categories. Since self-employment is much more common among immigrant men than among immigrant women, observing an immigrant woman with self-employment experience might represent a positive signal for the employer, or at least something that might trigger the firm to ask for more information.

experience only appears to be equally valued by employers as consecutive wage-employment.

Notice that the fact that the likelihood of being called to an interview appears to be sharply decreasing in self-employment experience for most groups, but the likelihood of being asked for more information does not display this pattern, could be evidence that firms are hesitant to call previously self-employed individuals directly to an interview, but instead prefer to gather some more information about their self-employment experiences before calling them to a formal interview.

Table 1: Summary statistics by gender, type of labor market experience, and ethnicity

	Type of labor market experience						Test of statistical significance								
	Only S.E.		Some S.E.		Wage employment		Between applicant name			Within immigrant applicants			Within native applicants		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	Immigrant	Native	Immigrant	Native	Immigrant	Native	(1)=(2)	(3)=(4)	(5)=(6)	(1)=(5)	(3)=(5)	(1)=(3)	(2)=(6)	(4)=(6)	(2)=(4)
Panel A: Males															
No reply	0.525	0.259	0.484	0.343	0.407	0.310	0.000***	0.032**	0.123	0.065*	0.226	0.519	0.408	0.604	0.185
	(62)	(28)	(59)	(36)	(50)	(35)									
Neg. reply	0.288	0.333	0.270	0.238	0.252	0.204	0.465	0.579	0.378	0.530	0.744	0.762	0.029**	0.541	0.125
	(34)	(36)	(33)	(25)	(31)	(23)									
More info	0.127	0.287	0.213	0.248	0.236	0.248	0.003***	0.539	0.803	0.029**	0.672	0.077*	0.512	0.998	0.518
	(15)	(31)	(26)	(26)	(29)	(28)									
Interview	0.0593	0.120	0.0328	0.171	0.106	0.239	0.107	0.004***	0.006***	0.194	0.025**	0.328	0.022**	0.220	0.293
	(7)	(13)	(4)	(18)	(13)	(27)									
Observations	118	108	122	105	123	113									
Panel B: Females															
No reply	0.392	0.339	0.350	0.272	0.377	0.216	0.426	0.212	0.024**	0.855	0.717	0.522	0.039**	0.345	0.283
	(38)	(40)	(43)	(28)	(23)	(24)									
Neg. reply	0.258	0.263	0.309	0.223	0.262	0.207	0.934	0.150	0.412	0.950	0.516	0.407	0.325	0.776	0.499
	(25)	(31)	(38)	(23)	(16)	(23)									
More info	0.237	0.263	0.195	0.359	0.213	0.369	0.669	0.010***	0.035**	0.728	0.776	0.453	0.083*	0.878	0.122
	(23)	(31)	(24)	(37)	(13)	(41)									
Interview	0.113	0.136	0.146	0.146	0.148	0.207	0.627	0.988	0.339	0.533	0.982	0.476	0.151	0.241	0.831
	(11)	(16)	(18)	(15)	(9)	(23)									
Observations	97	118	123	103	61	111									

Note: The test of statistical significance of differences in response rates is based on a chi-squared test. The p-value of the double-sided test is reported in columns (7) to (15). Number of observations in parentheses. ***, **, * denote statistical significance at the 1, 5, and 10 percent level, respectively.

3.2 Regression analysis

We now proceed to use a set of linear probability models to analyze differences in call-back rates between the different types of applicants, offering a slightly different perspective on our results. Notice that since we conducted a randomized field experiment, regression analysis should not be needed. However, it may be seen as a robustness check of the random assignment procedure – the differences in call-back rates should not change substantially once control variables are added – and the inclusion of control variables may also increase efficiency.

We focus on two outcomes: 1) the probability of getting a positive response and 2) the probability of being invited to an interview. We define a response as positive if the applicant has been asked to submit more information about him-/herself, or has been invited to an interview. Hence, a positive response represents the sum of the "More info" and "Interview" category in Table 1.

Table 2 presents the results for the probability of getting a positive response where, as before, the top panel refers to male applicants and the bottom panel refers to female applicants.[7] In columns (2) and (4), we focus on the role of self-employment experience and ethnicity. The results confirm the previous findings in Table 1, that applicants with only or some self-employment experience are less likely to receive a positive response from employers than individuals with only experience from wage-employment (who represent the baseline group). This holds true for both men and women, although the effects are more pronounced among men. Focusing on the specifications with controls in column 4, we see that males with only self-employment experience are 14.3 percent less likely, and males with mixed experience 8.6 percentage less likely, to receive a positive response relative to applicants with only wage employment. For women, the corresponding numbers are 11.7 and 7.4 percent. The table also reveals that applicants with an immigrant name are in general much less likely to receive a positive response. Immigrant men are 17.5 percentage points less likely to receive a positive reply in relation to their native counterparts, whereas the corresponding figure for women is 11.1 percent.

[7] An extended regression table that includes the effects of the included covariates is presented in the Appendix, Table A1.

In columns (3) and (5), we analyze whether the impact of self-employment experience on the probability of receiving a positive response is different for natives and immigrants. The estimates suggest that the negative effects of self-employment experience are larger for immigrant men, and much smaller for immigrant women. However, only the interaction effect for women is statistically significant.

Table 2: Linear probability estimates of the probability of getting a positive response, by gender

VARIABLES	(1) Positive response	(2) Positive response	(3) Positive response	(4) Positive response	(5) Positive response
Panel A: Males					
Only S.E.	-0.119***	-0.138***	-0.091	-0.143***	-0.095
	(0.043)	(0.044)	(0.068)	(0.043)	(0.066)
Some S.E.	-0.082*	-0.078*	-0.049	-0.086*	-0.057
	(0.044)	(0.045)	(0.069)	(0.044)	(0.067)
Immigrant	-0.179***	-0.180***	-0.132**	-0.175***	-0.127**
	(0.036)	(0.036)	(0.064)	(0.035)	(0.063)
Immigrant x Only S.E.			-0.088		-0.092
			(0.088)		(0.086)
Immigrant x Some S.E.			-0.057		-0.056
			(0.090)		(0.088)
Observations	689	689	689	689	689
R-squared	0.047	0.101	0.102	0.154	0.155
Panel B: Females					
Only S.E.	-0.110**	-0.117**	-0.200***	-0.117**	-0.194***
	(0.050)	(0.051)	(0.067)	(0.049)	(0.065)
Some S.E.	-0.058	-0.066	-0.085	-0.074	-0.089
	(0.050)	(0.051)	(0.071)	(0.050)	(0.069)
Immigrant	-0.136***	-0.119***	-0.220***	-0.111***	-0.203**
	(0.040)	(0.041)	(0.078)	(0.039)	(0.079)
Immigrant x Only S.E.			0.207**		0.192*
			(0.103)		(0.101)
Immigrant x Some S.E.			0.068		0.058
			(0.102)		(0.102)
Observations	613	613	613	613	613
R-squared	0.028	0.091	0.098	0.168	0.174
Month fixed effects	No	Yes	Yes	Yes	Yes
Area fixed effects	No	Yes	Yes	Yes	Yes
Control variables	No	No	No	Yes	Yes

Note: We define a response as positive if the applicant has been asked to submit more information about him-/herself or been invited to an interview. The control variables include a female indicator and indicators for type of occupation, full-time position, permanent contract and living in a metropolitan area. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table 3 presents the results for the probability of being invited to an interview, which is a narrower, but sharper, measure of employer interest as compared to the positive response

measure used in Table 2.[8] The results show the same pattern as above. Applicants with only, or some, self-employment experience consistently have a lower probability of being called to an interview. Moreover, immigrants receive fewer interview invitations as compared to native applicants. These results hold for both men and women. The interaction effects between ethnicity and self-employment experience are less clear-cut. In line with Table 2, there is a tendency for self-employment experience to be more valuable for immigrant women. However, for men, the interaction effects go in opposite directions, depending on the duration of self-employment experience. In either case, the interactions are not statistically significant.

Table 3: Linear probability estimates of the probability of being invited to an interview, by gender

VARIABLES	(1) Interview	(2) Interview	(3) Interview	(4) Interview	(5) Interview
Panel A: Males					
Only S.E.	-0.081***	-0.085***	-0.127**	-0.089***	-0.129**
	(0.031)	(0.031)	(0.052)	(0.031)	(0.051)
Some S.E.	-0.071**	-0.056*	-0.042	-0.061*	-0.046
	(0.031)	(0.032)	(0.055)	(0.031)	(0.054)
Immigrant	-0.111***	-0.112***	-0.132***	-0.111***	-0.127***
	(0.025)	(0.025)	(0.049)	(0.025)	(0.049)
Immigrant x Only S.E.			0.081		0.077
			(0.062)		(0.062)
Immigrant x Some S.E.			-0.023		-0.028
			(0.063)		(0.063)
Observations	689	689	689	689	689
R-squared	0.042	0.100	0.104	0.117	0.122
Panel B: Females					
Only S.E.	-0.058	-0.069*	-0.102**	-0.067*	-0.099**
	(0.037)	(0.036)	(0.049)	(0.036)	(0.049)
Some S.E.	-0.036	-0.055	-0.100*	-0.057	-0.102*
	(0.038)	(0.037)	(0.052)	(0.037)	(0.052)
Immigrant	-0.023	-0.028	-0.102*	-0.027	-0.100*
	(0.029)	(0.029)	(0.056)	(0.028)	(0.056)
Immigrant x Only S.E.			0.090		0.087
			(0.073)		(0.073)
Immigrant x Some S.E.			0.107		0.108
			(0.075)		(0.076)
Observations	613	613	613	613	613
R-squared	0.006	0.105	0.109	0.113	0.116
Month fixed effects	No	Yes	Yes	Yes	Yes
Area fixed effects	No	Yes	Yes	Yes	Yes
Control variables	No	No	No	Yes	Yes

Note: The control variables include a female indicator and indicators for type of occupation, full-time position, permanent contract and living in a metropolitan area. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

[8] An extended regression table that includes the effects of the included covariates is presented in the Appendix, Table A2.

In the results above, we have treated non-responses as rejections. However, non-responses may not necessarily be rejections, as they could simply reflect inattention on behalf of the employer. As a robustness check, we have therefore estimated the regressions where we have excluded non-responses. The results are very similar to those presented in Tables 2 and 3 (see appendix tables A3 and A4).

4. Concluding discussion

We have conducted a field experiment with the purpose of providing causal evidence on how self-employment experience is rewarded in the labor market. In particular, we have studied how self-employment experience influences the likelihood of receiving a positive response from employers when applying for a job opening. We have also examined how employers' perceptions of self-employment experience differ depending on the ethnic background and gender of the applicant. Finally, we have examined the perceived value of having a combination of self-employment and wage-employment experience. In this way, we have contributed to the literature on entrepreneurship, the literature on immigrant integration, as well as to the labor economics literature that studies how different forms of human capital are rewarded in the labor market.

Our results show that self-employment experience is negatively perceived by employers. We thereby confirm the field-experimental results of Koellinger et al. (2015) and demonstrate that their results extend to other labor market settings. We have also introduced new perspectives by showing that self-employment experience is negatively perceived by employers, even when combined with experience from wage-employment. Moreover, we have shown that the negative effects of self-employment experience hold independently of the ethnic background of the applicant in the case of male applications, whereas for female applications, the results are less clear cut. Finally, we have found, in line with earlier studies, that people with foreign names receive fewer responses in general when applying for job openings (see e.g., Bertrand & Mullainathan, 2004; Carlsson & Rooth, 2007).

When conducting a field experiment, practical considerations (such as time and resource considerations) constrain the set of potential questions that can be explored. Our study therefore has limitations, but at the same time opens up for several interesting avenues for future research.

First, the applicants in our study had experience from self-employment and wage-employment pertaining to relatively high-skilled occupations. We therefore do not know how the applications would have been perceived by employers if either the self-employment experience or the wage-employment experience had been obtained in a low-skill occupation. Second, we have only compared self-employment with wage-employment, whereas for many individuals, the alternative to self-employment is unemployment. While a short period of unemployment is not likely to be too adversely perceived by employers (see e.g., Eriksson and Rooth 2014) a relevant question is whether an individual who is struggling in the labor market should continue to seek wage-employment, thereby risking to be unemployed during an extended period of time, or whether the individual should opt for self-employment, knowing (as our results show) that such experience will be negatively valued when returning to the regular labor market to seek wage-employment. From a theoretical point of view, it seems likely that an extended period of self-employment should be more highly valued than an extended period of unemployment. However, more research is needed to understand the trade-offs involved in the decision between engaging self-employment, and seeking wage-employment, with the purpose of escaping long-term unemployment.

Another, related aspect, is that we have focused on second-generation immigrants, and it is likely that value of self-employment experience would be different for first-generation immigrants. However, studying first-generation immigrants is difficult since it is not obvious how one can separate the effects of having a certain ethnic background from other factors, such as having obtained labor market experience and education in a different country. The fact that we observe that self-employment is negatively perceived by employers among second-generation immigrants, most likely implies that such experience also would be perceived negatively among first-generation immigrants (relative to a spell of wage-employment). Finally, our experiment was terminated prematurely due to the outbreak of the Covid-19 pandemic, implying that the number of observations is relatively small.

In spite of the limitations described above, we have obtained several interesting results that we hope can provide useful input into the discussion about how experience in self-employment influences the possibilities to obtain subsequent wage-employment.

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Appendix A

Table A1: Linear probability estimates of the probability of getting a positive response, by gender

VARIABLES	(1) Positive response	(2) Positive response	(3) Positive response	(4) Positive response	(5) Positive response
Panel A: Males					
Only S.E.	-0.119***	-0.138***	-0.091	-0.143***	-0.095
	(0.043)	(0.044)	(0.068)	(0.043)	(0.066)
Some S.E.	-0.082*	-0.078*	-0.049	-0.086*	-0.057
	(0.044)	(0.045)	(0.069)	(0.044)	(0.067)
Immigrant	-0.179***	-0.180***	-0.132**	-0.175***	-0.127**
	(0.036)	(0.036)	(0.064)	(0.035)	(0.063)
Accounting				-0.190***	-0.191***
				(0.037)	(0.037)
Full-time job				0.157***	0.156***
				(0.049)	(0.049)
Permanent contract				-0.010	-0.013
				(0.051)	(0.051)
Immigrant x Only S.E.			-0.088		-0.092
			(0.088)		(0.086)
Immigrant x Some S.E.			-0.057		-0.056
			(0.090)		(0.088)
Observations	689	689	689	689	689
R-squared	0.047	0.101	0.102	0.154	0.155
Panel B: Females					
Only S.E.	-0.110**	-0.117**	-0.200***	-0.117**	-0.194***
	(0.050)	(0.051)	(0.067)	(0.049)	(0.065)
Some S.E.	-0.058	-0.066	-0.085	-0.074	-0.089
	(0.050)	(0.051)	(0.071)	(0.050)	(0.069)
Immigrant	-0.136***	-0.119***	-0.220***	-0.111***	-0.203**
	(0.040)	(0.041)	(0.078)	(0.039)	(0.079)
Accounting				-0.237***	-0.238***
				(0.039)	(0.039)
Full-time job				-0.006	-0.008
				(0.072)	(0.073)
Permanent contract				0.172***	0.166***
				(0.055)	(0.055)
Immigrant x Only S.E.			0.207**		0.192*
			(0.103)		(0.101)
Immigrant x Some S.E.			0.068		0.058
			(0.102)		(0.102)
Observations	613	613	613	613	613
R-squared	0.028	0.091	0.098	0.168	0.174
SMonth fixed effects	No	Yes	Yes	Yes	Yes
Area fixed effects	No	Yes	Yes	Yes	Yes
Control variables	No	No	No	Yes	Yes

Note: We define a response as positive if the applicant has been asked to submit more information about him-/herself or been invited to an interview. The control variables include a female indicator and indicators for type of occupation, full-time position, permanent contract and living in a metropolitan area. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Table A2: Linear probability estimates of the probability of being invited to an interview, by gender

VARIABLES	(1) Interview	(2) Interview	(3) Interview	(4) Interview	(5) Interview
Panel A: Males					
Only S.E.	-0.081***	-0.085***	-0.127**	-0.089***	-0.127**
	(0.031)	(0.031)	(0.052)	(0.031)	(0.052)
Some S.E.	-0.071**	-0.056*	-0.042	-0.061*	-0.042
	(0.031)	(0.032)	(0.055)	(0.031)	(0.055)
Immigrant	-0.111***	-0.112***	-0.132***	-0.111***	-0.132***
	(0.025)	(0.025)	(0.049)	(0.025)	(0.049)
Accounting				-0.072***	
				(0.026)	
Full-time job				0.071**	
				(0.028)	
Permanent contract				-0.047	
				(0.037)	
Immigrant x Only S.E.			0.081		0.081
			(0.062)		(0.062)
Immigrant x Some S.E.			-0.023		-0.023
			(0.063)		(0.063)
Observations	689	689	689	689	689
R-squared	0.042	0.100	0.104	0.117	0.104
Panel B: Females					
Only S.E.	-0.058	-0.069*	-0.102**	-0.067*	-0.102**
	(0.037)	(0.036)	(0.049)	(0.036)	(0.049)
Some S.E.	-0.036	-0.055	-0.100*	-0.057	-0.100*
	(0.038)	(0.037)	(0.052)	(0.037)	(0.052)
Immigrant	-0.023	-0.028	-0.102*	-0.027	-0.102*
	(0.029)	(0.029)	(0.056)	(0.028)	(0.056)
Accounting				-0.046	
				(0.029)	
Full-time job				-0.029	
				(0.050)	
Permanent contract				0.057	
				(0.035)	
Immigrant x Only S.E.			0.090		0.090
			(0.073)		(0.073)
Immigrant x Some S.E.			0.107		0.107
			(0.075)		(0.075)
Observations	613	613	613	613	613
R-squared	0.006	0.105	0.109	0.113	0.109
Month fixed effects	No	Yes	Yes	Yes	Yes
Area fixed effects	No	Yes	Yes	Yes	Yes
Control variables	No	No	No	Yes	Yes

Note: The control variables include a female indicator and indicators for type of occupation, full-time position, permanent contract and living in a metropolitan area. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Table A3: Linear probability estimates of the probability of getting a positive response by gender, non-responses excluded

VARIABLES	(1) Positive response	(2) Positive response	(3) Positive response	(4) Positive response	(5) Positive response
Panel A: Males					
Only S.E.	-0.168***	-0.182***	-0.155**	-0.190***	-0.169**
	(0.058)	(0.058)	(0.077)	(0.055)	(0.074)
Some S.E.	-0.083	-0.064	-0.025	-0.080	-0.050
	(0.058)	(0.059)	(0.081)	(0.056)	(0.077)
Immigrant	-0.149***	-0.169***	-0.124	-0.167***	-0.134*
	(0.048)	(0.049)	(0.080)	(0.046)	(0.077)
Immigrant x Only S.E.			-0.058		-0.044
			(0.118)		(0.115)
Immigrant x Some S.E.			-0.083		-0.063
			(0.123)		(0.114)
Observations					
R-squared	419	419	419	419	419
	0.039	0.111	0.113	0.215	0.215
Panel B: Females					
Only S.E.	-0.082	-0.085	-0.149**	-0.082	-0.135*
	(0.060)	(0.060)	(0.075)	(0.057)	(0.071)
Some S.E.	-0.057	-0.067	-0.067	-0.052	-0.035
	(0.058)	(0.057)	(0.076)	(0.055)	(0.073)
Immigrant	-0.117**	-0.125**	-0.197**	-0.132***	-0.175*
	(0.049)	(0.049)	(0.090)	(0.045)	(0.094)
Immigrant x Only S.E.			0.171		0.139
			(0.124)		(0.121)
Immigrant x Some S.E.			0.030		-0.015
			(0.121)		(0.120)
	417	417	417	417	417
Observations	0.021	0.145	0.150	0.273	0.277
R-squared					
Month fixed effects	No	Yes	Yes	Yes	Yes
Area fixed effects	No	Yes	Yes	Yes	Yes
Control variables	No	No	No	Yes	Yes

Note: We define a response as positive if the applicant has been asked to submit more information about him-/herself or been invited to an interview. The control variables include a female indicator and indicators for type of occupation, full-time position, permanent contract and living in a metropolitan area. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Table A4: Linear probability estimate of the probability of being invited to an interview by gender, non-responses excluded

VARIABLES	(1) Positive response	(2) Positive response	(3) Positive response	(4) Positive response	(5) Positive response
Panel A: Males					
Only S.E.	-0.128***	-0.141***	-0.192***	-0.144***	-0.196***
	(0.047)	(0.049)	(0.068)	(0.048)	(0.068)
Some S.E.	-0.099**	-0.074	-0.050	-0.083*	-0.062
	(0.047)	(0.048)	(0.074)	(0.047)	(0.073)
Immigrant	-0.136***	-0.147***	-0.169**	-0.145***	-0.170**
	(0.038)	(0.038)	(0.070)	(0.038)	(0.069)
Immigrant x Only S.E.			0.118		0.122
			(0.094)		(0.093)
Immigrant x Some S.E.			-0.051		-0.046
			(0.095)		(0.093)
Observations	419	419	419	419	419
R-squared	0.047	0.152	0.159	0.178	0.185
Panel B: Females					
Self-employed	-0.058	-0.064	-0.090	-0.058	-0.084
	(0.052)	(0.049)	(0.063)	(0.049)	(0.064)
Some S.E.	-0.042	-0.069	-0.120*	-0.063	-0.111
	(0.052)	(0.050)	(0.067)	(0.051)	(0.068)
Immigrant	-0.004	-0.029	-0.112	-0.033	-0.115
	(0.041)	(0.041)	(0.077)	(0.040)	(0.078)
Immigrant x Only S.E.			0.088		0.087
			(0.104)		(0.103)
Immigrant x Some S.E.			0.132		0.129
			(0.106)		(0.107)
Observations	417	417	417	417	417
R-squared	0.003	0.151	0.155	0.162	0.165
Month fixed effects	No	Yes	Yes	Yes	Yes
Area fixed effects	No	Yes	Yes	Yes	Yes
Control variables	No	No	No	Yes	Yes

Note: We define a response as positive if the applicant has been asked to submit more information about him-/herself or been invited to an interview. The control variables include a female indicator and indicators for type of occupation, full-time position, permanent contract and living in a metropolitan area. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Appendix B

In this appendix we describe the structure of the resumes we submitted in our experiment. Text in brackets refers to randomized information pertaining to the different employee categories and the applicants' background characteristics. As the original letter and CV were in Swedish, the text has been translated in a way to convey the language style of the original applications.

Template personal letter

[FirstName] [LastName]
January 21, 1990

<Street Address>, 116 44 Stockholm
Email: [FirstName].[LastName][RandomNumber]@outlook.com
Phone number: [PhoneNumber]

Dear Sir/Madam,

I saw your job advertisement for an [accountant/software developer]. Since I graduated from Stockholm University, I have been [running a company/employed at a company] offering [accounting/software] services for six years. Over the years, I have gained extensive experience of qualified [accounting/software development]. I am used to working with customer contact, always providing excellent service. I believe that I can contribute to your firm while at the same time further develop my professional competence with you.

I am 29 years old and was born and raised in Stockholm, where I still live with my partner. In my spare time, I enjoy various forms of physical activity. As a person, I am outgoing and find it easy to work with others as well as on my own. At work, I am curious, ambitious and organized.

I hope that this letter has raised your interest to learn more about me and what I can contribute to the success of your organization.

Best regards,
[FirstName] [LastName]

Template CV

[FirstName] [LastName]

January 21, 1990

<Street Address>, 116 44 Stockholm

Email: [FirstName].[LastName] [RandomNumber]@outlook.com

Phone number: [PhoneNumber]

Work experience:

[Work History 1, 2 or 3]

Work History 1

2013– Self-employed offering [accounting/software developer] services, Stockholm

Work History 2

2013– Employed at [Firm Name], Stockholm

Work History 3

2016– Self-employed offering [accounting/software developer] services, Stockholm

2013–2016 Employed at [Firm Name], Stockholm

Education:

2009–2013 [College degree], specializing in [Specialization], Stockholm University

2006–2009 [High school diploma], specialization [Specialization], Bromma High School

Language skills:

- Swedish, mother tongue
- English, fluent

Other skills and qualifications:

[Bullet-point list with relevant qualifications in accounting/software development]