SOCIAL PROTECTION & JOBS

DISCUSSION PAPER

No. 2205 | APRIL 2022

Enhancing Workers' Protection in Jordan

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Abstract

This paper exploits a rich database to provide comprehensive profiling of informality in Jordan, including who informal workers are, their characteristics, and where they work, as well as providing policy recommendations to address informality. The structural framework developed through the comprehensive profiling is followed by an analysis of why workers are informal, using inferential multivariate analysis. Statistical techniques (that is, cluster analysis) are used to group workers by similar characteristics (including education, gender, income, and form of employment) to allow policy makers to pinpoint specific policy tools that can target each group. The paper offers long term policy solutions to address informality, including fostering competition to boost productivity and providing a level playing field. It also proposes short- and medium-term policy options to protect workers against shocks until more productive jobs are created, for instance through the provision of short-term benefits through defined contribution schemes. Heterogeneity is addressed by tailoring policy instruments to clusters of workers.

JEL Codes: J46, E24, E26, J48, J21, J24, J31, J64, J23

Keywords: Informal Labor Market, Labor Productivity, Human Capital, Labor Market Policy, Structure of Labor Force, Social Security

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Acknowledgements

This report was prepared by the World Bank Group's (WBG) Middle East and North Africa (MENA) Regional Social Protection Unit (HMNSP). The report was drafted by Friederike Rother, Carole Chartouni, Javier Sanchez-Reaza, Gustavo Paez Salamanca, and Belal Fallah with contributions from Montserrat Pallares-Miralles and Ernesto Brodersohn. The report was prepared under the general direction and ongoing support of Anush Bezhanyan (Practice Manager, HMNSP) and under the overall guidance of Cristobal Ridao-Cano (Lead Economist).

The authors are particularly grateful to Khalid Ahmed Ali Moheyddeen (Senior Social Protection Specialist, HMNSP) for the exchange of ideas and facilitating the engagement with the Government of Jordan and other partner institutions, as well as Saroj Kumar Jha (Mashreq Regional Director, World Bank Group) and Holly Welborn Benner (Resident Representative, MNCJO) for overall guidance and their continuous support for the dialogue with the Jordanian government and key stakeholders in Jordan. The authors are also thankful for discussions and key contributions from Rada Nawwaf Nafe Naji (Social Protection Specialist, HMSP) and Meriem Ait Ali Shimane (Senior Private Sector Specialist).

In the process of drafting the core ideas, main messages, and policy options presented in the report, the authors benefited to a great extent from the interaction with Jordan's Social Security Corporation (SSC). The authors would like to thank in particular Hazim Rahaleh, the Director General of the SSC in Jordan. Similarly, the authors wish to express their gratitude to the International Labour Organization's team for exchange and coordination including Luca Pallerano, Susan Razzaz, Meredith Byrne, Rana Al-Ansari, Sandra Alves Lopes Silva, and Jullnar Kurdi.

This report is part of the Pensions, SSN, Labor and HCP in MASHREQ (P171595) ASA. The authors would like to thank the donors, The Dutch Government's PROSPECT partnership initiative for their generous contribution to the overall work program on informality in Jordan, including this paper.

The authors would like to thank Maroun Bedran and Michael Alwan for all their efforts in editing this report.

Finally, the authors would like to thank the reviewers, Michael Weber, Senior Economist at the World Bank and Gustavo Demarco, Lead Economist and Global Lead for Pensions and Social Insurance at the World Bank for their review, comments, and guidance.

Acronyms

CART	Classification and Regression Tree
DS	Department of Statistics, Government of Jordan
GOJ	Government of Jordan
HIES	Household Income and Expenditure Survey
ILO	International Labour Organization
JD	Jordanian Dinar
JLMPS	Jordan Labor Market Panel Survey
LFS	Labor Force Survey
MENA	Middle East and North Africa
OECD	Organisation for Economic Co-operation and Development
SME	Small and Medium-Sized Enterprises
SSC	Social Security Corporation
SSL	Social Security Law
TVET	Technical and Vocational Education and Training
TVSDC	Technical Vocational and Skills Development Commission
VSS	Voluntary Savings Scheme


عاش أبى الحسين

Executive Summary

Jordan's high levels of job informality,[1] which weigh on social and economic development, mean that almost half of the total workforce, and 90 percent of non-Jordanian workers, are not covered by social security programs. These workers are left with no access to pensions and unemployment insurance. The COVID-19 pandemic has made this already bad picture worse, with informal workers suffering disproportionally from the impact of the pandemic. In the absence of any social protection, the adverse effects of job losses due to the COVID-19 pandemic have pushed many of them into poverty. Understanding the complexity of the informal sector in Jordan is key to providing policy options to address their distinct needs.

Informality is more common than previously thought: for example, it can be high for male Jordanians, those in permanent contracts, and in registered firms. Moreover, informality occurs even with relatively high incomes, more advanced educational achievement levels, and larger firm size. Contrary to public perception, available statistics show that most informal workers in Jordan are neither self-employed (for example, street vendors) nor working irregularly as daily waged laborers. Instead, most informal workers are regular employees of registered enterprises who are paid monthly. Data shows that many common perceptions are problematic at best and sometimes just misleading, including claims or beliefs that informality is concentrated among non-Jordanians, confined to micro-enterprises and non-registered firms. Prevalent mostly in the agriculture sector, this affects temporary rather than permanent workers, and translates directly into poverty. Rather, informality is pervasive throughout Jordanian society and affects large numbers of workers in all sectors of the economy, and especially in urban areas.

1. In this paper, workers are considered informal if they are not covered by social security. This definition is used because the goal of the paper is to provide a foundation of policy recommendations that enhance the protection of workers against various risks, such as old age, unemployment, or disability. Lack of access to social security or any alternative insurance mechanism exposes workers to such risks.

The Government of Jordan has taken some important steps in the right direction to address informality, for instance, the implementation of the code of conduct in the workplace. At the same time, however, the government has faced deep-seated challenges in reaching out to the large workforce segment that works informally. To this point, efforts by the government have either focused on measures to formalize businesses, getting formal businesses to register workers in the Social Security Corporation (SSC), or incentivizing self-employed workers to register in the mandatory SSC programs. These measures are useful but cannot capture the complexity of the problem or the heterogeneity of the workers involved.

This paper presents a clear mapping of situations of informality among the Jordanian workforce to establish an improved basis for targeted policy interventions. A variety of panel and survey statistics improve our understanding of informal workers, while inferential techniques enhance our understanding of the factors that drive workers' decisions to take on informal employment. Beyond these statistics, the report is novel in that it uses cluster analysis to group informal workers according to similar demographic and labor market characteristics such as age, gender, education, and type of contract. These clusters are especially helpful in designing tailored policy responses for the most significant segments of the population of informal workers in Jordan that respond as precisely as possible to their respective needs. The World Bank's cluster approach of identifying informal workers by specific characteristics builds on this insight and complements findings from the recently published International Labour Organization (ILO) report titled "Opportunities for Extending Social Security Coverage in Jordan" (Razzaz, Pellerano, and Byrne 2020).

From a longer-term perspective, the paper also calls on Jordan's authorities to implement a strategy that aims at fostering productivity and competition to generate better jobs with social protection. These better jobs should yield higher wages and thus greater disposable income, which in turn will enhance workers' protection against financial shocks. In addition, more productive workers and thus firms can be expected to result not only in higher salaries but also in improved working conditions and social protection schemes, as competition for these workers increases.

For the medium and shorter term, the paper lays out policies recommendations to improve government's efforts to place workers in jobs that can be formalized and to offer alternative protection mechanisms for workers who are hard to formalize. Efforts to apply existing labor market regulations effectively should be increased together with steps to strengthen incentives in policy frameworks to formalize. Moreover, social protection should expand its voluntary component by systematically reaching out to those in the workforce who are currently not offered social protection. To that end, a Voluntary Savings Scheme (VSS) is proposed, which complements the existing mandatory social security programs. A companion paper titled "Voluntary Savings Schemes to Protect Informal Workers in Jordan" (Rother et al. 2022) provides details on how such a voluntary scheme can work, making use of the statistical cluster analysis developed in this paper to propose alternative packages to different types of informal workers.

1

Introduction

Job informality is widespread in Jordan: almost half of the workforce (and 90 percent of non-Jordanian workers) are not covered by social security programs like pensions and unemployment insurance. The lack of social protection has exposed the informal workforce to the economic impact of the COVID-19 pandemic in a disproportionate way—many informal workers and their families have been pushed into poverty. This situation calls for urgent policy measures to expand social protection into the informal sector, aimed at strengthening Jordan's sources of growth and mitigating economic and social hardship.

What is informality?

Informality is a heterogeneous concept, encompassing many situations and therefore entailing many definitions. Informality can, for example, refer to firms, such as unregistered firms or street vendors (Gatti et al. 2012), but it can also denote the employment situation of workers. According to the ILO, employees are considered to have informal jobs if "their employment relationship is, in law or in practice, not subject to national labor legislation, income taxation, social protection or entitlement to certain employment benefits (advance notice of dismissal, severance pay, paid annual or sick leave, etc.)."[2] Informality can also include untaxed activities.

2. ILO further states that informality may result from the nondeclaration of the jobs or the employees; casual jobs or jobs of a short duration; jobs with hours of work or wages below a specified threshold (for example, for social security contributions); or lack of application of law and regulation in practice. In the case of own-account workers and employers, the informal employment status of the job is determined by the informal sector nature of the enterprise. Employers (with hired workers) and own-account workers (without hired workers) are considered to be informal when their economic units belong to the informal sector. All contributing family workers are classified as having informal employment, irrespective of whether they work in formal or informal sector enterprises (ILOSTAT 2021).

For the purposes of this paper, workers are considered informal if they are not covered by social security. This definition is used because the goal of the paper is to provide a foundation of policy recommendations that enhance the protection of workers against various risks, such as old age, unemployment, or disability. Lack of access to social security or any alternative insurance mechanism exposes workers to such risks.

The rationale for addressing informality

Formal employment offers workers the benefits of reducing risks to potential shocks in the labor market. Formal employment is the vehicle to offer workers the opportunity to earn income, be protected against health shocks, and contribute to their retirement. Additionally, social protection systems often include social assistance and insurance elements that protect workers against income shocks stemming from an inability to work (OECD 2019). Arguments for lowering informality have included the prevention/amelioration of poverty, the protection of individuals from the most severe effects of economic shocks, and smoothing patterns of consumption.

Informality also serves as a brake on the economic development of the national economy, by limiting savings and, thus, the pool of available funds for investment in the country. Social protection systems are a stable source of pension contributions, representing savings to sustain macroeconomic fundamentals and serving as a crucial source of national savings; the latter represents the main financing source for domestic investment (Alvarez and Ruane 2019). In contrast, informality introduces a distortion in factor prices that leads to misallocation of resources in favor of less-productive firms, thereby lowering aggregate gains (Hsieh and Klenow 2009). Lower formality rates also impinge on fiscal revenue and, consequently, on the economy's public spending multipliers. Furthermore, Bobba et al. (2019) show that human capital accumulated through on-the-job learning is responsible for over half of productivity increases, but its accumulation is faster among those working formally. Therefore, for efficiency reasons (that is, the efficiency gains achieved through investment and productivity and resulting in growth), addressing informality is a crucial aspect of a growing economy.

Informality in Jordan

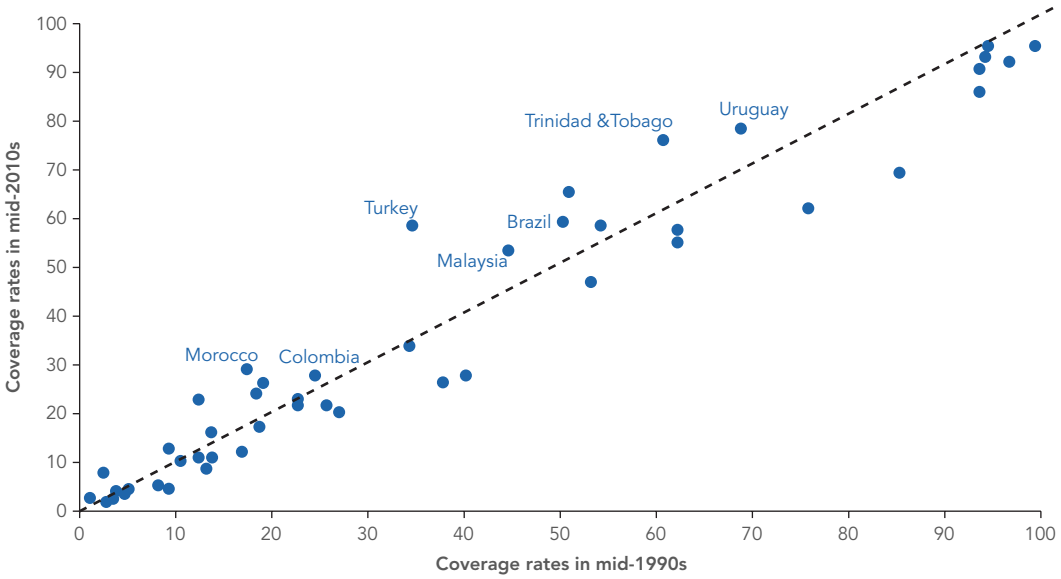
As in other countries in the Middle East and North Africa (MENA) region, informality in Jordan's labor market has proven to be an obstacle to social and economic development and remains prevalent among workers, with nearly half of all workers not contributing to social security. Around 52 percent of all workers and 72 percent of those in the private sector were not contributing to social security in 2018 (Table 1). Jordan has thus made limited progress in expanding social security coverage despite policy efforts.

TABLE 1. Informality rates (%)

	LFS 2018	JLMPS 2016
Overall	52	58
Private sector	72	75
All sectors—Jordanians	33	43
Private sector—Jordanians	55	61
All sectors—non-Jordanians	93	92
Private sector—non-Jordanians	94	93
All sectors—waged employees	46	53
Private sector—waged employees	68	70

Source: DS (2018) Labor Force Survey 2018, and DS (2016) Jordan Labor Market Panel Survey 2016.
Note: The Labor Force Survey (LFS) data shows informality only for waged employees. As such, informality rates for non-waged employees were retrieved from the Jordan Labor Market Panel Survey (JLMPS) data and applied to LFS data to estimate the overall informality rates.

FIGURE 1. Coverage rates worldwide, 1990s vs 2010s (%)



Sources: World Bank (2018), World Bank's Pension Database.

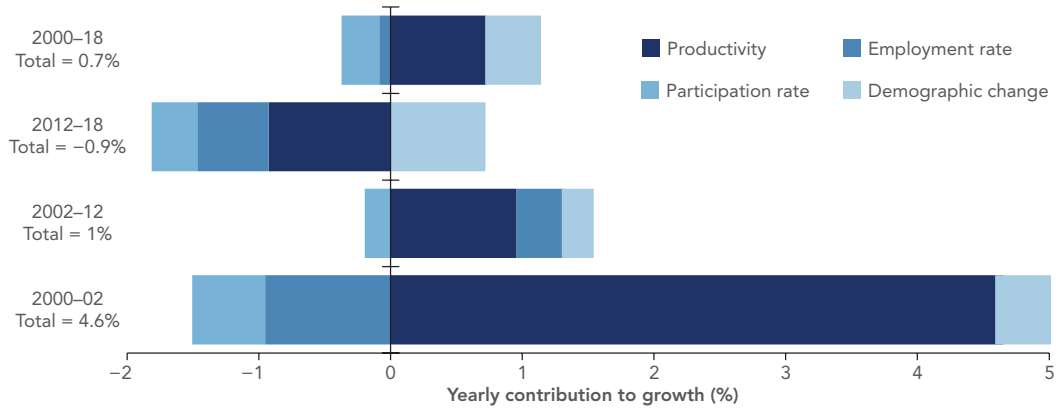
This is no different than other countries. Worldwide, coverage rates have hardly changed since the 1990s; a few countries have slightly increased coverage, while others have even seen a reduction in coverage rates (Figure 1).

To effectively address informality, a long-term solution of creating more productive and remunerative jobs is needed. Globally, informality is generally associated with lower productivity (World Bank 2012). In the case of Jordan, Winkler and Gonzalez (2019) found that employment is shifting from high- to low-productivity sectors with high levels of informality, which leads to a misallocation of resources in the economy. One reason that informality is high is the large share of low-productivity jobs in the economy; low-skilled workers who desire benefits coverage often lack the opportunities afforded to high-skilled workers, in particular the potential for employment. The Jordanian economy continues to produce low-skilled jobs amenable to informality, as the contribution of productivity to growth continues to plummet. Between 2012 and 2018, only demographic change positively contributed to economic growth (Figure 2). Since 2012, economic growth has stemmed from a growing population—thanks in part to the influx of foreign workers—rather than productivity gains.[3]

In the short and medium term and until more productive jobs are created, many workers remain without any social protection, lacking access to social assistance and social insurance programs. Informality can be the symptom of low productivity or also the cause (World Bank 2012). While a long-run approach to solving

3. Since productivity growth, as well as changes in the employment and labor force participation rates, have contributed negatively to growth, the overall economic performance has suffered. Productivity's waning contribution to growth in recent years is linked to an increase in workers, which acts as a disincentive to invest in capital, rendering production processes intensive in the use of labor. Thus, whatever the economy gains in population growth due to the influx of workers is more than lost in productivity.

FIGURE 2. Growth decomposition for Jordan (%)



Sources: World Bank (2021) Job Structures Tool.

informality requires productivity growth, social protection can't and shouldn't wait solely for long-run solutions. Therefore, there is a need in the short to medium term to protect workers who remain vulnerable against shocks and cover them against all types of risks.

However, the analysis presented in this paper demonstrates that there is no single intervention that can improve protection as informal workers are heterogeneous. Informal workers differ in their demographic and socioeconomic characteristics, which may determine their informality status. They may be unable to access formal jobs, perhaps due to lack of education, and thus resort to informality, or may choose to be informal to prolong their time in work, such as early retirees who do not wish to exit the labor market. Some workers are informal even though, legally, they are subject to social security regulations. Informal workers may also be in irregular jobs or self-employed, where it is only voluntary to register with social security.[4] Therefore, it is important to comprehensively profile informal workers and propose targeted interventions that would improve protection for each group.

4. New bylaws recently passed and implemented in 2021 would require mandatory registration in social security for the self-employed and temporary employees with an option of reduced contribution rates. These new laws would apply to both Jordanians and non-Jordanians holding work permits.

The focus of the paper

The focus of this paper is to provide comprehensive profiling of informality in Jordan, including who informal workers are, their characteristics, and where they work, as well as providing policy recommendations to address informality. The structural framework developed through the comprehensive profiling is followed by an analysis of why workers are informal, using inferential multivariate analysis. Statistical techniques (that is, cluster analysis) are used to group workers by similar characteristics (including education, gender, wealth, and form of employment) to allow policy makers to pinpoint specific policy tools that can target each group. The paper will also offer policy recommendations to address short-, medium-, and long-term challenges, including fostering competition and providing a level playing field, ensuring regulation is effectively applied, and providing incentives to formalize. Heterogeneity is also addressed by tailoring policy instruments to clusters of workers. For clarity purposes, the main sections of this paper contain only the results of the statistical procedures that have been performed to support the different policy recommendations. Nevertheless, Annex A presents a detailed explanation regarding the data sources that have been used as well as the different step-by-step methodologies presented in the paper.

2

Profiling Informality: Who are the Informal Workers?

The majority of informal workers are waged employees and not the self-employed, contrary to popular belief. Nearly three-fourths (72 percent) of informal workers in the private sector are waged employees (Table 2). The predominance of wage employment reflects the fact that almost all workers (97 percent of women and 83 percent of men) are waged employees, comparable to Israel's levels (Figure 3). Employers and self-employed workers represent only 8 and 4 percent of total employment, respectively. However, informality rates among employers (nearly 85 percent) and self-employed workers (94 percent) are much higher than for waged employees, so that these two groups account for 27 percent of informal employment (Tables 2 and 3).[5] The structure of employment in Jordan is in striking contrast with other countries in a similar income group. Paid employment is much lower in

TABLE 2. Composition of informal workers in the private sector, 2016 (%)

	Non-Jordanians	Jordanians	All
Waged employees	44.7	27.4	72.1
Employers	3.0	6.3	9.3
Self-employed	4.7	12.9	17.6
Unpaid family workers	0.0	0.4	0.4
Unpaid workers for others	0.5	0.1	0.6
Total	52.9	47.1	100.0

Source: DS (2016) Jordan Labor Market Panel Survey 2016.

5. LFS only addresses social security questions to paid employees.

TABLE 3. Informality rates in the private sector by employment type, 2016 (%)

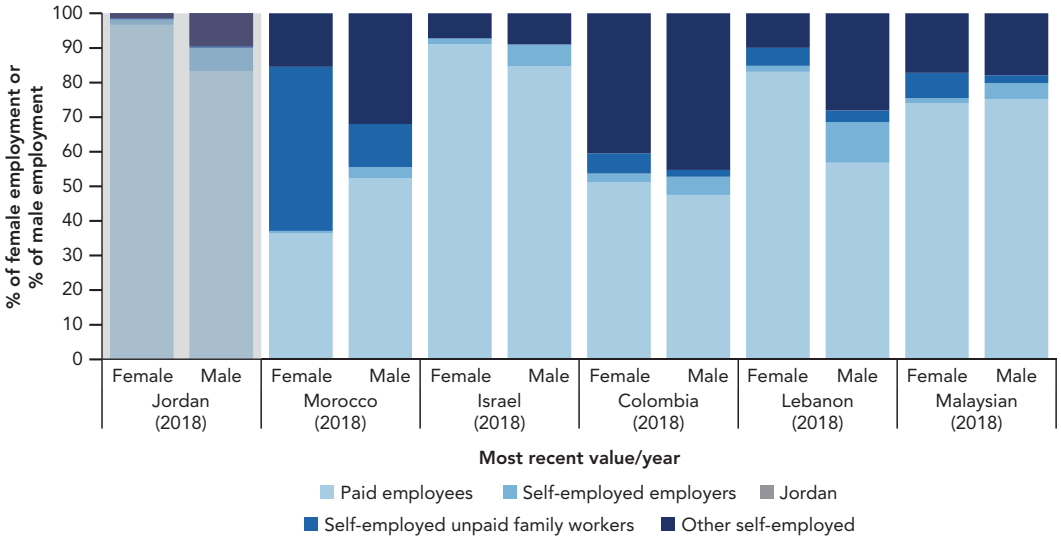
	Non-Jordanians	Jordanians	All
Waged employees	85	50	56
Employers	86	85	85
Self-employed	98	94	94
Total	93	50	70

Source: DS (2016) Jordan Labor Market Panel Survey 2016.
Note: The LFS data show informality only for waged employees.

Morocco or Colombia and for male employment in Lebanon. Self-employment in Morocco is widely spread, particularly so among female workers involved in unpaid family work. In Colombia, self-employment is much more common (Figure 3). While the share of self-employment and employers in Jordan is comparable with the Malaysian experience, formalization rates are higher in these groups in Malaysia.

It is also often believed that informality is concentrated among non-Jordanians, when in fact almost half of informal workers are Jordanians. Informality rates for non-Jordanians in the private sector are indeed much higher than Jordanians, at 93 percent. Nonetheless, Jordanians still represent 47 percent of informal workers (Tables 2 and 3). The analysis, therefore, considers both Jordanians and non-Jordanians, predominantly as waged employees.

FIGURE 3. Employment type, Jordan and comparator countries



Source: World Bank (2020) JobStructures Tool.

TABLE 4. Informality by gender (%)

	Informality share	Contribution to informal employment	Contribution to total employment
Men	48	91	82
Women	22	9	18

Source: DS (2018) Labor Force Survey

Jordanians employed in the private sector

What are their demographic and socioeconomic characteristics?

Informality in the private sector reflects traditional gender roles in Jordan's labor markets, where few women are employed in the private sector. Like in most MENA countries, the public sector in Jordan has traditionally employed the majority of women with jobs. The public sector is associated with higher job security, a safer work environment, and better reconciliation with family duties. It is also perceived to provide higher salaries and benefits, particularly at the local level and for entry-level jobs (OECD 2019).[6] About 90 percent of informal workers are men since women only represent 20 percent of paid employment in the private sector. Men also face informality in greater proportion than women (Table 4). Regression analysis shows that controlling for individual characteristics, women are more likely to be more formal than men (Tables B.1 and B.2 in Annex B).

Young workers experience greater informality rates, especially among men, due to the limited job opportunities facing first-time job seekers. Across all age groups, informality for men is high: at least half of all workers in each age cohort are informal. However, the highest informality is prevalent among the youth, where 62 percent of men are informal. Their contribution to informal and total employment is lower than their older peers at 25 and 19 percent, respectively, since many are still in education. The informality rate for men ages 25–49 is lower than that of younger men at 46 percent but still considered relatively high, especially since they constitute 63 percent of male informal employment. Finally, informality rates for older men ages 50–64 are also relatively high at 43 percent. This fact may be due to older cohorts continuing to work in the informal sector after an early retirement from a formal job. However, this older age cohort only accounts for 12 percent of male informal employment (Table 5).

6. In Jordan, the fastest changes in women's activities take place between the ages of 21 and 24. Around this stage of the life cycle, 45 percent of women leave school, 30 percent enter the labor market, and 19 percent get married. Of those who enter the labor market, less than half find a job (12 percent of all women). Employment rates of women peak at age 27, reaching 21 percent of the female population, and remain relatively stable afterward. Participation rates peak at age 24 and slowly decline every year thereafter.

TABLE 5. Informality by age and gender (%)

	Informality share	Contribution to informal employment	Contribution to total employment
15–24	56	24	19
25–49	41	64	68
50–64	41	11	12
64+	41	1	1
Total		100	100
Men			
15–24	62	25	19
25–49	46	63	67
50–64	43	12	13
64+	40	1	1
Total		100	100
Women			
15–24	26	21	17
25–49	21	73	77
50–64	23	6	6
64+	0	0	0
Total		100	100

Source: DS (2018) Labor Force Survey.

Informality decreases with education. Nearly two-thirds of informal workers have, at most, primary education, and the least educated experience informality in greater proportions. Informality rates among illiterate workers, those who cannot read and write, and those with primary schooling stood at 61 percent in 2018 (Table 6). With a secondary diploma, informality rates fell to 46 percent, albeit remaining high. When controlling for individuals' characteristics, regression results show that the probability of working in a formal job increases if an individual attends school (Table B.2 in Annex B).[7] While an individual's educational level seems to matter for informality, parents' educational attainments do not seem to be of significant importance. Formality rates are very similar across quintiles depicting the extent of parents' education, with the lowest quintile being the least educated (Table 7).

Despite workers with tertiary education faring better in finding formal jobs, they are not exempt from working informally. One in every five workers with a college degree is employed informally (Table 6). These high-skilled workers account for 18 percent of total informal employment.[8] Among women, those with tertiary edu-

7. Regression analysis excludes those attending school.

8. The fact that informality persists even among the highly educated may hint at the possibility that Jordan displays features of an informality trap. As stated in the 2013 *World Development Report*, an informality trap reflects weak social contracts in which a growing middle class demands advanced public services, access to quality and higher education, health care, and pensions. But poor governance leading to low-quality physical and institutional infrastructure, as well as unnecessary regulatory burdens, results in generalized frustration. In this state of affairs, society perceives taxes and public sector benefits as useless or unfair. Such frustrations beget fiscal and regulation avoidance and evasion. In this context, informal jobs not only persist, but can even proliferate (World Bank 2012).

TABLE 6. Informality by educational attainment (%)

	Informality share	Contribution to informal employment	Contribution to total employment
Primary or lower	61	74	53
Secondary	46	8	8
Tertiary	20	18	39
Total		100	100
Men			
Primary or lower	62	77	60
Secondary	48	8	9
Tertiary	23	15	31
Total		100	100
Women			
Primary or lower	43	39	19
Secondary	36	8	5
Tertiary	15	53	76
Total		100	100

Source: DS (2018) Labor Force Survey.

cation account for half of informal employment, although they exhibit lower informality rates than their less-educated counterparts. This is in part because 76 percent of private-sector employed women are highly educated (Table 6). Conversely, women with low educational attainments tend to stay out of the labor force.

Finally, not all informal workers are poor. More than half of informal workers belong to the wealthiest deciles[9] (Table 8).[10] This is because employment rates are highest in the wealthiest households, while inactivity and unemployment are higher in the poorer ones. These less poor households are not eligible for social assistance programs and are often described as the "missing middle" of households that are forgotten when discussing informality. That being said, informality rates are much higher among poorer households, indicating that often informality may not be a choice (see the subsection below, "Why are they informal?"). Informality rates for Jordanians increase

TABLE 7. Formality rates by quintiles of parents' educational attainments (%)

HES (Education)	Jordanian
1	43.4
2	41.8
3	56.9
4	54.0
5	49.5

Source: DS (2016) Jordan Labor Market Panel Survey 2016.
Note: The education level was estimated by performing a principal component analysis based on the maximum education level obtained by the father and by the mother. To transform the categorical variables, dummies were created in a cumulative fashion. For example, an individual with at least secondary education will also be identified in the category of at least primary education. Finally, the first principal component of this set of variables was chosen for the index.

9. Wealth is a composite index made up of the household assets listed in the survey. These 22 variables are aggregated using principal components analysis, and then the first component is taken as the index.
10. The 2018 HIES also shows similar results, with higher household wealth deciles exhibiting lower informality rates.

TABLE 8. Informality's distribution across wealth deciles (%)

Socioeconomic decile	Non-Jordanian	Jordanian
1	30.05	4.46
2	8.92	1.93
3	19.95	8.39
4	11.27	8.06
5	8.22	9.73
6	6.34	13.99
7	4.93	16.92
8	4.93	13.26
9	2.11	13.99
10	3.29	9.26

Source: DS (2016) Jordan Labor Market Panel Survey 2016.

TABLE 9. Informality rates by wealth deciles (%)

Socioeconomic decile	Non-Jordanian	Jordanian
1	88.28	87.01
2	90.48	80.56
3	85.86	71.19
4	85.71	77.56
5	81.40	65.77
6	84.37	60.17
7	95.45	61.35
8	91.30	54.08
9	81.82	54.26
10	82.35	49.29

Source: DS (2016) Jordan Labor Market Panel Survey 2016.

as wealth decreases, with 87 percent of workers in the poorest deciles in informal work (Table 9). This is not the case, though, for non-Jordanians, where informality rates are high across all deciles.

Where do they work?

Most informal workers are in urban areas. Up to 84 percent of Jordanian private sector employees work informally in the most populated governorates: Amman, Irbid, and Zarqa. The remaining 16 percent of informal waged workers in the private sector work in the rest of the country. The highest informality rate is in Jarash; however, it only accounts for 2 percent of informal employment (Table 10). The urban concentration of informality makes policies targeting the three most populated governorates an effective set of tools to significantly increase coverage.

The bulk of informality takes place in formal establishments. Almost three-quarters (73 percent) of informal workers are employed in registered businesses,[11] so policies aimed at registering businesses will not solve the informality problem.[12] Registered businesses hire 86 percent of all private-sector workers, 37 percent of whom are hired informally (Table 11). Even though the informality rate among unregistered businesses is much higher at 88 percent, they only comprise 21 percent of informal employment since most Jordan businesses seem to be registered. The results are based on workers' knowledge of whether the firm they work at is registered, and therefore, a demand survey will be needed to verify these results. That being said, JLMPS data also shows similar results in terms of business registration.

Most informality takes place in hard-to-monitor micro firms. Workers in micro firms make up almost three-quarters of informal employment, making it very difficult for the government to reach these firms and enforce formalization. Nearly 80 percent of workers employed in micro firms (1–9 employees) are informal, accounting for 72 percent of informal employment (Table 12).

11. Registration in LFS data entails tax or commercial registration.

12. The World Bank is also currently conducting a survey of informal businesses to shed light on labor demand constraints to address informality.

TABLE 10. Informality by governorate of work (%)

Governorate	Share of informal workers	Contribution to total informal workers	Contribution to national paid private employment
Amman	36	50	59
Balqa	56	5	4
Zarqa	52	14	11
Madaba	40	1	1
Irbid	64	20	14
Mafraq	56	3	2
Jarash	70	2	1
Ajloun	65	1	1
Karak	39	2	2
Tafileh	23	0	1
Maan	41	1	1
Aqaba	27	2	3
Total		100	100

Source: DS (2018) Labor Force Survey 2018.

TABLE 11. Informality by firm registration (%)

Firm registration	Share of informal workers	Contribution to total informal workers	Contribution to national paid private employment
Registered	37	73	86
Not registered	88	21	10
Do not know	68	6	4
Total		100	100

Source: DS (2018) Labor Force Survey 2018.

Informality decreases with firm size, but it does not disappear. Firms with 10 to 19 employees still hire nearly one in three workers as informal. Although informality is lower for firms with 20 to 49 workers, it increases to 31 percent for firms with 50 to 99 employees. Even in large firms (100 employees and more), 6 percent of workers are informal (Table 12). For those larger firms that hire informally, an enforcement policy may be somewhat easier to implement.

Informal employment in Jordan is not as visible as in other countries. Two-thirds (66 percent) of informal waged workers operate inside an establishment, such as an office, shop, or factory (Figure 4).

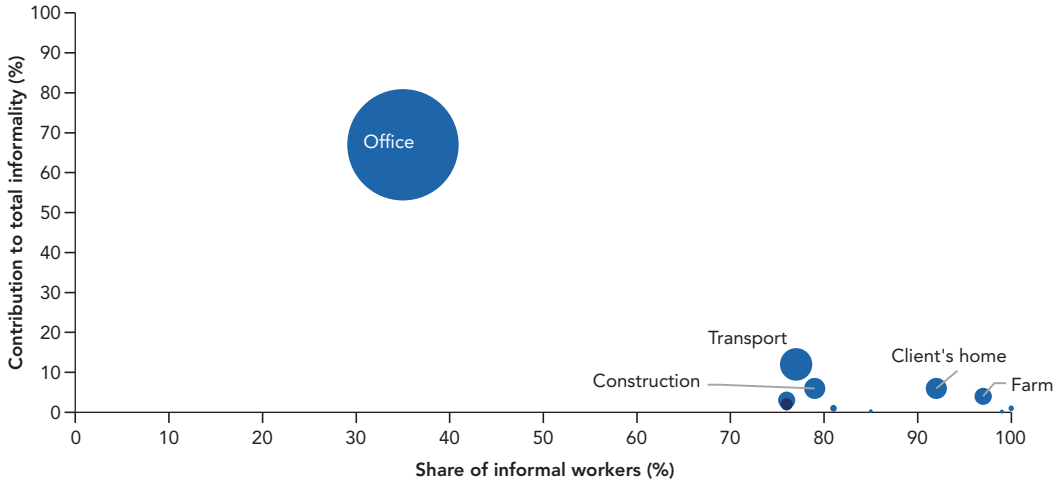
The most visible informal workers comprise 21 percent of informal waged workers—street vendors; individuals working in stands, bazaars, or at home; and workers in transport vehicles. They are, therefore, not the largest contributors to informality. Informal workers operating outside establishments may also be non-waged workers; however, own-account workers or employers constitute 22 percent of Jordanian workers in the private sector (Table 13).

TABLE 12. Informality by firm size (number of workers employed) (%)

Size	Share of informal workers	Contribution to total informal workers	Contribution to national paid private employment
Less than 10	78	72	43
10–19	28	7	12
20–49	15	4	12
50–99	31	15	23
100+	6	1	10
Total		100	100

Source: DS (2018) Labor Force Survey 2018.

FIGURE 4. Informality by place of work, 2018 (%)



Source: DS (2018) Labor Force Survey 2018.
Note: Bubble size indicates share of total employment.

Informal workers typically work in low-skilled occupations, on par with their educational attainment. Policies targeting informality in agriculture rest on the perception that sector's informality rate is one of the highest. However, 75 percent of informal workers are employed as either (i) sales and services workers,[13] (ii) crafts and related trades workers, or (iii) plant and machinery operators (DS 2018).[14] These three categories of occupations comprise half of the Jordanian private sector paid employment. Higher-skilled occupations have lower informality rates, ranging from only 3 percent for managers to 22 percent for clerical occupations, accounting for just 14 percent of informal employment even though they represent 40 percent of total Jordanian paid work in the private sector (Table 14).

Informality is mostly prevalent in industries requiring low-skilled workers. One-fourth of Jordanian informal workers are employed in the wholesale, retail, and machinery repair industries,

13. Around 61 percent of sales and service workers are in sales alone.
14. Around 80 percent of plant and machine operators are drivers and mobile plant operators.

TABLE 13. Informality by type of place of work (%)

Type	Informality share	Contribution to informal employment	Contribution to total employment
At home	85	0.3	0.1
Structure attached to the home	99	0.2	0.1
At the client/employer home	92	6	3
At an office, shop, or factory	35	67	83
Fixed stall in the market/bazaar	76	2	1
Non-fixed stall/stand in market/bazaar	100	1	0.2
Street	76	3	2
Farm/agricultural plot	97	4	2
Transport vehicle	77	12	7
Construction site	79	6	3
Other	81	1	0.3
Total		100	100

Source: DS (2018) Labor Force Survey 2018.

TABLE 14. Informality by occupation (%)

Occupation	Share of informal workers	Contribution to total informal workers	Contribution to national paid private employment
Managers	2.89	0.01	0.18
Professionals	12.81	8.19	27.71
Associate professionals	19.91	3.09	6.75
Clerks	21.9	2.41	4.73
Sales and services workers	64.62	29.21	19.72
Agricultural	90.92	3.54	1.67
Craft and related trades workers	67.46	28.82	18.58
Plant and machine operators and assemblers	57.21	17.92	13.58
Elementary occupations	41.94	6.82	7.07
Total		100	100

Source: DS (2018) Labor Force Survey 2018.

where the informality rate is around 60 percent. Construction and agriculture have very high informality rates. Still, they do not contribute much to informal employment among Jordanians, as most workers in that sector are non-Jordanians (66 percent for construction and 78 percent for agriculture). Transportation exhibits high informality too but does not contribute much to informal or total paid employment, even though that industry employs mostly Jordanians. Industries where high-skilled workers are required have lower informality rates (Table 15).

TABLE 15. Informality by industry (%)

Industry	Share of informal workers	Contribution to total informal workers	Contribution to national paid private employment
Agriculture, forestry and fishing	90	4	2
Mining and quarrying	21	1	1
Manufacturing	36	15	19
Electricity, gas, steam and air conditioning	12	0.4	1
Water supply, sewerage and waste management	42	1	1
Construction	75	12	7
Wholesale and retail trade	63	31	21
Transportation and storage	60	14	10
Accommodation and food service activities	46	6	6
Information and communication	11	1	3
Financial and insurance activities	5	0.4	4
Professional, scientific and technical	30	0.3	0
Administrative and support service activities	19	2	5
Education	28	2	2
Human health and social work activities	14	3	9
Arts, entertainment, and recreation	20	2	4
Other service activities	40	0.5	1
Activities of households as employers	78	5	3
Total		100	100

Source: DS (2018) Labor Force Survey 2018.

What type of workers are they?

Contrary to the perception that informal workers are largely temporary workers, most informal workers in Jordan are employed in permanent positions and are paid monthly wages. Around 13 percent of informal workers are paid daily, while 84 percent are paid monthly (DS 2018). Similarly, only 16 percent of informal paid workers are employed temporarily (with fixed contract duration), the rest being in permanent positions. Temporary workers can be either regular or irregular workers.[15] Around 12 percent of regular workers are in temporary contracts, 62 percent of which are informal (DS 2016).

15. The 2014 Social Security Law (SSL) defines regular workers as those working 16 days or more in a given month, regardless of hours per day, or who are paid monthly, regardless of how many days the employee works (except for the first month of work, to which the principle of 16 days or more per month applies). However, the analysis uses the self-reported regular work variable in the JLMPS data. If the SSL definition of regular work is applied to the JLMPS data, 99.9 percent of workers would be regular.

Three-quarters of informal paid workers are regular employees even though, by law, they must be legally covered under social security.[16] Regular workers represent 87 percent of all paid private-sector workers (DS 2016). Most of them are required to be covered by social security programs, including old age, disability, survivorship pensions, sickness, maternity leave, work injury, and unemployment. However, there is limited effective enforcement, as half of the regular workers are informal, 75 percent of whom are working in registered businesses (DS 2016).[17]

Irregular workers are less common in the private sector, but they also face higher rates of informality. Only 25 percent of informal workers are irregular, and they represent only 13 percent of the private sector's total employment. Informality is widespread among irregular workers, as they are not subject to mandatory contributions to social security.[18] Indeed, regression analysis shows that being in irregular work increases the likelihood of being informal (Table B.2 in Annex B). To address the informality challenge, revisions to the social security regulations in 2014 allowed irregular workers to sign up for voluntary contributions to old age and disability pensions,[19] although social insurance coverage only slightly increased for irregular workers. In 2016, only 12 percent of irregular workers became formal (according to data in the JLMPS). The new bylaws, which are in the process of being implemented, will now mandate contributions irrespective of the regularity of work.[20] However, as irregular workers represent a smaller share of private sector employment, they are not the major informality source. Thus, even strong enforcement of the regulations would only slightly improve coverage.

Why are they informal?

Being informal may be a door out of unemployment for many individuals, as formal jobs are hard to get. In Jordan, only 4 percent of those unemployed in 2010 managed to find a formal job in the private sector in 2016 (Table 16). Those who obtained jobs were either able to find a public sector job (24 percent) as governments try to absorb their unemployed or resorted to informal employment (22 percent).

Workers may find it difficult to access formal jobs due to limited opportunities for changing employment type. Transitions out of informality are not common. More than four-fifths of all informal workers in 2010 were either still working in the informal sector, unemployed, or inactive in 2016. Only 18 percent of informal workers in 2010 ended up in the formal sector (in either public or private jobs) by the end of the same period. Workers with formal employment in 2010 were also likely to remain in the same type of employment, be unemployed, or be inactive. In the private sector, 42 percent remained formally employed in that sector by 2016. Finally, the public sector also remained the choice six years later for over two-thirds of government employees (Table 16).

16. Social security contributions are currently 21.75 percent overall, but 17.5 percent of that goes to pensions. Employers and workers contribute 14.25 and 7.5 percent of wages, respectively. A companion paper, "Voluntary Savings Schemes to Protect Informal Workers in Jordan," provides more details on the social security regulations.
17. Based on the JLMPS sampling weight, there are 22,162 irregular and informal workers employed in registered businesses.
18. According to Article 4 of the 2014 SSL, those who are excluded from mandatory coverage (and voluntary if they are non-Jordanians) include (i) individuals covered by the old civil and military pension schemes; (ii) non-Jordanians living in Jordan but employed by regional and international missions; and (iii) irregular workers.
19. Workers voluntarily contribute 17.5 percent of monthly earnings, where the minimum earnings are based on the national monthly minimum wage.
20. In 2019, further efforts to expand coverage included certain bylaws and amendments to current regulations of SSC. The new regulations include previously uncovered individuals and allow for partial coverage for long-term benefits (retirement), depending on reduced rates of contributions chosen by individual workers. Implementation of the new bylaws is planned in stages. A companion paper, "Voluntary Savings Schemes to Protect Informal Workers in Jordan," provides more details on the new bylaws.

TABLE 16. Employment status in 2016 as a share of employment type in 2010 (%)

		2010				
		Public sector	Formal private	Informal private	Unemployed	Inactive
2016	Public sector	68	12	6	24	5
	Formal private	4	42	12	4	4
	Informal private	5	18	52	22	5
	Unemployed	3	4	7	20	9
	Inactive	20	25	24	29	77
	Total	100	100	100	100	100

Source: DS (2016) Jordan Labor Market Panel Survey 2016.

Job seekers may also find it hard to access formal jobs in certain governorates due to their limited geographic mobility.[21] Econometric analysis using LFS 2018 data shows that controlling for individual characteristics, workers who are willing to commute across governorates are more likely to be formal. However, according to the data, only 14 percent of Jordanian waged workers live and work in different governorates, with three-quarters of these workers specifically commuting to access formal jobs, especially in Amman, where most jobs are created. As a result, most commuters are from Amman's neighboring governorates, Zarqa and Balqa. Commuters are also mostly men who face fewer social barriers in leaving the governorate they live in (DS 2018).

Access to formal jobs may be limited if firms offer fewer formal jobs to reduce costs. Firms may prefer to cut costs by not registering their workers in social security, even though they are legally bound to do so. In addition to saving on contribution rates, firms also save by offering fewer benefits to these unregistered workers. A very small share of informal workers (1 to 6 percent) is entitled to health insurance and annual, sick, and maternity leaves. On the other hand, 60 to 68 percent of formal workers are offered these benefits (Table 17). Firms may also evade paying informal workers the statutory monthly minimum wage of 220 Jordanian dinars (JD).

21. Data is not available for individuals who permanently move to another governorate, and as such, internal mobility may be more prevalent than the data indicates.

TABLE 17. Informality distribution by type of work benefits (%)

	Health insurance	Paid vacation	Paid sick leave	Maternity/paternity
Formal	58	67	66	44
Informal	1	5	6	1
Men				
Formal	60	68	66	43
Informal	1	4	5	1
Women				
Formal	53	64	67	47
Informal	2	10	11	3

Source: DS (2018) Labor Force Survey 2018.

The 2018 LFS shows that around 18 percent of informal Jordanians earn below the minimum wage. Finally, firms may more easily dismiss informal workers than formal ones, as labor regulations in Jordan remain quite rigid.[22]

Thus, for workers who have few opportunities to access formal jobs, informality may not be a choice but rather a necessary condition of employment. In addition to receiving fewer benefits, these informal workers earn on average less than their formal counterparts in the private sector; econometric analysis, using hourly wage data from JLMPS 2016 and LFS 2018 data, shows that formal workers in the private sector earn about 14 percent more than their counterparts in the informal sector. Indeed, formality rates for Jordanians increase with the higher wealth deciles (Table 9 above). Informal workers are also more likely to be underemployed (working less than 35 hours a week, JLMPS 2016). About 6 percent of informal workers are underemployed, while the corresponding share for formal workers is 3 percent. Underemployment is related to informality, but this is not the case for overemployment. Informal workers are not more likely to work more than 34 hours per week than their formal counterparts (DS 2016).[23]

Informality may also be a choice for individuals who retire early and wish to complement their pension benefits with income from informal employment. More than 60 percent of people retire before the legal retirement age (55 for woman and 60 for men) (Figure 5). This is not surprising given that early retirement induces a relatively low penalty.[24] Some of the early retirees decide to reenter the labor market and may choose to work informally to complement pension benefits.[25]

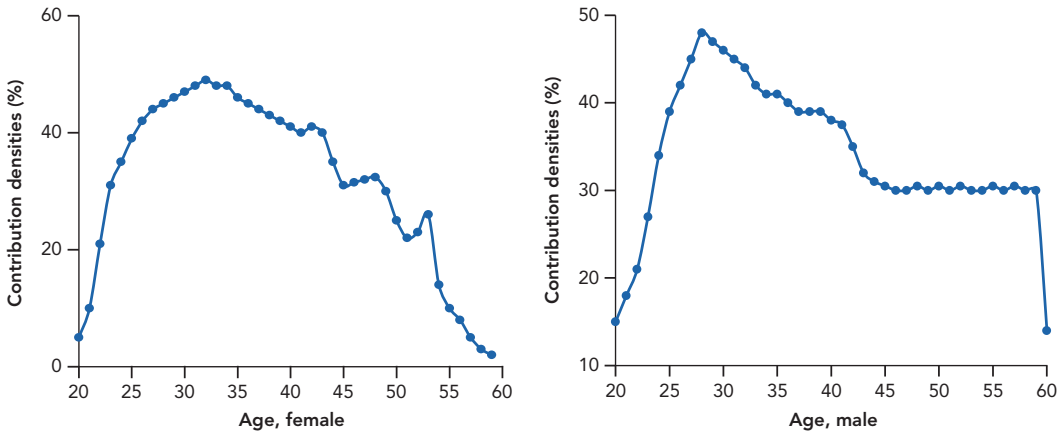
22. While Jordan undertook numerous regulatory reforms in terms of business regulation between 2018/2019 and improving its Doing Business Index, the Labor Law is still quite rigid. The Labor Law prohibits abusive dismissals, stating that "if a worker institutes judicial proceedings within sixty days of his dismissal, and a competent court finds the dismissal arbitrary and in violation of the provisions of this Law, the employer may be ordered to reinstate the worker or pay him damages." However, Jordan's law allows contract termination for business reasons. In particular, an employer may terminate or suspend all or some contracts of employment of indefinite duration if economic or technical conditions were to require it, such as a reduction of workload, replacement of an old production system by a new one, or total stoppage of work, provided that the Ministry is duly notified. Notification of relevant authorities and approval of redundancies are required.

23. Due to the LFS's small sample size for those underemployed, the paper relied on the JLMPS for this issue.

24. Penalties for early retirement were recently increased for new entrants in the labor market, although people are not affected in the short term; also, these penalties are not yet actuarially fair.

25. Data is not available on the share of early retirees working informally.

FIGURE 5. Contribution densities by age



Source: SSC Administrative data (Forteza and Mussio 2013).

Non-Jordanians employed in the private sector

The influx of refugees has led to a significant increase in informality. Between 2010 and 2016, informality rose from 57 percent of private sector employment to 70 percent (Table 18). While Jordanian's informality share remained virtually unchanged (and fell to 43 percent in 2018, per the LFS), the influx of refugees determined the increase in informality. In 2010, only 1 in 10 workers was non-Jordanian; by 2016, 31 percent of workers were immigrants. Informality among non-Jordanians increased from 85 percent in 2010 to 93 percent in 2016 (JLMPS) and 94 percent by 2018 (LFS data not shown in Table 18).

Despite the relatively recent influx of Syrian refugees, most informality observed among non-Jordanians is due to economic migration.

TABLE 18. Informality shares, 2010–16 (%)

	2010	2016
Overall	33	53
Private sector	57	70
Jordanian citizens—private sector	51	50
Immigrants—private sector	85	93

Source: DS (2016) Jordan Labor Market Panel Survey 2016.

In the aftermath of the Arab Spring and the resulting conflict in Syria in 2011, Jordan welcomed a massive influx of refugees. Today, displaced Syrians represent over 10 percent of the total Jordanian population, over 100,000 work permits for Syrians issued by the Jordanian government since 2016. Despite the sizable refugee population in need of work, informality stemming from refugees accounts for only one-third of informality among immigrants (Table 19). Instead, the majority of informal work is carried out by economic migrants seizing the opportunity of better wages; over 62 percent of informal immigrant workers have come to Jordan in search of better job opportunities. Egyptians, typically economic migrants, represent 53 percent of all migrants involved in informal work, while refugees from Syria account for only one-third of migrants working informally (Table 20).

Most informal non-Jordanians are waged workers. Non-Jordanians are mostly employed in the private sector as waged workers. In 2018, the LFS showed that 95 percent of immigrant workers were employed in the private sector and that 91 percent were receiving a wage. In contrast, 59 percent of Jordanians were private sector employees, and 85 percent received a wage.

TABLE 19. Distribution of non-Jordanian informal employment by immigration reason (%)

Reason for moving to Jordan	Share of informal workers	Contribution to total informal immigrant workers	Contribution to paid private immigrant employment
Refugee	96	33.9	33
Job seeking	99	1.1	1
Work	94	62.7	63
Study	40	0.1	0.2
Companion	77	1.6	2
Other	85	0.4	1
Total		100	100

Source: DS (2018) Labor Force Survey 2018.

TABLE 20. Informality status of non-Jordanians by nationality (%)

Nationality	Share of informal workers	Contribution to total informal immigrant workers	Contribution to paid private immigrant employment
Egyptian	95	53	52
Syrian	97	34	33
Other	84	13	15
Total	94	100	100

Source: DS (2018) Labor Force Survey 2018.

Most informal non-Jordanian employees are of low education and in low-skilled occupations. While some non-Jordanians are skilled workers, most arrive with low educational attainment levels. In 2018, fewer than one in five immigrant workers had a tertiary education degree. Over 60 percent of non-Jordanian workers had less than secondary education completed, and over one in four non-Jordanian workers had only elementary schooling or less. In contrast, over 41 percent of Jordanian workers had tertiary education degrees. Non-Jordanians are also concentrated in low-skilled occupations, mainly in services and sales, crafts and related trade occupations, and in elementary occupations.

However, education or occupation does not prevent informality among immigrants and refugees. Informality among non-Jordanians runs across education levels and is high even among those with high educational levels. Non-Jordanian workers with tertiary education, comparable to all other educational attainment levels, showed high informality shares of 87 percent. Similarly, informality rates for non-Jordanians were at least 91 percent, regardless of occupation.

Finally, the issuance of work permits does not prevent informality. Work permits, issued by the government to regulate the employment of foreign workers, have been at the center of the policy debate on the Syrian refugee crisis in Jordan. In 2016, the Jordan compact pledged the issuance of 200,000 formal jobs for Syrians. Since then, over 100,000 work permits have been issued to create formal jobs for Syrian refugees. The number of work permits issued is often used as an indicator of how successful efforts have been in including Syrian workers in the labor market. While the issuing of work permits can be seen as an achievement, work permits do not necessarily measure formal job creation. Around 79 percent of non-Jordanian workers have a work permit but at the same time are informal. Thus, the issuance of work permits has little impact on informality unless the other obstacles to informality are addressed in a holistic way.

Clusters of informal workers

Cluster analysis can be used to help define targeted policies to promote formal work among different groups of informal workers. The previous analysis established the extent of heterogeneity of informal workers by socioeconomic characteristics, as well as by the location and type of firms they work in. This heterogeneity implies the need for differentiated policy interventions that can be directed toward each group. The goal of cluster analysis[26] is to define groups with similar characteristics. In this case, cluster analysis can be used to determine the existence of certain niches of informality in the

26. The step-by-step procedure of cluster analysis is detailed in Annex C.

labor market, where informal workers have similar characteristics. By identifying the main characteristics of these niches, it is then possible to design targeted policies that can respond to the informality challenges of each cluster.

Cluster analysis was performed separately on (1) men and women; (2) waged workers, self-employed, and employers; and (3) Jordanians and non-Jordanians. These groups differ markedly from one another, are subject to different regulations and social realities, and should not be pooled together. LFS 2018 data was used to cluster informal workers.[27] Due to sample size limitations, the clustering could not be done on Jordanian women who are self-employed or employers, on non-Jordanian women, or on non-Jordanian self-employed men, as they comprise only 1.5 percent, 1.8 percent, and 3.1 percent of the sample, respectively. Thus, clustering was performed for four groups: (1) waged Jordanian men, (2) waged Jordanian women, (3) Jordanian men who are self-employed or employers, and (4) waged non-Jordanian men.

The clustering methodology included four steps: (1) identification of variables, (2) hierarchical clustering, (3) characterization of the groups, and (4) estimation of the share of formal workers with similar characteristics to informal workers within each group. First, several variables were selected based on their capacity to describe the demographic characteristics of the workers, their skills, the job characteristics, and the characteristics of the firms in which they work. Once the variables were selected, hierarchical clustering was performed, which allocated individuals, based on their similarities along the set of selected variables, into six groups. The third step reviewed the composition of the groups along market-relevant variables and characterized them. Finally, the groups were labelled according to the probability of a worker being informal in that group. To do so, a regression tree was calibrated using the informal workers and used to classify the formal workers. Then, by comparing the formal-to-informal ratio within each group, labels were applied so that the first cluster has the highest likelihood of informality, while the last cluster has the lowest.[28]

Six clusters of informal workers were identified for each of the four groups above, mainly based on their skill level and where they work.

Waged Jordanian men in the private sector

Table 21 below demonstrates clusters of informal waged Jordanian men employed in the private sector. The clusters are described below.

Agricultural workers: Cluster 1A includes all the agricultural workers with low education, working in micro, small, and medium farms that are not registered, and earning the least income when compared to other clusters. The average monthly wage is JD 201, which is below the minimum wage. Cluster 1A is the hardest to formalize, as only 7 percent of individuals with similar characteristics are found to be formal. However, targeting cluster 1A will not have a significant impact on informality among employed Jordanians as it is the smallest cluster, only comprising 4 percent of the informal waged Jordanian men in the private sector. Indeed, workers in the agriculture, forestry, and fishing sector comprise only 4 percent of paid Jordanian informal employment.

27. Clustering was also performed on the JLMPS 2016 data, where groups somewhat similar to those in the LFS 2018 were identified, differing only in that other variables were used to identify the clusters.

28. The final step was not possible to implement for Jordanians who are self-employed or employers. This is because LFS 2018 does not ask about social security coverage for the self-employed or employers. The clustering assumes all of the self-employed and employers are informal. This is a reasonable assumption; data from the JLMPS showed that 86 percent of employers and 95 percent of self-employed do not have social security.

TABLE 21. Clusters of informal waged Jordanian men employed in the private sector

Variable	Cluster 1A (4%) *Agricultural workers*	Cluster 2A (18%) *Service and sales workers*	Cluster 3A (15%) *Crafts and related trade workers*	Cluster 4A (10%) *Plant and machine operators*	Cluster 5A (40%) *Semi-skilled workers in less populated governorates*	Cluster 6A (13%) *High-skilled workers*
Education	Low	Low	Low	Low	Low	High
Average age	35	33	34	39	33	35
Occupation	Skilled agriculture	Service and sales	Crafts and related trade	Plant and machine operators	Mixture of medium skilled occupations	Professionals, associate professionals, clerks professionals, clerks
Sector	Agriculture	Trade	Construction, manufacturing	Transportation	Low productivity sectors	All sectors including administration and professional activities
Governorate	Balqa, Irbid, Mafraq	3 most populated governorates: Amman, Zarqa, Irbid	3 most populated governorates: Amman, Zarqa, Irbid	3 most populated governorates: Amman, Zarqa, Irbid	2/3 in less populated governorates	3/4 in 3 most populated governorates: Amman, Zarqa, Irbid
Firm size	SMEs	Micro	Micro	Micro	SMEs	All, includes large firms
Firm registration	Mostly no	Mostly yes	Split evenly	Mostly yes	Mostly yes	Mostly yes
Earnings: Average monthly wages	Lowest earners JD 201	JD 249	Lowest earners JD 214	JD 238	JD 233	Highest earners JD 321
Workplace	Farms	Offices	Offices, client homes	Transportation vehicles	Offices, transportation vehicles	Offices
Type of employment	Mostly temporary	Mostly temporary	Mostly temporary	Mostly temporary	Half temporary	Half temporary
Working hours		Work the most hours		Work the most hours		Work the least hours
Share of formal workers with similar characteristics	**7%** *Hardest to formalize*	16%	25%	28%	35%	**83%** *Easiest to formalize*
Average wage premium between formal and informal sectors*	JD 136	JD 109	JD 115	JD 83	JD 126	JD 75

* For this exercise, the average wage difference between formal and informal workers is calculated. Similar exercises were performed with other distribution moments, yet the results were robust. It is important to highlight that only the pecuniary wage was considered; therefore, in-kind income was not included as part of the wage.

Service and sales workers: Cluster 2A includes all the sales and service workers with low education, working in micro firms that are mostly registered. However, commercial business registration does not always imply workers' coverage in social security. Employees in cluster 2A work the most hours in offices located in the three most populated governorates: Amman, Irbid, and Zarqa. They are mostly in the wholesale and retail trade sector, earning among all six clusters the second highest average monthly wage of JD 249. Cluster 2A is also hard to formalize since only 16 percent of workers with cluster 2A characteristics are found to be formal. Unlike cluster 1A though, it is not a very small cluster, comprising 18 percent of the informal waged Jordanian men in the private sector.

Crafts and related trade workers: Cluster 3A includes all workers in crafts and related trades employed in the manufacturing and construction sector in micro firms located in Amman, Irbid, and Zarqa. Similar to agricultural workers in cluster 1A, they earn the least income when compared to other clusters. The average monthly wage is JD 214. Around one-fourth (25 percent) of all workers with characteristics similar to those in cluster 3A are found to be formal, earning on average JD 115 per month more than their informal counterparts. This is also not such a small cluster, comprising 15 percent of the informal waged Jordanian men in the private sector.

Plant and machine operators: Cluster 4A includes all plant and machine operators in the transportation sector. These workers are typically of low education, work the most hours similar to sales and service workers in cluster 2A, and are employed in registered micro firms located in Amman, Irbid, and Zarqa. Around one-fourth (25 percent) of all workers with characteristics similar to those in cluster 4A are found to be formal. The average monthly wage premium between the informal and formal workers in cluster 4A is one of the lowest (at JD 83) compared to the other clusters. Workers in cluster 4A comprise 10 percent of the informal waged Jordanian men in the private sector.

Semi-skilled workers in the less populated governorates: Cluster 5A comprises workers with mixed skill levels working in several low productivity sectors. They are mainly employed in registered micro, small, and medium firms. What distinguishes cluster 5A from other clusters is the employees' governorate of work. Whereas in all other clusters except cluster 1A, workers are mostly concentrated in the three most populated governorates, the opposite holds true for cluster 5A: 62 percent of these workers are in governorates other than Irbid, Zarqa, and Amman. Further, cluster 5A has the second highest average monthly wage premium (JD 233) between the informal and formal workers, after agricultural workers in cluster 1A. Workers under cluster 5A comprise 40 percent of all the informal waged Jordanian men in the private sector, and as such, it is the largest cluster by far.

High-skilled workers: Cluster 6A includes the highly educated and skilled professionals working across sectors and firm sizes in Amman, Irbid, and Zarqa. They are the easiest to formalize by far, as 83 percent of all workers with similar characteristics are found to be formal. The average monthly wage premium between formal and informal workers is the lowest at JD 75. Cluster 6A forms 13 percent of the informal waged Jordanian men in the private sector. Therefore, covering workers under cluster 6A may be a quick win if the right policies are in place.

Waged Jordanian women in the private sector

Table 22 below demonstrates clusters of informal waged Jordanian women employed in the private sector. The clusters are described below.

TABLE 22. Clusters of informal waged Jordanian women employed in the private sector

Variable	Cluster 1B (5%) *Agricultural workers*	Cluster 2B (9%) *Crafts and related trade workers*	Cluster 3B (15%) *Service and sales workers*	Cluster 4B (17%) *Elementary occupations*	Cluster 5B (32%) *High-skilled workers*	Cluster 6B (22%) *High-skilled workers in the less populated governorates*
Education	Low	Medium	High	Medium	High	High
Average age	37	34	31	36	32	30
Occupation	Skilled agriculture	Crafts and related trade	Service and sales	Elementary occupations	Professionals	Mixture; 1/3 professionals
Sector	Agriculture	Manufacturing	Trade	Dispersion across some sectors	Education, human health	Dispersion across all sectors
Governorate	Balqa, Irbid, Karak	1/2 in Amman, Irbid, Zarqa, and 1/2 in Ajloun	Amman, Irbid, Zarqa, Karak	2/3 in Amman, Balqa	Amman, Irbid	Spread across governorates with 2/3 in less populated governorates
Firm size	1/2 in micro, 1/2 in small and medium	Micro	2/3 in micro, 1/3 in medium	All, includes large firms	1/2 in micro, 1/2 in small and medium	1/2 in micro, 1/2 in small and medium
Firm registration	Mostly no	Mostly yes	Yes	Yes	Yes	Yes
Earnings: Average monthly wages	Lowest earners: JD 76	JD 178	JD 224	JD 202	Highest earners: JD 246	JD 219
Workplace	Farms	Offices	Offices	Offices	Offices	Offices
Type of employment	Mostly temporary	Mostly temporary	Mostly temporary	Mostly temporary	Half temporary	Half temporary
Working hours	Work the fewest hours		Work the most hours			
Share of formal workers with similar characteristics	3%	69%	70%	81%	81%	82%
Average wage premium between formal and informal sectors	JD 127	JD 111	JD 98	JD 68	JD 91	JD 43

Agricultural workers: Cluster 1B includes all female agricultural workers with low education, working in micro, small, and medium farms that are not registered, and earning the lowest income when compared to other clusters (on average JD 76). Similar to Jordanian men (cluster 1A), cluster 1B is the hardest to formalize as only 3 percent of women with similar characteristics are found to be formal. It is the smallest cluster as well, comprising 5 percent of informal waged Jordanian women in the private sector, so targeting the agriculture sector overall will not have a significant impact on informality rates among Jordanians.

Crafts and related trade workers: Cluster 2B includes all women in crafts and related trades employed in the manufacturing sector in registered micro firms, half of which are located in Ajloun and the other half in Amman, Irbid, and Zarqa. Similar to agricultural workers in cluster 1B, they earn a relatively low income of JD 178 when compared to other clusters. When likened to their male counterparts, women are easier to formalize; 69 percent of all women with similar characteristics as cluster 2B are found to be formal.

Service and sales workers: Cluster 3B includes women with high education but working in the low productivity wholesale and trade sector. There is clearly an education mismatch, where these women have no choice but to become informal, working as sales and service workers, and below their educational qualifications. Women in this cluster work the most hours in registered micro as well as medium-sized firms. Three-fourths (75 percent) of these women work in Amman and Zarqa. They also tend to be easy to formalize, as 70 percent of workers with similar characteristics are formal.

Elementary occupations: Cluster 4B includes women in elementary occupations,[29] employed across all sectors and firm sizes, including large firms.

High-skilled workers: Cluster 5B includes highly educated women working as professionals in high-skill sectors, such as education and human health. They are the highest earners, working mainly in Amman, Irbid, and Zarqa. This cluster is also easy to formalize and is the largest cluster, comprising 32 percent of waged informal Jordanian women in the private sector. Covering workers under this cluster may also be a quick win if the right policies are in place.

High-skilled workers in the less populated governorates: Cluster 6B comprises the highly educated women who are not concentrated in the three most populated governorates. They comprise 22 percent of waged informal Jordanian women in the private sector, and thus, similarly to the case of Jordanian men, it is important that local governments be able to reach those informal women.

It is remarkable that for female workers, unlike for male workers, for all clusters except cluster 1, the formality share is high, meaning that there are many women employed in formal jobs having similar characteristics to the informal workers in the clusters. The average wage premium between formal and informal women within each cluster tends to be lower than that of men.

Jordanian men who are self-employed or employers

Table 23 below demonstrates clusters of Jordanian men who are self-employed or employers. The clusters are described below.

Agricultural workers: Cluster 1C includes mainly own-account agricultural men with low education, and working farms that are not registered. Similar to waged employees (clusters 1A and 1B), it is the smallest cluster as well, comprising 6 percent of informal self-employed or employers.

***Low-skilled workers in the less populated governorates*:** Cluster 2C includes men with low education, mainly self-employed in services and sales occupations and as machine operators. They are located across the country. Cluster 2C is the largest cluster, comprising 39 percent of informal self-employed or employers.

Highly educated workers: Cluster 3C includes highly educated men working across occupations, including the highly skilled ones. Half of the men in cluster 3C are employers.

29. Occupations involving routine and simple tasks.

TABLE 23. Clusters of informal Jordanian self-employed men or employers in the private sector

Variable	Cluster 1C (6%) *Agricultural workers*	Cluster 2C (39%) *Low-skilled workers in the less populated governorates*	Cluster 3C (16%) *Highly educated workers*	Cluster 4C (23%) *Service and sales workers*	Cluster 5C (12%) *Crafts and related trade workers*	Cluster 6C (4%) *High-skilled workers*
Education	Low	Low	High	Medium	Low	High
Average age	46	42	44	43	41	47
Occupation	Skilled agriculture	Service and sales, machine operators	1/2 in high-skilled occupations	Service and sales	Crafts and related trade	Professionals
Sector	Agriculture	Trade and transportation	All sectors	Trade	Construction, manufacturing	Professional, scientific, and technical activities
Governorate	2/3 in less populated governorates	2/3 in less populated governorates	3 most populated governorates: Amman, Irbid, Zarqa	3 most populated governorates: Amman, Irbid, Zarqa	3 most populated governorates: Amman, Irbid, Zarqa	3 most populated governorates: Amman, Irbid, Zarqa
Firm size	Micro	Micro	3/4 micro	Micro	Micro	Micro
Firm registration	Mostly no	Split evenly	Mostly yes	Mostly yes	Mostly no	Mostly yes
Workplace	Farms	Offices, transportation vehicles	Offices	Offices	Offices, client homes	Offices
Type of employment	Mostly temporary	Mostly temporary	Half temporary	Mostly temporary	Mostly temporary	Mostly temporary
Working hours	Work the fewest hours			Work the most hours		
Share of formal workers with similar characteristics	All informal					

Service and sales workers: Cluster 4C mainly includes workers in trade businesses. They work the most hours compared to other self-employed or employers.

Crafts and related trades workers: Cluster 5C mainly includes self-employed workers with low education in the construction and manufacturing sectors in firms that are not commercially registered.

High-skilled workers: Similar to cluster 3C, the men in cluster 6C are highly educated; however, they are mainly concentrated in professional activities. They may also have significant work experience, as the average age is 47. However, the cluster is very small, and therefore targeting this profile may not impact informality significantly.

Waged non-Jordanian men in the private sector

Table 24 below gives an overview of clusters of waged non-Jordanian men in the private sector.

Service and sales Egyptian workers: Cluster 1D includes mainly Egyptians with relatively high education working in the administration sector in Amman. They work in micro firms, half of which are not registered. They all have work permits, work the most hours, and also earn the highest income among all clusters. These workers make up 9 percent of informal non-Jordanian men. Even though many non-Jordanians in cluster 1D have a high education and have obtained work permits, just 1 percent of non-Jordanians with similar characteristics were found to be formal.

Agricultural Egyptian workers: Cluster 2D comprises mainly Egyptian agricultural workers. Half of them are located in Balqa. They work on micro-farms, half of which are not registered. These workers, too, have work permits. Egyptians in agriculture total 11 percent of informal non-Jordanian men, contrary to the misconception that much of the informality is prevalent among the agricultural workers, especially for non-Jordanians.

Craft and related trades Syrian workers: Cluster 3D includes all Syrian workers with low skills and education, 40 percent of whom are employed in the construction sector. They are the lowest earners and work the fewest hours. They work mainly in unregistered micro firms and only half of them have work permits allowing them to legally be employed in the country. This cluster is larger than the rest, as Syrians in unregistered firms comprise 45 percent of informal non-Jordanian men.

Semi-skilled workers in registered micro firms: Cluster 4D includes the semi-skilled workers of Egyptian or Syrian nationalities, mainly working in registered micro firms. They have work permits and are working in sales and craft-related occupations in low productivity sectors. Around three-fourths (75 percent) of non-Jordanians in cluster 4D work in the less populated governorates of Jordan. They comprise 23 percent of informal non-Jordanian men.

Semi-skilled workers in registered medium and large firms: Cluster 5D includes semi-skilled workers of Egyptian or Syrian nationalities, mainly working in registered medium and large firms in Amman, Balqa, and Zarqa. They have work permits, and similar to those in cluster 4D, work in sales and craft-related occupations in low productivity sectors. Cluster 5D is small though, as most non-Jordanians work in micro firms.

High-skilled white-collar workers in registered firms: Cluster 6D includes the highly educated non-Jordanians employed in registered businesses, two-thirds of which are micro firms. One-third (33 percent) of cluster 6D workers are professionals and clerks. They are of all nationalities. It is, however, a very small cluster, comprising only 4 percent of informal non-Jordanian men.

The cluster analysis can be a powerful tool to help target policies to groups of workers sharing similar characteristics and to groups with greater ease of formalization. This section's cluster analysis defines a series of groups of workers that share similar features, including their skill level, where they work, and capacity to save. Policy makers can use these clusters to improve the targeting of instruments. In particular, these clusters indicate to policy makers which policies could work for given clusters and thereby support the design of new interventions. For example, the wage premium between the informal and formal sectors and average earnings estimated for each cluster may indicate the ability of workers to save and contribute. The skill level may also signal workers' financial literacy and their ability to understand the long-term benefits from saving and being covered against shocks. Firm size may denote the government's ability to reach establishments and workers and enforce its regulations.

TABLE 24. Clusters of informal waged non-Jordanian men employed in the private sector

Variable	Cluster 1D (9%) *Service and sales Egyptian workers*	Cluster 2D (11%) *Agricultural Egyptian workers*	Cluster 3D (45%) *Craft and related trade Syrian workers*	Cluster 4D (23%) *Semi-skilled workers in registered micro firms*	Cluster 5D (7%) *Semi-skilled workers in registered medium and large firms*	Cluster 6D (4%) *High-skilled white-collar workers in registered firms*
Education	High	Medium	Low	Medium	Medium	High
Average Age	37	38	33	34	33	35
Occupation	Service and sales	Skilled agriculture	Crafts and related trade	Service and sales, crafts related trade	Service and sales, crafts related trade skilled occupations	Mixture, with 1/3 working as professionals, clerks
Sector	Administration	Agriculture	2/5 in construction	Low productivity sectors	Low productivity sectors	All sectors
Governorate	Amman	Half in Balqa	Half in Amman, Mafraq	Across all governorates	3/4 in Amman, Balqa, Zarqa	Half in Amman, Irbid, Tafileh
Firm size	Micro	Micro	Micro	Micro	Medium and large	2/3 micro, rest SMEs
Firm registration	Split evenly	Split evenly	Mostly no	Mostly yes	Mostly yes	Mostly yes
Earnings: Average monthly wages	Highest earners JD 263	JD 240	Lowest earners JD 152	JD 213	JD 224	JD 232
Workplace	Offices, client homes, attached structures	Farms	Offices, client homes, construction sites	Offices, farms	Offices, client homes, farms	Offices. construction sites
Type of employment	Mostly temporary	Mostly temporary	Mostly temporary	Mostly temporary	Mostly temporary	Mostly temporary
Working hours	Work the most hours		Work the fewest hours			
Nationality	Mostly Egyptians	Mostly Egyptians	Mostly Syrians	Split evenly between Syrians and Egyptians	Split evenly between Syrians and Egyptians	1/4 Egyptians, 1/2 Syrians, 1/4 all other nationalities
Work permits	Yes	Yes	Split evenly	Mostly yes	Mostly yes	Mostly yes
Share of formal workers with similar characteristics	**1%** *Hardest to formalize*	2%	4%	15%	21%	**27%** *Easiest to formalize*
Average wage premium between formal and informal sectors	JD 43	JD 176	JD 116	JD 85	JD 100	JD 87

3

Policy Recommendations for Extending Social Protection Coverage

The policy objective is to extend social insurance coverage and enhance the protection of workers against various risks in the context of a financially sustainable system. Striking a balance between targeting policies (as specific as possible) to overcome the barriers to access to social protection, and keeping the system simple to avoid its fragmentation, is a difficult task, requiring in-depth discussion as policies are explored. Jordan also needs to strike a balance between the actions and incentives to better protect workers against risks and the sustainability of the system. A number of policy recommendations below aim at encouraging formalization among workers whose current job can be formalized and helping workers in jobs that can't be formalized, to find better jobs in the medium and long term, while offering them alternative protection mechanisms in the short term.

Long-term solutions

In the long run, productivity growth leads to higher wages, which are for many a prerequisite for social protection. Many informal workers in Jordan are unable to join any social protection scheme—whether the mandatory option or any voluntary scheme—simply because their wages are so low that their disposable income makes social protection contributions prohibitive. Wages for those informal workers hold the key to their ability to join any social protection scheme. However, with an oversupply of labor partly due to the influx of refugees, the only way to

increase wages is for productivity to rise.[30] Thus, formal jobs that protect workers against shocks will only be available if workers are employed by productive firms.

Productivity increases in firms will stem from introducing capital. Such capital deepening in the economy requires increased access to and reduction in the cost of technology, such as promoting venture capital and other approaches to financing.[31] This would, in turn, lead to an increase in the demand for workers having the skills to utilize that technology and requiring the benefits of formal employment. However, a reskilling of the workforce is needed to match the greater importance of capital in firms' processes. Toward that end, one of the key pillars in the government's Five-Year Reform Matrix (2018–2024) is to promote investment and export competitiveness (Table 25). To enhance skills, the government also passed a law in 2019 to establish the Technical Vocational and Skills Development Commission (TVSDC). It is planning as well to enforce financial and administrative autonomy to the Sector Skills Councils within that law (Table 25).

Developing financial sector institutions is also crucial for greater productivity as it can deliver larger financing for firms. Deepening the financial sector is essential to improve access to finance, particularly for SMEs. Data indicates a positive association between stronger regulation and financial infrastructure, as well as between stronger regulation and higher financing (Kumar 2017). One aspect of this relationship is the positive link between creditor rights and access to finance. Similarly, institutions contribute to financing: the probability of obtaining bank loans is higher in countries with credit bureaus. Financial development also helps SMEs growth by creating a deeper sector that offers more financial instruments (such as asset-based financing, factoring, and leasing, among others) at lower interest rates. Greater financing availability can allow firms to invest in capital and make their workers more productive, which can result in higher wages and ultimately enhanced social protection.

Providing incentives and policies that encourage firm growth may also lead to higher productivity, and hence more formal jobs. Smaller firms, and particularly micro firms, are typically less productive and, therefore, pay lower wages and ultimately are responsible for the lion's share of informality. As such, providing options that are currently not available in Jordan for workers in firms of less than five workers may boost growth. Options that could assist in building the number of formal jobs in Jordan include exploring a range of changes to the business and regulatory environment for micro and small firms, and making financing available for existing firms to grow, rather than focusing only on funding for start-ups .

Even with an increase in productivity and wages in the private sector, ensuring equal pay for similar skills regardless of nationality is an important policy guideline to improve efficiency. Jordan's social protection system must change its regulations and upgrade its enforcement capabilities to ensure that domestic and foreign workers are awarded the same pay when they deliver the same type of work. For example, currently, Jordan has a two-tier minimum wage system, with the statutory minimum wage higher for Jordanians (JD 260 in 2020). Ensuring equal pay is important not only for equity reasons for

30. For example, like in many OECD countries, wages for U.S. workers respond to productivity increases (Anderson 2007). Since the 1990s, workers' average hourly earnings and total compensation per hour have increased in line with increases in productivity in non-farming businesses. A number of developing countries exhibit the same relationship (Merotto, Weber, and Aterido 2018).

31. Other approaches to financing include: (i) asset-based financing, (ii) state guarantees, (iii) tax incentives, (iv) generous grace period, (v) factoring, (vi) equity-based financing, (vii) extensive use of SCIs, or (viii) leasing.

foreign workers but also for efficiency reasons. The lack of a level playing field leads to firms opting for foreign workers willing to work informally and at lower pay than nationals. That discrimination limits competition between Jordanians and non-Jordanians. With less competition, firms thrive on inefficiency, leading to low productivity growth with subsequent lower wages. Thus, leveling the playing field across all nationalities is paramount for equity and efficiency reasons.

Finally, leveling the playing field between men and women improves women's labor force participation rate, leading potentially to more formal employment. The majority of informal workers are men; however, the bulk of inactive working age people are women. Inactive individuals tend to persist in this employment status, partly due to a lack of other options (see Table 16 above). Enacting policies to improve women's participation in the labor force may increase the coverage base, by helping women transition from inactivity to formal private sector employment. This would entail reducing discrimination in working conditions and changing regulations to support women's employment in the private sector. Jordan has begun making important strides toward leveling the playing field between men and women. The government recently enacted a new regulation allowing flexible working arrangements for employees, which under the new bylaws, depending on the sector, would be subject to social security, with voluntary reduced contribution rates.[32] Additionally, it introduced a provision prohibiting discrimination based on gender in obtaining credit through the Central Bank's instructions regarding dealing with clients fairly and transparently. An instruction has been enacted as well to expand the modalities for the provision of workplace-based childcare services, in accordance with Article 72b of the Labor Law.[33] Finally, the government is planning on establishing a hotline and a portal for receiving workplace sexual harassment complaints in a confidential and effective manner. It also committed to remove occupational, sector, and other restrictions to women in the workplace so as to ensure equal access to the labor market (Table 25).

32. A companion paper "Voluntary Savings Schemes to Protect Informal Workers in Jordan" (Rother et al. 2022) provides more details on the new bylaws.

33. Article 72 of the Labor Law states that "An employer who employs at least twenty married female workers must prepare a suitable place in the custody of a qualified nanny to take care of the children of female workers whose age is less than four years, provided that the number of them is not less than ten."

TABLE 25. Government policies in Jordan and areas of opportunity

Opportunities	Government actions	Additional interventions
	Leveling the playing field	
Increasing productivity growth in the economy	Passed a law in 2019 to establish the Technical Vocational and Skills Development Commission (TVSDC).	Capital deepening to increase firm productivity leading to higher wages and a greater likelihood for jobs to be formal.
Leveling the playing field across all nationalities	Enacted instructions allowing high-skilled foreigners to work in occupations and sectors previously restricted to them (2019).	Ensure that domestic and foreign workers are awarded the same pay when they deliver the same type of work. For example, unify minimum wages.
Leveling the playing field between men and women	• Introduced a provision prohibiting discrimination based on gender in obtaining credit through the Central Bank's instructions. • Expanded the modalities for the provision of workplace-based childcare services. • The government is planning on establishing a hotline and portal for receiving workplace sexual harassment complaints. • It also committed to removing occupational, sector, and other restrictions to women in the workplace so as to ensure equal access to the labor market. • Allowed flexible working arrangements for employees. • Committed to update the passport application form to equalize requirements and documents to apply for a passport for women and men. • Amended Social Security Law allowing the Social Security Corporation to use 25% of the maternity fund resources for maternity-related social protection programs.	Reducing discrimination in working conditions and changing regulations to support women's employment in the private sector.
	Ensuring regulations are effectively applied	
Improving inspection	The Government of Jordan has committed to update inspections and implement a National Integrated Inspection Management System.	Improving information systems, generating more data and data analytics, better training, and expanding the number of inspectors.
Promoting knowledge and compliance with the law		• Developing an adequate communication strategy. • Continuous coordination with social protection agencies.
Improving administrative processes for coverage	Improvements in electronic payment mechanisms in the past five years and integrating SSC's platform into these ePayment platforms to collect contributions.	• Simplifying enrollment processes. • Further enhancing e-platforms. • Ensuring wage protection through digital payments.
Ensuring flexible labor markets	• Introduced flexible work in the labor bylaws, then enacted instructions on flexible work with minimum wage rates by unit of hours. • Enacted instructions that recognize pensions contributions of workers under flexible work arrangements. • Committed to amend the flexible work bylaw (22/2017) to facilitate wider implementation by providing sufficient flexibility to the employer and protecting workers right.	Compliance could improve if labor market regulations are more flexible, making it easier for firms to hire and dismiss formal workers. Adopting a strategy based on flexicurity may lower firms' costs from hiring formal workers.

(Continued next page)

TABLE 25 (continued)

Opportunities	Government actions	Additional interventions
	Providing incentives to formalize	
Encourage firm growth	• Committed to cancel the requirement to deposit 50% of the company's startup capital during the registration process (2022). • Implemented various measures to reduce business costs and improve regulatory quality, including: canceling the steps of obtaining approvals for water, electricity, and telecommunication authorities as part of obtaining construction permits for businesses; extending the validity period of occupancy permits; and issuing a decision to reduce the property transfer tax and the land sale tax.	Smaller firms, and particularly micro firms, are typically less productive and, therefore, pay lower wages and ultimately are responsible for the lion's share of informality. Extending flexicurity to workers in micro firms, exploring a range of changes to the business and regulatory environment for these firms, and making financing available for existing firms to grow, rather than focusing only on funding for startups, could all assist in building the number of formal jobs in Jordan.
Providing incentives to firms	• Decreasing contribution rates—which comes at a cost of lower benefit adequacy and may jeopardize financial sustainability. • Establishing the "Golden List Firms," providing perks to firms to comply.	Assessing the "Golden List Firms" intervention and providing additional perks to firms.
Providing incentives to workers	Decreasing contribution rates but that comes at a cost of lower benefit adequacy and may jeopardize financial sustainability.	Additional products and services offered to individuals based on their needs (such as vehicle insurance), including access to short-term benefits.
Developing additional complementary schemes		Developing a new defined contribution VSS to improve benefit adequacy and protect workers in absence of lack of compliance with mandatory scheme.

Short-term and medium-term solutions

In the short and medium term and until more productive jobs are created, policies to protect workers against shocks are needed. The SSC has already implemented many measures aimed at improving formalization, achieving some progress; however, similar to other countries, long-term challenges remain, with Jordan still struggling to improve coverage rates. This is because efforts are aimed at workers employed in jobs that can potentially be formalized. The measures remain ineffective as protection for informal workers in jobs that cannot be formalized (Kuddo, Robalino, and Weber 2015), such as those employed in micro firms and hence comprising most of the informal workers. Thus, the recommendations offered below aim at both improving on the current SSC measures to encourage formalization among workers whose current job can be formalized, and on proposing alternative protection mechanisms for workers employed in jobs that cannot be formalized.

Encouraging formalization among workers whose current job can be formalized

Policies that ensure labor regulations are effectively applied are needed to improve formalization efforts for workers whose jobs can be formalized, namely those employed in medium and large firms. These policies may be successful for high-skilled clusters and for women as they are employed in relatively large firms (Tables 26 and 27).

TABLE 26. Policies by cluster of waged Jordanian men

	Cluster 1A (4%) *Agricultural workers*	**Cluster 2A (18%)** *Service and sales workers*	**Cluster 3A (15%)** *Crafts and related trade workers*	**Cluster 4A (10%)** *Plant and machine operators*	**Cluster 5A (40%)** *Semi-skilled workers in the less populated governorates*	**Cluster 6A (13%)** *High-skilled workers*
Description						
Sector	Agriculture	Trade	Construction and manufacturing	Transportation	Low productivity sectors	All sectors including administration and professional activities
Firm size	SMEs	Micro firms	Micro firms	Micro firms	SMEs	Including large firms
Capacity to save	Lowest earners with average monthly wage of JD 201; formality premium highest at JD 136.	Average monthly wage JD 249; formality premium JD 109.	Average monthly wage JD 214; formality premium JD 115.	Average monthly wage JD 238; formality premium JD 83.	Average monthly wage JD 233; formality premium JD 126.	Highest earners with average monthly wage JD 321; formality premium JD 75.
Policies						
Ensuring regulation is effectively applied	Enforcement mechanisms may not work as workers are in rural areas, in farms.	Enforcement mechanisms may not work as workers are in micro firms.	Enforcement mechanisms may not work as workers are in micro firms; half are not registered.	Enforcement mechanisms may not work as workers are in micro firms.	Intensify communication and outreach campaigns to promote knowledge and compliance, and simplify registration procedures in remote governorates.	Strengthen enforcement mechanisms.
Providing incentives	Offer VSS with subsidized support to provide them with minimal protection.	Offer VSS with incentives to contribute at higher levels then the minimal level, as they have the capacity to contribute.	Offer VSS with incentives to contribute at least at the minimal level, with the option of subsidized support.	Offer VSS with incentives to contribute and access to products such as housing and vehicle subsidized credit, using a defined contribution component as collateral or vehicle insurance.	Offer VSS with incentives to contribute at the minimal level to complement mandatory schemes and improve adequacy, especially with new SSC bylaws that allow reduction of mandatory contribution rates with lower benefits.	Offer VSS incentives for higher contribution rates, as the capacity to save is high. Complements mandatory schemes and offers access to medium- and long-term savings.

Enforcing formal employment regulation requires more effort beyond formalizing firms. Business formalization does not necessarily equate to more formal jobs, so policies that aim to increase business registration will not, on their own, be successful in moving jobs from informality to formality. The analysis shows that 75 percent of Jordanian waged informal workers are regular employees employed in firms with commercial registration. These workers are bound by social security regulations, but there is limited enforcement of policies to improve formalization.

TABLE 27. Policies by cluster of waged Jordanian women

	Cluster 1B (5%) *Agricultural workers*	**Cluster 2B (9%)** *Crafts and related trade workers*	**Cluster 3B (15%)** *Service and sales workers*	**Cluster 4B (17%)** *Elementary occupations*	**Cluster 5B (32%)** *High-skilled workers*	**Cluster 6B (22%)** *High-skilled workers in the less populated governorates*
Description						
Sector	Agriculture	Manufacturing	Trade	All sectors	Education and human health	All sectors including administration and professional activities
Firm size	SMEs	Micro firms	Micro and medium firms	All firm sizes including large firms	All firm sizes including large firms	All firm sizes including large firms
Capacity to save	Lowest earners with average monthly wage of JD 76; formality premium highest at JD 127.	Average monthly wage JD 178; formality premium JD 111.	Average monthly wage JD 224; formality premium JD 98.	Average monthly wage JD 202; formality premium JD 68.	Average monthly wage JD 246; formality premium JD 91.	Average monthly wage of JD 219; formality premium JD 43.
Policies						
Ensuring regulation is effectively applied	Enforcement mechanisms may not work as workers are in rural areas, in farms.	Enforcement mechanisms may not work as workers are in micro firms.	Strengthen enforcement mechanisms.	Strengthen enforcement mechanisms.	Strengthen enforcement mechanisms.	Intensify outreach campaigns to promote knowledge and compliance, and simplify registration procedures in remote governorates.
Providing incentives	Offer VSS with subsidized support to provide them with minimal protection.	Offer VSS with incentives to contribute at least at the minimal level, with the option of subsidized support.	Offer VSS to complement mandatory scheme.	Offer VSS to complement mandatory scheme.	Offer VSS incentives for higher contribution rates, as the capacity to save is high. Complements mandatory schemes and offers access to medium- and long-term savings.	Offer VSS incentives for higher contribution rates as the capacity to save is high. Complements mandatory schemes and offers access to medium- and long-term savings.

For better enforcement, inspection requires improved information systems, more data and data analytics, better training, and an expansion in the number of inspectors. The first step in strengthening enforcement mechanisms is providing the necessary training and tools that support compliance inspectors. The second step is to redesign the system to accommodate preventive measures; such a redesign would allow inspectors to address shortcomings at the firm level, providing information and support on how to best comply with social security regulations, so that the compliance system can address the root causes of noncompliance. Ultimately, if employers continue to infringe regulations, the system should enforce rules with effective and deterrent sanctions. Finally, the system should also include dispute-resolution mechanisms. The Government of Jordan has committed, in the Five-Year Reform Matrix, to update and expand the inspection criteria to include elements of the Code of Conduct in the Workplace and Wage Equity as per Labor Law. The Ministry of Labor will also implement a national Integrated Inspection

TABLE 28. Policies by cluster of waged non-Jordanian men

	Cluster 1D (9%) *Service and sales Egyptian workers*	**Cluster 2D (11%)** *Agricultural Egyptian workers*	**Cluster 3D (45%)** *Craft and related trade Syrian workers*	**Cluster 4D (23%)** *Semi-skilled workers in registered micro firms*	**Cluster 5D (7%)** *Semi-skilled workers in registered medium and large firms*	**Cluster 6D (4%)** *High-skilled white-collar workers in registered firms*
Description						
Sector	Administration	Agriculture	Some in construction sector	Low productivity sectors	Low productivity sectors	All sectors for professional activities
Firm size	Micro firms, half of which are not registered	Micro firms, half of which are not registered	Micro firms, mostly registered	Micro firms, mostly registered	Medium and large firms.	Mostly micro firms
Capacity to save	Highest earners with average monthly wage of JD 263; formality premium at JD 43; most have work permits.	Average monthly wage JD 240; formality premium JD 176; most have work permits.	Average monthly wage JD 152; formality premium JD 116; half have work permits.	Average monthly wage JD 213; formality premium JD 85; most have work permits.	Average monthly wage JD 224; formality premium JD 100; most have work permits.	Average monthly wage of JD 232; formality premium JD 87; most have work permits.
Policies						
Ensuring regulation is effectively applied	Enforcement mechanisms may not work as workers are in micro firms.	Enforcement mechanisms may not work as workers are in rural areas, in farms.	Enforcement mechanisms may not work as workers are in micro firms. Also, half are not bound by SSC regulations since they do not have work permits.	Enforcement mechanisms may not work as workers are in micro firms.	Strengthen enforcement mechanisms as many work in medium and large firms, having work permits as well.	Enforcement mechanisms may not work as workers are in micro firms and are not visible even though highly skilled.
Providing incentives	Offer VSS incentives for higher contribution rates as the capacity to save is high.	Offer VSS with incentives to contribute.	Offer VSS with incentives to contribute at least at the minimal level, with the option of subsidized support.	Offer VSS with incentives to contribute.	Offer VSS to complement the mandatory scheme.	Offer VSS incentives for higher contribution rates, as the capacity to save is high.

Management System that has been developed in accordance with the Inspection and Monitoring Law of 2017 (Table 25).

To be effective, enforcement could be selective. There is strong evidence that responsive regulation delivers better outcomes than uniform sanctioning of each and every violation (Balestra et al. 2018). Developing a framework that clearly states the boundaries of sanctions, but at the same time allows for the escalation of sanctions depending on the incidence of violation, is key to achieve a responsive system of regulation. Implementing the enforcing system with the capacity to escalate sanctions could also create a credible deterrence; the sanctions can be light enough to be used as needed, yet strong enough to outweigh potential profits from noncompliance.

Actively promoting compliance and attracting the informal workers to enroll and continue contributing is also key. Rather than assuming that knowledge and compliance with the law is a responsibility of the firm, promoting and supporting compliance should be a key priority and function of inspection and enforcement structures. Promoting compliance starts with legislation and the official mandates, but it also requires significant resources to develop and broadcast guidance and information. This should be particularly targeted to those with the most need to understand the information, such as informal workers in remote geographical areas. A responsive system of regulations should leverage a strong system for grievance redress and compliance complaints.

An adequate communication strategy needs to be established once the new bylaws by SSC are implemented. The new bylaws allow lower contribution rates and hence lower benefits.[34] This may create wrong expectations that individuals will receive the same benefits as those who are making regular, full formal sector contributions. Communication messages should be responsive to the characteristics of each cluster to ensure that low-skilled workers are aware of the expected outcome of each contributory rate.

34. See a companion paper, "Voluntary Savings Schemes to Protect Informal Workers in Jordan," for more details on the new bylaws.

Outreach requires a significant effort in coordinating social protection agencies, regulatory bodies, and ministries to work toward strategies in reaching individuals. Establishing clear communication mechanisms and specialized printed and electronic material to provide information is crucial to building trust. Members are likely to have greater confidence in information from the channels they trust; in this sense, leveraging chambers, workers associations, and other nongovernmental agencies can build up member participation in greater numbers. Continuous efforts at communication will likely be necessary to build trust not only to enroll but also to continue to contribute. SSC efforts have already identified potential channels to get workers into the current scheme. For example, SSC has undertaken efforts to establish linkages with the transport authority (taxi drivers), thereby targeting cluster 4A (Plant and machine operators) that forms 10 percent of informal Jordanian employees, and a share of cluster 2C (Low-skilled workers in the less populated governorates) that forms 39 percent of self-employed Jordanians. SSC also has reached out to the Ministry of Digital Economy for the IT sector, which will help to target the high-skilled clusters. More detailed analysis of the configuration of the linkages would likely provide a greater overarching outreach strategy that encompasses different clusters of workers in the informal sector.

Compliance can also be achieved by simplifying enrollment processes, which would require the administrative readiness to do so. Compliance with the law may be low because enrollment processes are too complex or financial inclusion within the country is limited. Enrollment processes should be streamlined, with a focus on reducing, if not eliminating, data requirements for individuals subject to and enrolling into the scheme. Leveraging national identification numbers and simply referencing data from the national identification registries, and potentially identifying individuals through biometric methods, would provide accurate information at the time of enrollment. In some cases, individuals may be allowed easy enrollment into the scheme, while requiring more complete information, like beneficiaries or other data, as they become familiar with the scheme. Further, new contribution mechanisms may need to be put in place to facilitate contributions, as a significant portion of the population remains without a formal bank account (33.1 percent of individuals have a bank account[35]). Jordan has made significant improvements in electronic payment mechanisms in the past five years, introducing Jo-Net, Efawateercom Payments, and JoMoPay. SSC's platform is reported to be integrated into these ePayment platforms to collect contributions. However, a large share of the population remains without access to these readily available contribution mechanisms. For example, JoMoPay reports having 1.2 million mobile wallets,[36] which is not enough compared to the overall population. As such, a review of the way JoMoPay can be integrated to facilitate these contributions, including potentially standing orders on the wallet accounts, may be needed. A correlating transformation plan for ensuring wage protection through digital payments should be developed by the government, as outlined in the Jordan Five-Year Reform Matrix, 2018–2024 (Table 25). In addition, the Council of Ministers is planning to issue a decision in 2021 requiring all government agencies to coordinate all digital transformation projects with the Ministry of Digital Economy and Entrepreneurship. While this will help cover the compliance aspect of eased access, improving the digital economy infrastructure remains a key element.

35. National Financial Inclusion Strategy 2018–2020.
36. JoMoPay October 2020 report: https://jopacc.com/ebv4.0/root_storage/en/eb_list_page/jomopay_(%D9%90oct)_english.pdf

Compliance could also improve if labor market regulations were more flexible, making it easier for firms to hire and dismiss formal workers. Adopting a strategy based on flexicurity may lower firms' costs from hiring formal workers. The current Labor Law on dismissal of workers is relatively rigid. It prohibits abusive dismissals, stating that "if a worker institutes judicial proceedings within sixty days of his dismissal and a competent court finds the dismissal arbitrary and in violation of the provisions of this law, the employer may be ordered to reinstate the worker or pay him damages." The law also requires notification of relevant authorities when redundancies are made. Defense Order 6, Article 8, promulgated during the COVID-19 crisis, further prohibits firms from dismissing workers. A flexicurity model would allow the relaxation of regulation that limits the ability of employers in firing and hiring (Box 1), while providing protection at the same time to individuals who are dismissed. In Jordan, flexicurity requires addressing pressing issues in the law that prevent a flexible labor market, such as the large costs implied in termination of contracts. Amendments are needed to the flexible work bylaw (22/2017) to facilitate wider implementation by providing sufficient flexibility to the employer and protecting workers' rights.[37] However, a flexicurity approach depends on all agents (governments, employers, and trade unions) being interested in making the system work well (Packard et al. 2019).

Decreasing employment costs for firms may not lead to a proportional increase in formalization. International experience shows mixed results on the impact of reducing contribution rates on formalization. On average, a 10 percent reduction in contribution rates results in no more than a 3 percent increase in employment (Hamermesh 1993). From a pension system sustainability standpoint, this means that the loss in revenue from a 10 percent reduction is not fully compensated by the increase in formalization. A study of Colombia found that a 10 percent increase in payroll taxes lowered formal employment by 4–5 percent

37. The amendment provides specific definitions of flexible work (which were not available in the original bylaw). It also provides enhanced protection to workers by specifying the regulatory pillars of the flexible work contract as well as the rights and responsibilities of the employer and the worker. The original bylaw can be found at https://ammanchamber.org.jo/Uplaoded/PRNews/1731(2).pdf. The bylaw's amendment can be found at http://www.lob.jo/?v=1.14&url=ar/DraftDetails?DraftID:598,AddComment:0,PageIndex:1.

Box 1. Flexicurity in Denmark

The emergence of a new approach to social security in Europe aims at balancing flexibility for employers and income security for workers. The precursor is a Danish arrangement that emerged in the 1990s, which combines three key elements: (i) flexible hiring and firing laws, (ii) generous unemployment benefits, and (iii) active labor market programs. As a result of flexicurity, Denmark's position in the OECD Protection Legislation Index fell from 2.4 in 1983 to 1.5 in 2009, indicating more flexible hiring and firing regulations, while unemployment fell from 10 percent in 1993 to 3 percent in 2008. At the same time, unemployment insurance, financed by both contributions and taxes, covered around 80 percent of the labor force and provided up to four years of unemployment benefits. Flexicurity in Denmark also includes active labor market policies that assist, among other things, with job-search assistance and training.

Source: Arias and Sanchez-Paramo (2014).

(Kugler and Kugler 2009). Sweden implemented a large and long-lasting employer payroll tax rate cut, from 31 percent down to 15 percent for young workers, with positive effects on the employment rate of the targeted young workers of about 2–3 percentage points. These effects were stronger in credit-constrained firms (Saez, Schoefer, and Seim 2019).

Finally, enforcing regulations may not be sufficient to expand coverage; policies that provide incentives for firms to formalize their workers are also needed. Incentives can also be offered to employers to increase coverage of their workers and incentivize compliance. Toward that end, the Government of Jordan established the "Golden List Firms," where establishments within that list will be offered many perks, such as a waiver for bank guarantees when hiring foreign workers. To be eligible, a firm must demonstrate that it is compliant with all labor regulations, including covering its workers with social security. It is not clear to what extent the "Golden List Firms" program is incentivizing firms to comply with current regulations. However, the government, in its Five-Year Reform Matrix, 2018–2024, committed to assessing the current incentive system of the "Golden List Firms," making it more attractive and ensuring that the criteria for inclusion complies with the core labor standards in Jordan (Table 25). Supplementary benefits may be offered to firms to incentivize compliance, including, for example, preferential treatment within government procurement process.

Offering workers in jobs that can't be formalized alternative protection mechanisms

Formalization efforts may not be effective for a large cohort of informal workers due to difficulties in enforcing social security regulations. This cohort comprises regular workers who are employed in micro and small firms, or irregular workers, or the self-employed. Four out of the six analyzed clusters for Jordanian men include workers employed in micro firms, making it difficult for inspectors to identify these firms and enforce regulations (Table 26). The same applies for non-Jordanian men who are largely employed in micro firms (Table 28). As a consequence, mandating coverage of non-Jordanians with work permits in the SSC regulations may not significantly improve formality. Finally, around one-fourth of Jordanian informal workers are irregular, and 17.6 percent are self-employed in the private sector (Table 2), again limiting enforcement of regulations and identification of the income they earn.

A new, defined contribution Voluntary Savings Scheme (VSS) that would complement the current pension scheme may be offered to these workers as alternative or additional protection mechanisms against shocks. A VSS should be a key component of Jordan's social security system. Informal and irregular workers, as well as the self-employed, are often left out of Jordan's social protection system, remaining vulnerable to shocks (such as old age and unemployment). While some of those workers earn such a low income that they would not be able to contribute to any social insurance system, these workers would normally, due to their vulnerability, be the recipients of aid through social assistance programs. But for those workers employed informally beyond poverty levels and non-vulnerable, as well as those working irregularly and those working on their own (that is, self-employed), a complementary voluntary savings account could be an option to extend coverage in Jordan. The VSS may also be made available to workers in jobs that can be formalized as an additional protection mechanism to improve benefit adequacy and access to medium- and long-term savings. This would apply to high-skilled Jordanian men (Cluster 6a) and most women (Tables 26 and 27).

The VSS would thus be an additional component to the SSC mandatory scheme, helping improve adequacy for those who comply with the mandatory contributions and introduce incentives for the informal sector to enroll and contribute. With the potential new bylaws, SSC is allowing individuals to choose the tranche at which they will contribute (allowed tranches are 75, 50, 25, or 10 percent of the normal contribution). The proposal of the voluntary scheme adds to this design by introducing a voluntary component that would encourage the selection of the tranche based on the characteristics of the different clusters. Different benefits would then be offered depending on the level of contributions and selected contribution tranches.

Establishing additional incentives and offering new products and services is especially important in light of the new bylaws that reduce contribution rates, and as such, benefits as well. The benefits may be too small for individuals to take advantage of the pension system. Simply put, establishing bylaws to make contributions mandatory for individuals who are not bound by current regulation will not be enough to cover all informal sector workers and provide them with adequate pensions.

The packages of benefits (products and services) offered to individuals as part of the VSS would be tailored to clusters of informal workers based on their needs and capacity to save and contribute. SSC's efforts to extend coverage provide a solid ground floor from which informal sector workers and self-employed individuals can begin to be covered.

However, extending current benefits under the new bylaws may further SSC's efforts in broadening coverage and provide a more appealing product to workers in the different clusters. For instance, informal waged and self-employed Jordanians in clusters 4A and 2C, respectively, working as machine operators in the transportation sector, may be interested in a packaged offer that includes liability or other insurance for their vehicles as part of the contributions they make to social protection. For the clusters of women, offering childcare (with fiscal implications taken into account) can be an important incentive. For the highly educated, self-employed Jordanians in clusters 3C and 6C, access to low-interest micro-credit may be an incentive for them to contribute, especially if their capacity to contribute is higher than the low-skilled workers. For clusters where earnings are very low, other effective tools to enroll members may include monetary incentives, such as matching contributions for a short period of time, or other behavioral tools to encourage enrollment and contributions (Akbas et al. 2016). These clusters include workers, including Syrian refugees, in the agriculture, manufacturing, and construction sectors who may not have the capacity to save even if offered the option of a VSS, so subsidized support is needed to provide them with minimal protection (Tables 26, 27, and 28). However, including any form of subsidized pooled insurance policy requires a long-term fiscal viability analysis.

The packages of products and services offered as part of VSS would include short-term benefits as well, since they can attract longer contribution commitments. Extending social protection requires developing flexible mechanisms for low-paid informal workers with low or irregular capacity to make contributions. When workers accept informal employment under precarious conditions, they also often postpone caring for their future in order to meet immediate basic needs. Short-term benefits could help to attract informal workers to commit to long periods of contribution for pensions. Identifying these short-term benefits (for example, access to healthcare or insurance against income shocks) may provide some short-term certainty for individuals who may not be saving or contributing for retirement due to these short-term risks.

The importance of offering short-term benefits has been made clear during the COVID-19 crisis. During this crisis, short-term support has targeted over 15,000 individuals through SSC benefits,[38] providing significant relief to individuals who have lost income. The National Aid Fund in Jordan has also extended cash and supplementary support to an additional 150,000 families (where 50,000 households were added during 2020).[39] Further, right before the COVID-19 crisis, in March 2019, the SSC enacted regulations that allowed it to use 25 percent of the maternity fund resources for maternity-related social protection programs. There is therefore clearly a need for both some short-term assistance mechanisms and for a greater social protection structure to provide some medium-term protection to individuals.

Offering additional incentives to workers, whether in the form of short- or long-term benefits, implies catalyzing synergies across institutional products. Exploring synergies with different government agencies is needed, not only as outreach channels but as a way to identify products generally required by those individuals that could be part of the overall incentive structure. Not all products are likely to be provided by SSC (for example, vehicle insurance); other private parties could provide a pooled service for those who do not currently have access to important financial services. This would entail packaging those other services together with SSC.

38. COVID-19 Emergency Unemployment and Employment Stabilization Fund, August 2020.
39. COVID-19 Emergency Unemployment and Employment Stabilization Fund, August 2020.

Finally, when offering incentives, the Government of Jordan needs to pay special attention to the system's financial sustainability. SSC is already providing incentives to formalize by reducing the cost of contributions, particularly as a result of the health emergency triggered by COVID-19. Incentives, however, can compromise the financial sustainability of the system. Jordan could turn for lessons to the fiscal and financial hazards in pension systems around the world. The post-financial crisis European pension systems face the dual challenges of improving sustainability while maintaining adequacy. The challenge is different for other emerging economies with younger populations and smaller fiscal adjustment needs: improving pension adequacy and coverage while maintaining sustainability (Clements, Eich, and Gupta 2014). Jordan needs to make sure that any further incentives do not create a financial or fiscal sustainability risk that may compromise the system.

The proposed VSS, complementing the current SSC's mandatory scheme, will be the first scheme of its kind in the MENA region if implemented; however, it needs to be piloted first. As described above, the VSS would provide different levels of contributions paired with benefits specifically designed for the target population groups based on the cluster analysis. The companion paper to this study, "Voluntary Savings Schemes to Protect Informal Workers in Jordan," provides details on how such a voluntary scheme can work, making use of the statistical cluster analysis developed in this paper to propose alternative packages for different types of informal workers. The paper also stresses the importance of piloting the VSS, in order to ensure its successful implementation.

Going forward, VSSs will likely become even more relevant as employment practices change. While VSSs play an important role in improving benefit adequacy in a financially sustainable way, they are also fundamental in adapting social protection policies to the changing nature of jobs. Increasingly, non-standard forms of employment are emerging that are not covered by the traditional social insurance schemes, especially with the expansion of the gig economy (WDR 2019).

4

The Way Forward

Despite all the efforts to expand social insurance coverage in Jordan, an important share of the working population is still not covered by any social security scheme. Today the Jordanian social security system (administered by SSC) provides benefits to less than 50 percent of its total population for old age, disability and survivors, maternity, work injury, and unemployment insurance. Workers who are not covered by social security include both Jordanians and non-Jordanians. They are predominately male employees of low education working in micro firms, a significant share of which are commercially registered, and not just self-employed workers as might be expected.

Therefore, there is a clear need to rethink policy making. Reforming social insurance systems and introducing new instruments for coverage extension are necessary but complex undertakings. The aim is not to attract people to only register in a social security institution for short-term benefits, but to improve the coverage of good-quality pensions—where good quality means financially sustainable and affordable pensions that deliver adequate income in old age, in a way that is efficient in terms of costs, investment returns, and impact on the capital and labor markets.

When rethinking policy making, the heterogeneity of informal workers needs to be accounted for. The analysis in this report, including the cluster analysis, shows that informal workers are not homogeneous. Policies should thus be targeted to the specific needs of individuals while keeping the system simple. For instance, additional incentives provided to workers would be based on the characteristics of the cluster they belong to. Furthermore, workers' ability to comply with

mandatory coverage or the extent of their contribution to a voluntary scheme depends on their capacity to save, which varies from one cluster to another.

This report goes only so far in attempting to profile informal workers and subsequently recommending policies to address informality, as it is mainly reliant on supply-side data. A full and comprehensive demand-side diagnostic needs to be carried out to feed into a structured outreach strategy and determine the incentives offered to workers with the potential of a defined contribution scheme. Specialized market studies, surveys, and field focus groups could be established for the clusters identified in the previous section of the paper, facilitating a generalized review of the demand for the social protection product, as well as providing insight into the very specific needs of each of the clusters. The demand-side review may also provide insight on the strategies SSC could establish to reach each group of workers; understand the linkages that may be leveraged in order to identify key "compliance" points for those required to contribute; and understand how to maximize participation in a voluntary defined contribution scheme.

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Annexes

Annex A: Data and methodology

For the current report, two main sources of information were used. The first one is the Jordan Labor Market Panel Survey (JLMPS) 2016 (see DS 2016). This is a panel survey that provides retrospective information regarding respondents' current and past jobs, as well as some background information on their household and parents activities. The survey is nationally representative and has 33,450 registries. Nevertheless, depending on the type of exercise its being performed, the real sample (once missing values are removed) is 1,080 observations. The second source of information is the Labor Force Survey (LFS) 2018 (see DS 2018). With higher resolution then the JLMPS, this survey has 271,081 observations that collect the information of respondents on standardized labor force-related questions. Whereas the LFS 2018 has more observations and its more recent, there are several relevant questions linked to this work that are not available on it. In these cases, the results from the JLMPS 2016 were displayed. For all other cases, unless an explicit comparison needs to be done, the results displayed were on the LFS 2018, and, although not reported, similar exercises were performed on the JLMPS 2016 for robustness of the results.

While most of the quantitative analysis presented on the results emerge from crosstabulations and descriptive exercises, two advanced statistical processes have been done on the report. The first one, presented on Annex B, relates to a regression analysis performed to evaluate the preferences of workers for the public or the private sector. The second one, detailed in Annex C, describes the profiling methodology used to group the informal individuals into groups.

Annex B: Public versus private sector preferences

As part of the analysis regarding informality, it was important to evaluate the preferences of individuals to engage with the formal sector. For this reason, two exercises were performed.

The first exercise was based on the JLMPS 2016. In this case, the dependent variable is dichotomous, taking a value of one for those employed in the private sector but who prefer to work in the public sector. It takes a value of zero for those employed in the private sector but who prefer to work in the private sector. The explanatory variable "No social security" is a dummy variable that takes a value of one if a worker has no social security and zero otherwise. "Monthly wage" is the value of a worker's monthly wage. "Number of hours worked" is the number of hours worked per week. "No paid vacation" is a dummy variable that takes a value of one if a worker gets no paid vacation and zero otherwise. Similarly, "No health insurance from work" is a dummy variable that takes a value of one if a worker has no health insurance from work and zero otherwise. Regarding the sample size, it is limited to Jordanian workers in the private sector, yet the regression is estimated using JLMPS 2016 individual sample weights. Finally, the standard errors are estimated using Hubber/White robust standard errors.

TABLE B.1. Determinants of employment preferences: public vs. private sector

Variable	Value
Employment conditions	
No social security	0.12**
	(2.28)
Monthly wage	–5.24e-07
	(-1.05)
Number of hours worked	0.001
	(1.12)
No paid vacation	0.12***
	(2.59)
No health insurance from work	0.09*
	(1.73)
Other controls	
Age	Yes
Job skill requirements	Yes
Temporary vs. permanent, seasonal, or casual	Yes
Educational attainment	Yes
Sex	Yes
Place of residence (rural vs. urban)	Yes
Governorate	Yes
Type of occupation	Yes
Number of observations	1080

Source: JLMPS (2016).
Note: Figures in parentheses are t-statistics. *** p<0.01, ** p<0.05, and * p<0.1.

Complementing the previous exercise, the second regression is based on the LFS 2018 and aims to explore the determinants of informality. The results are based on estimating a linear probability model in which the dependent variable is dichotomous taking a value of one for formal workers and zero for informal workers. Column 1 presents the results for a parsimonious model controlling for workers' age. Column 2 adds marital status and governorate of residence, while column 3 presents the full model further controlling for educational attainment, sex, type of work contract, type of employment (permanent vs. temporary), type of occupation, and firm size. The reported coefficients are probability estimates of joining formal employment. Similar to the previous case, the regression is estimated using individual sample weights and the standard errors are estimated using Hubber/White robust standard errors.

TABLE B.2. Determinants of formality

Variable	1	2	3
Age groups			
25-49	0.1516***	0.1869***	0.0188*
	(14.04)	(15.43)	(1.83)
50-64	0.1474***	0.2015***	0.0245
	(9.46)	(11.3)	(1.64)
64+	0.1697***	0.2256***	-0.0053
	(3.66)	(4.76)	(-0.16)
Marital status			
Married		-0.0607***	0.0245
		(-6.15)	(2.95)
Educational attainment			
Secondary			0.0332**
			(2.35)
Tertiary			0.0183
			(1.25)
Gender			
Female			Female
			(3.27)
Type of contract	No	No	Yes
Permanent vs. temporary	No	No	Yes
Governorate	Yes	Yes	Yes
Type of occupation	No	No	Yes
Firm size	No	No	Yes
N	18286	18286	14802

Source: LFS (2018).
Note: Figures in parentheses are t-statistics. *** p<0.01, ** p<0.05, and * p<0.1.

Annex C: Statistical profiling of informality

Profiling strategy

The purpose of this methodological note is to develop the different steps taken to generate the statistical profiling strategy presented in the current research. As stated in the main text of the document, the strategy identifies groups of informal individuals who have similar traits, in order to support evidence-based policies that take into account these differences in the population and have a greater impact.

In order to develop this procedure, three steps are followed: data selection, data processing, and cluster analysis.

1. Data selection

Intrinsic to any profiling is the idea that the social dynamics—in this case related to informality—cluster and segregate individuals into niches that can be defined by the characteristics of the workers and of their jobs. Therefore, the first step of the profiling strategy is identifying those variables that characterize each market niche. For this purpose, the LFS 2018 was reviewed, and four groups of variables were selected:

Demographic characteristics: This group included their age, marital status, and socioeconomic status, where this last variable was approximated by using their current reported salary. It is also important to note that some individuals did not report their salary. Therefore, to avoid losing these observations, the wage value of these cases was fixed as 0 and an auxiliary dummy variable was created such that it takes values of 1 if the individuals reported their salaries, and 0 if they did not report it. Finally, for non-Jordanians, there were dummies created associated with their nationalities and possession of a work permit.

Individual skills: This dimension is approximated via the educational level of the individual. In this case, as the report of education is ordinal, the variable was transformed into a set of six dummies that allow the clusters to capture the hierarchy of the education levels. The first dummy assigned a value of 1 to all individuals who at least know how to read and write. The second dummy assigned a value of 1 to all individuals who at least completed primary studies. The third dummy assigned a value of 1 to all individuals who at least completed their preparatory studies. The fourth dummy assigned a value of 1 to all individuals who have technical and vocational education and training (TVET). The fifth dummy assigned a value of 1 to the individuals who at least completed secondary studies. Finally, the sixth dummy assigned a value of 1 to all individuals who have tertiary education. To give an example, an individual whose maximum education level was secondary will have values of 1 in dummies one, two, three, and five, and 0 in the rest.

Job characteristics: This dimension included dummies for industries and occupations (first levels of disaggregation, 9 for occupation, and 17 for industry). Besides these variables, two additional variables were created. The first one was the type of contract, which is a variable that distinguishes between temporary and permanent contracts. The second variable presents the number of hours worked by the individual.

Firm characteristics: The first variables of this group are dummies related to the governorate where the company is located. The second group is related to the size of the firm. It uses a set of 5 increasing dummy variables where the first dummy is designed for firms with at least 10 workers. The second dummy is designed for firms with at least 20 workers. The third dummy is designed for firms with at least 50 workers. The fourth dummy is designed for firms with at least 100 workers, and the fifth variable captures registries where the size of the firm was not available.

In this group of firm characteristics, there is also a dummy variable that identifies those firms registered with the commercial or tax authorities. Finally, there is also a variable that identifies those firms that keep written records or accounts.

Filtering by observations with complete registers on these variables, the sample size for Jordanians and non-Jordanians is presented in Table C.1.

2. Data processing

The second step of the profiling is the creation of the clusters. The procedure that will be described in the following text was performed, independently, for the following groups of independent individuals: male employed Jordanians, female employed Jordanians, male Jordanians that are employers or self-employed, and male employed non-Jordanians. The other options were not calculated due to their small sample size.

In order to develop this process, the variables were standardized (transformed to have mean 0 and standard deviation 1), so that the clustering process guarantees equal weights to all the variables. Robustness checks were developed by assessing different weighting strategies. For example, in one exercise done, the variables were standardized so the sample mean is 0 and the standard deviation is the semi-partial correlation of that variable with respect to formality (that is, the weights were proportional to the explanatory power that the variables have over the likelihood of being formal). However, these exercises produced similar qualitative results to the initial standardization, and therefore, under a parsimonious criterion, they are not displayed in this work.

Once the variables were standardized, a hierarchical Ward clustering was performed over the full set of variables. Different types of clustering were considered, including single linkage, complete linkage, and Ward linkage. However, once the results were analyzed, the strategy that produced more stable groups was the Ward linkage. For illustration, Figure C.1 presents the dendrogram obtained for male Jordanian workers.

The number of groups was fixed at six. This number came from the evaluation of multiple options based on the size of the clusters, the reduction of the variance within the clusters, and the capacity to design a reasonable number of policies to tackle the challenges of informality.

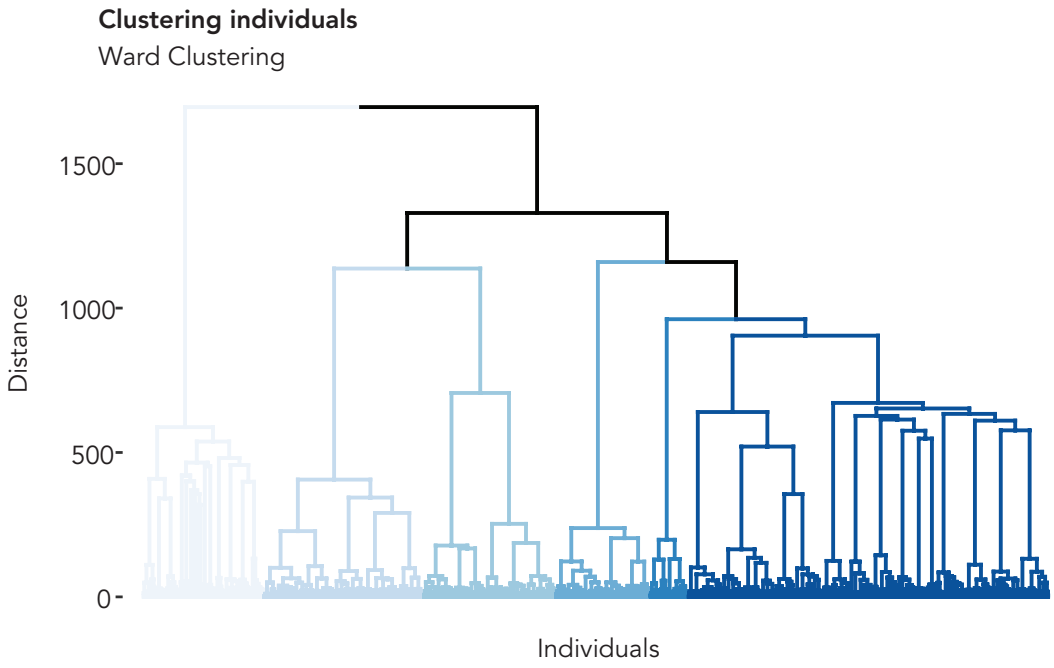
3. Degree of formalization by clusters

Once the clustering was performed, the next step is to evaluate how viable it is for the individuals of each cluster to become formalized. For this purpose, the conceptual strategy is construct a counterfactual individual for current formal workers to evaluate, which will be their cluster if they were informal. By doing this exercise,

TABLE C.1. Sample size used for the clustering

Nationality	Workers	Female	Male	Total
Jordanians	Employer	55	1,523	1,578
Jordanians	Self-employed	130	3,379	3,509
Jordanians	Waged worker	551	5,881	6,432
Non-Jordanians	Waged worker	89	2,410	2,499
Total general	825	13,193	14,018	

FIGURE C.1. Dendrogram for male Jordanian workers



and reviewing where formal workers allocate, the report evaluates how reasonable is for individuals in each cluster to become formalized. To develop this analysis, a Classification and Regression Tree (CART) was used to estimate the cluster that the formal individuals in the sample will belong to, if they are informal workers. The advantage of using this methodology is that it uses the current data structure and evaluates both the functional form of a prediction model as well as the variables that feed it, without the need of imposing specific requirements on the data (Hastie, Tibshirani, and Friedman 2001).

To implement the CART, the first stage was tuning the model, which was done using the informal workers and the clusters in which they were previously allocated. The number of nodes per leaf was selected to have a perfect fit (for example, a highly overfitted tree), guaranteeing that it is the smallest decision tree that can perfectly classify all informal workers in their assigned clusters. Once the tree has been tuned, a new sample based on the formal workers of the four corresponding clustering groups (for example, Jordanian male employees) is inputed into the model and the individuals are classified into the different informality clusters.

At this point, both the formal and informal workers of the relevant groups have been assigned to the corresponding clusters. Thence, the share of informal workers per cluster was calculated, and the clusters were labelled accordingly to the share of informality.

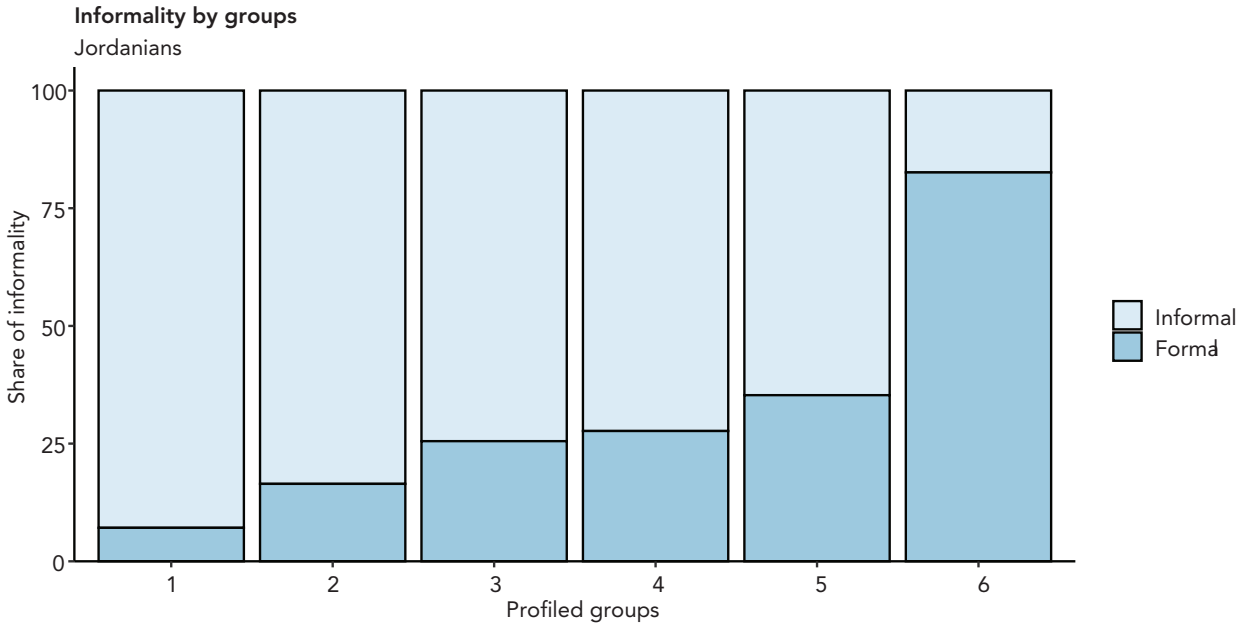
It is important to note that this procedure could not be performed on the group of self-employed and employers. In this case, the LFS 2018 does not present any information regarding their coverage by social security. However, from secondary information sources, which included the JLMPS 2016, the share of formality in these groups is minimal, so it was assumed that all the individuals in this group are informal, and the clusters are named aiming to match those with comparable characteristics in the other groups.

4. Detailed clustering results

After the labels were organized, each cluster was analyzed under the light of the variables defined in the first stage. By studying the distribution of values within and between clusters, an open process was done between technical and policy experts to identify the characteristics that define each of the groups and the corresponding policy measures that can be targeted to each of them. Finally, the last part of this section presents the detailed distribution of characteristics along with the different clusters. The following subsections present the main figures that support the evidence presented in the results of the profiling.

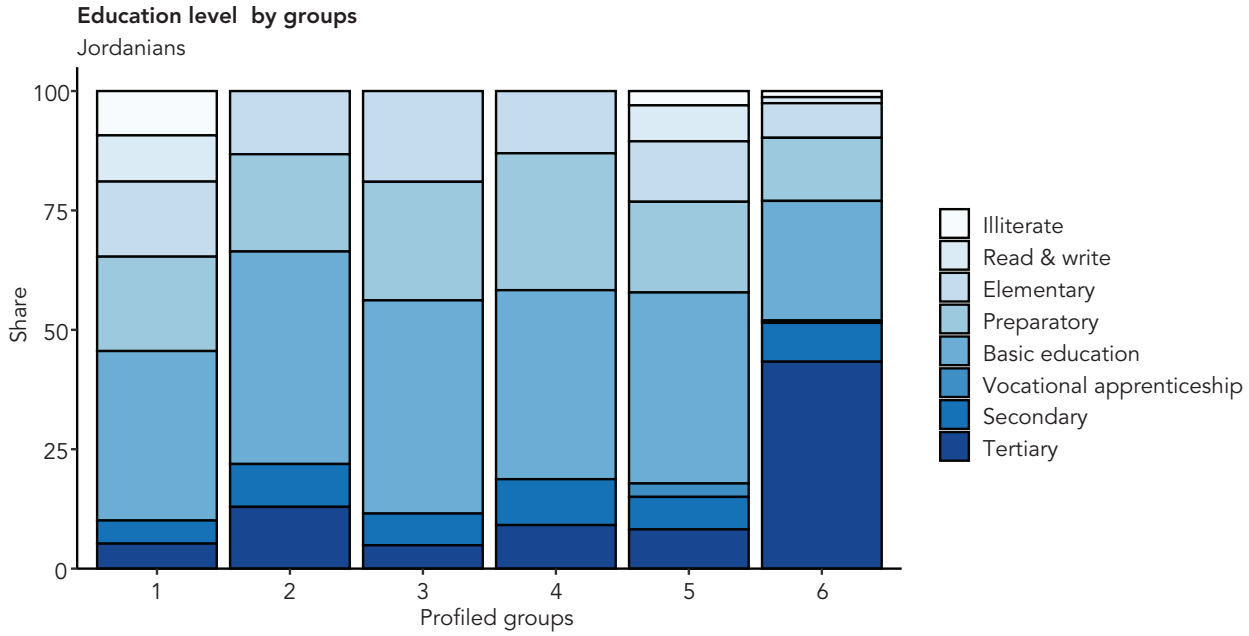
Employed Jordanian men

FIGURE C.2. Informality clusters among employed Jordanian males



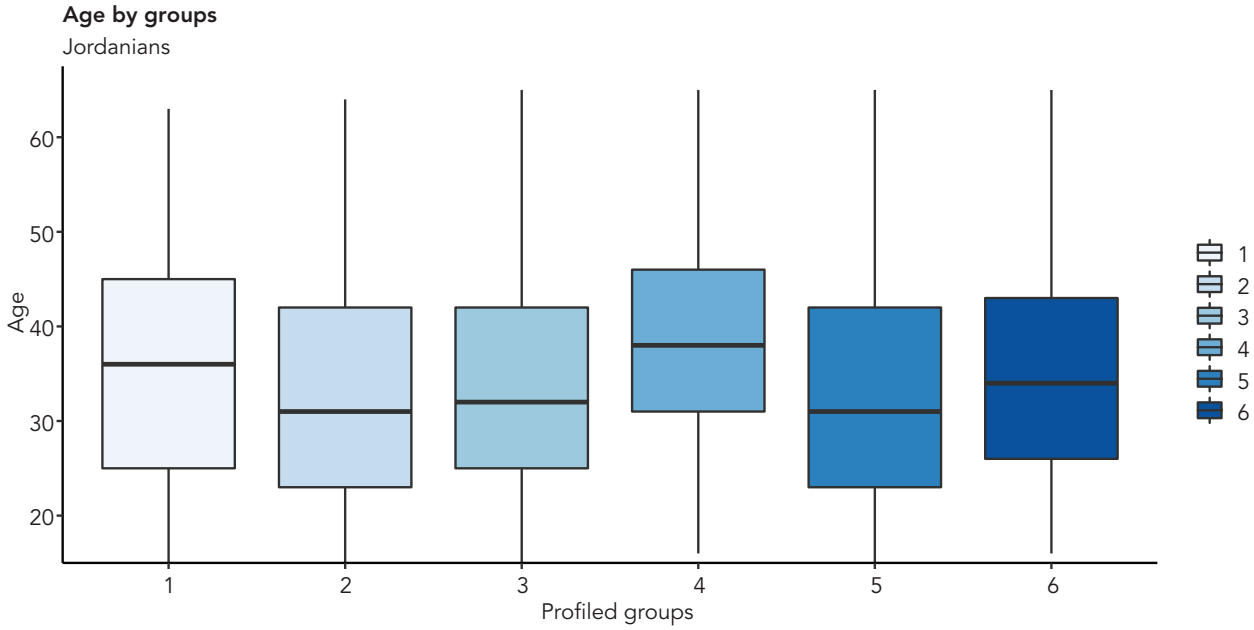
Source: Own calculations based on DS (2018) Labor Force Survey 2018.

FIGURE C.3. Informality clusters among employed Jordanian males by education



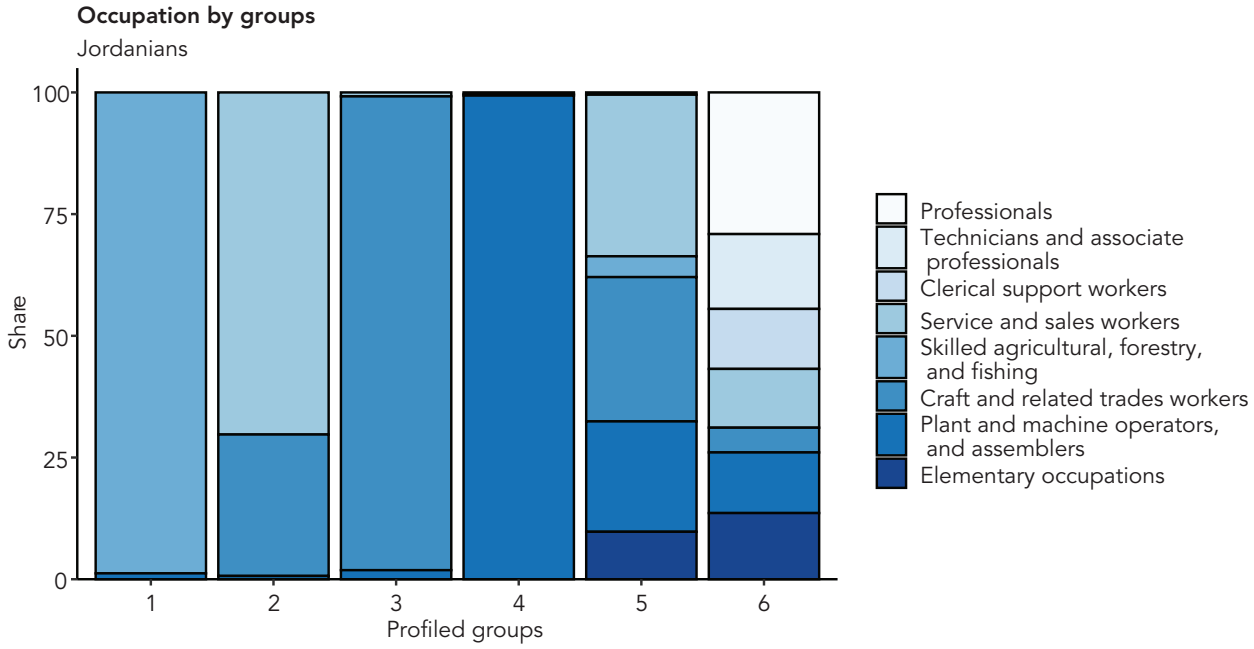
Source: Own calculations based on DS (2018) Labor Force Survey 2018.

FIGURE C.4. Informality clusters among employed Jordanian males by age groups



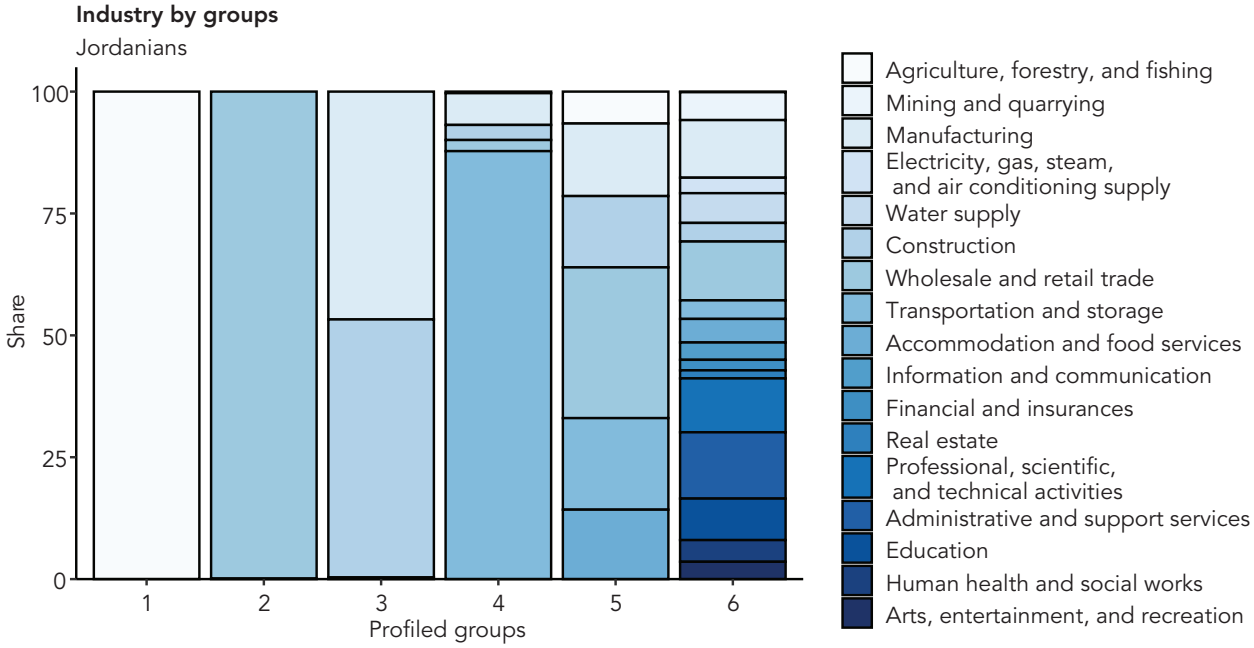
Source: Own calculations based on DS (2018) Labor Force Survey 2018.

FIGURE C.5. Informality clusters among employed Jordanian males by occupation



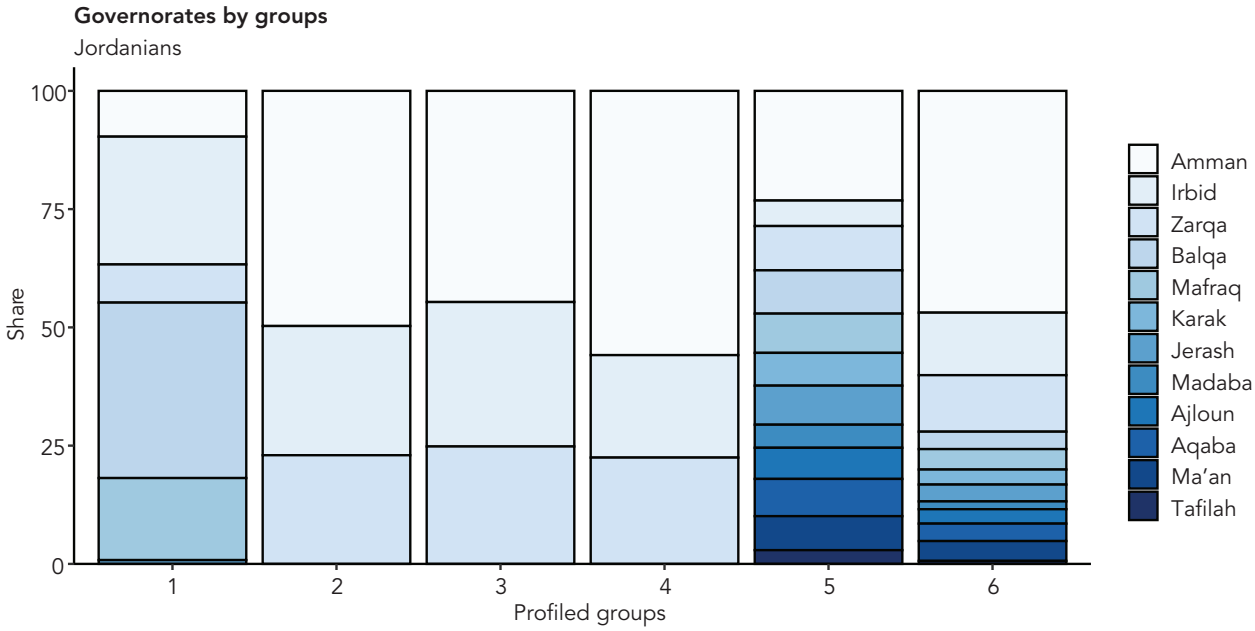
Source: Own calculations based on DS (2018) Labor Force Survey 2018.

FIGURE C.6 Informality clusters among employed Jordanian males by economic sector



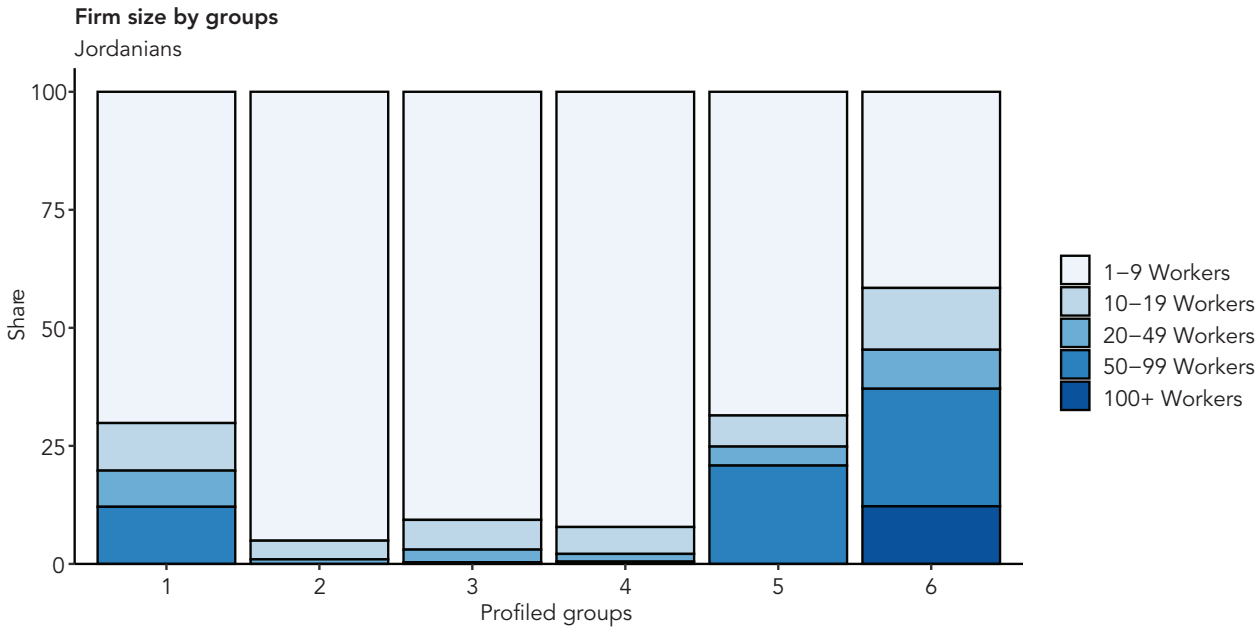
Source: Own calculations based on DS (2018) Labor Force Survey 2018.

FIGURE C.7. Informality clusters among employed Jordanian males by governorate



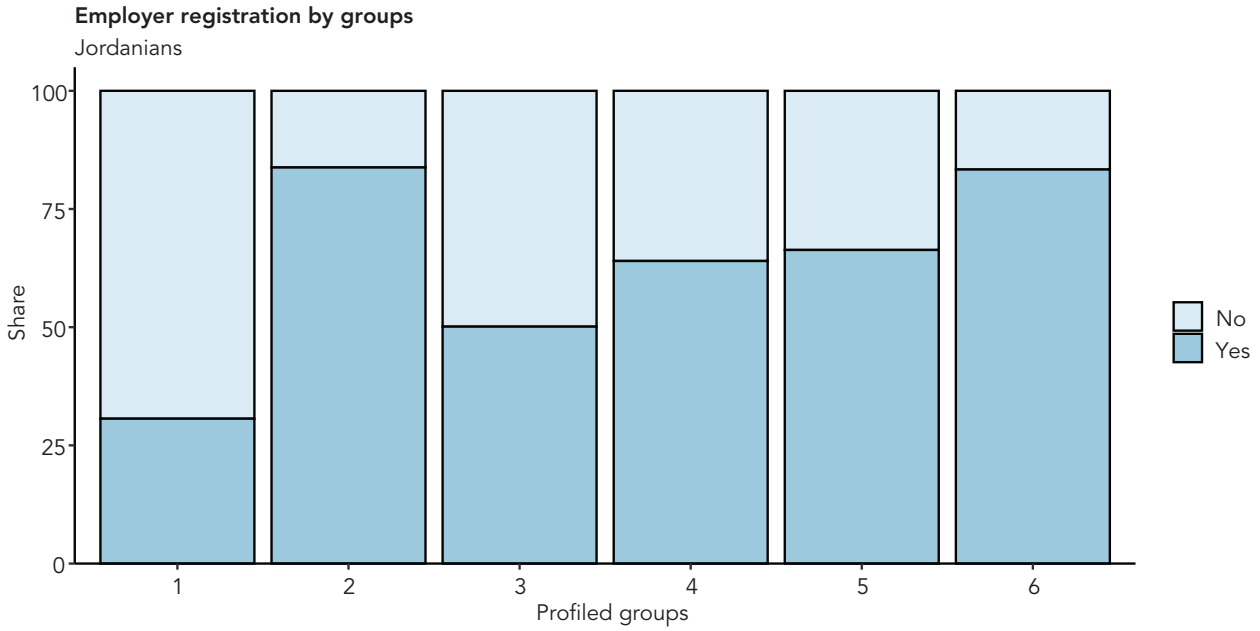
Source: Own calculations based on DS (2018) Labor Force Survey 2018.

FIGURE C.8. Informality clusters among employed Jordanian males by firm size



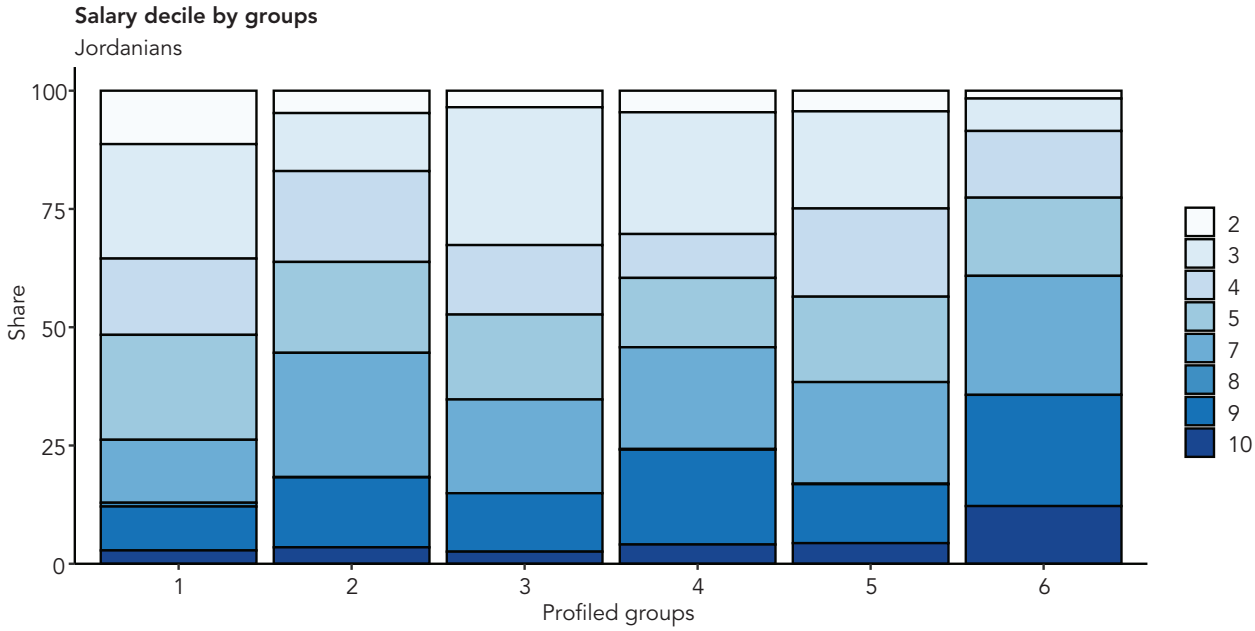
Source: Own calculations based on DS (2018) Labor Force Survey 2018.

FIGURE C.9. Informality clusters among employed Jordanian males by firm registration



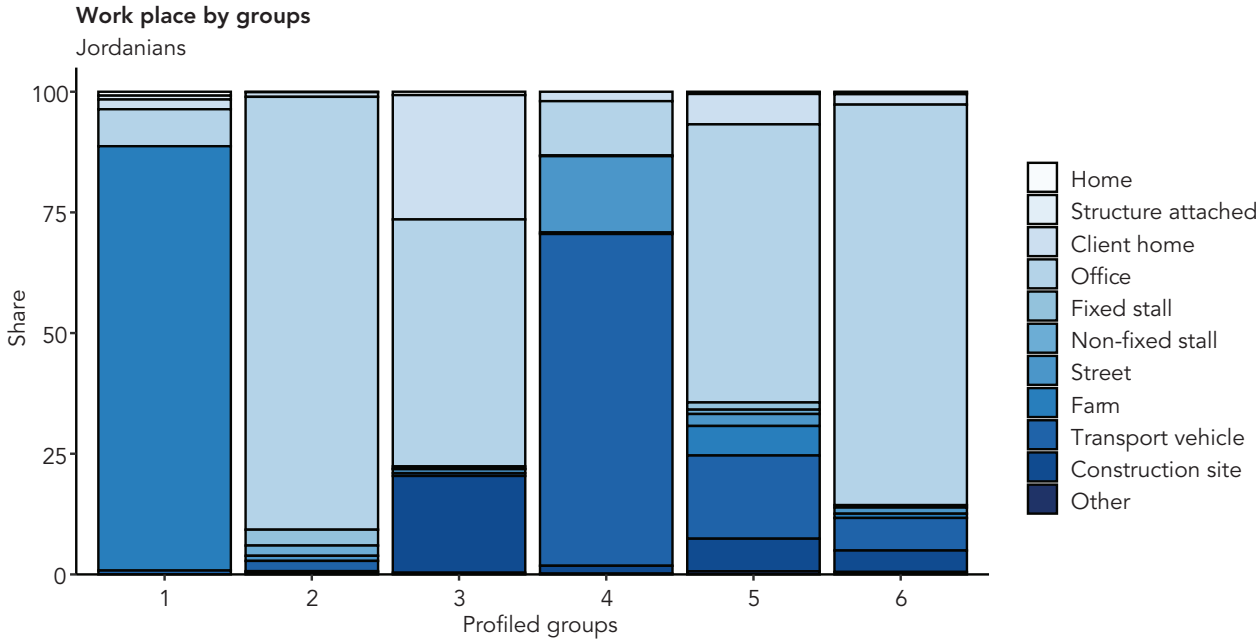
Source: Own calculations based on DS (2018) Labor Force Survey 2018.

FIGURE C.10. Informality clusters among employed Jordanian males by salary deciles



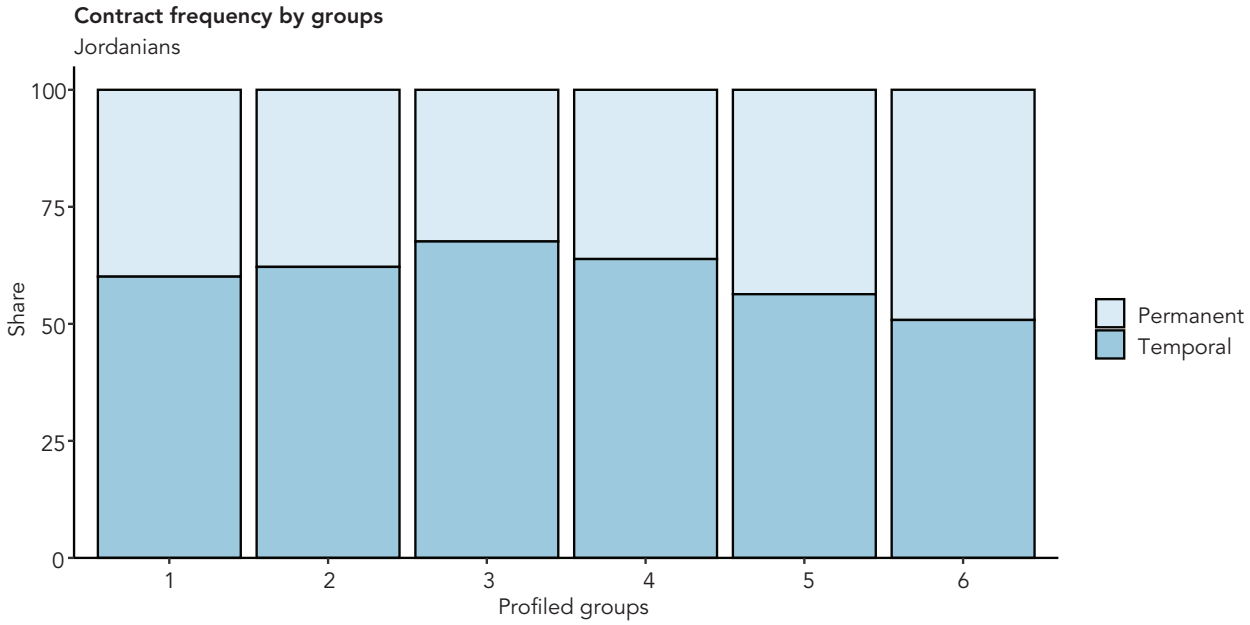
Source: Own calculations based on DS (2018) Labor Force Survey 2018.

FIGURE C.11. Informality clusters among employed Jordanian males by workplace



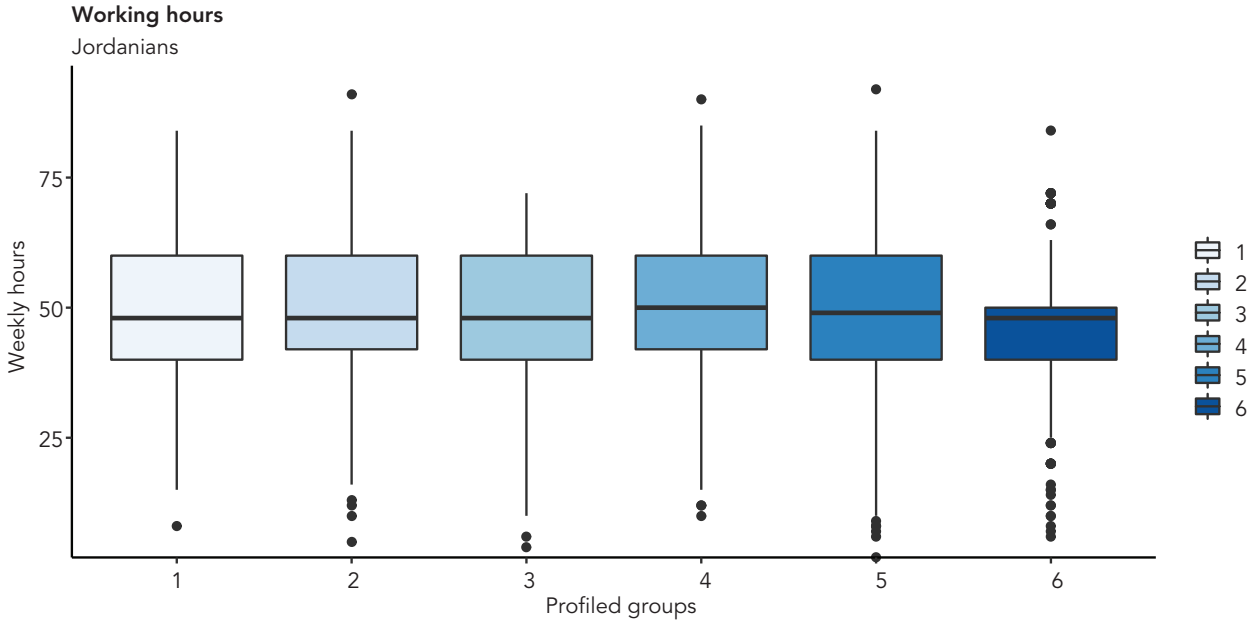
Source: Own calculations based on DS (2018) Labor Force Survey 2018.

FIGURE C.12. Informality clusters among employed Jordanian males by type of contract



Source: Own calculations based on DS (2018) Labor Force Survey 2018.

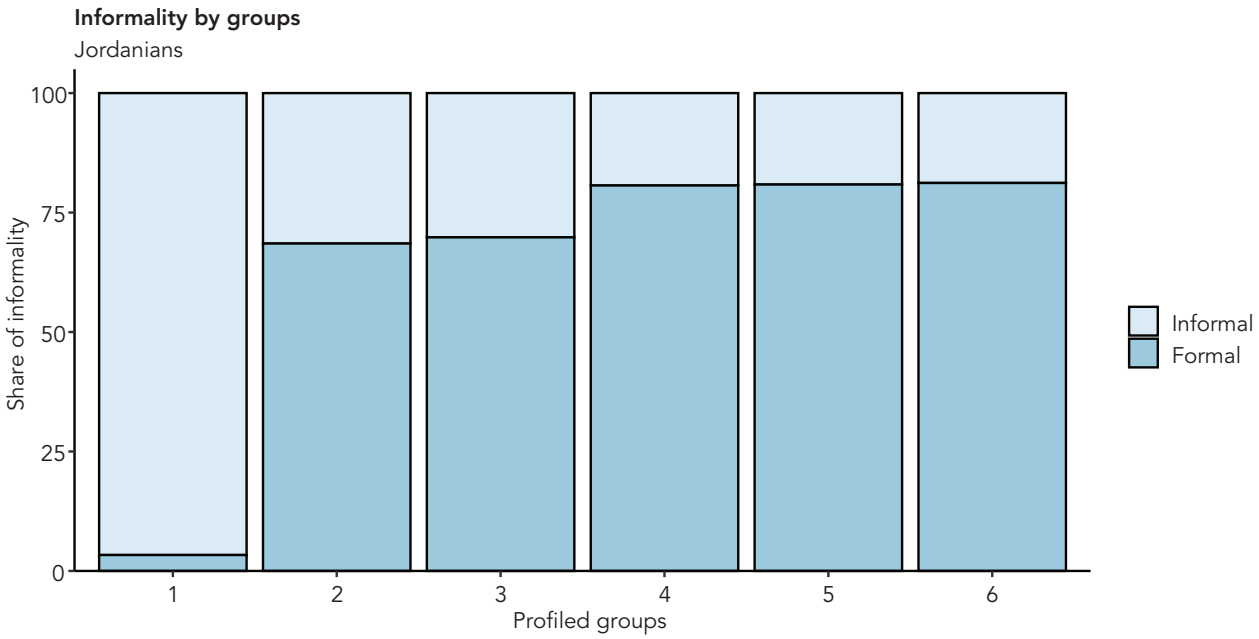
FIGURE C.13. Informality clusters among employed Jordanian males by working hours



Source: Own calculations based on DS (2018) Labor Force Survey 2018.

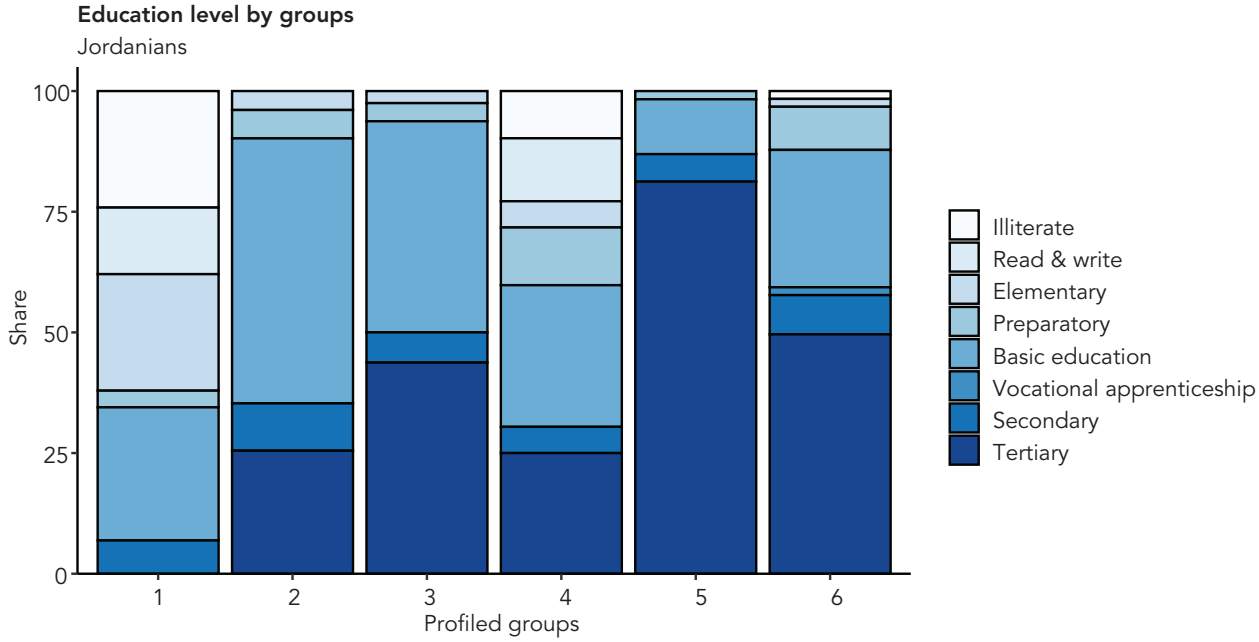
Employed Jordanian women

FIGURE C.14. Informality clusters among employed Jordanian females



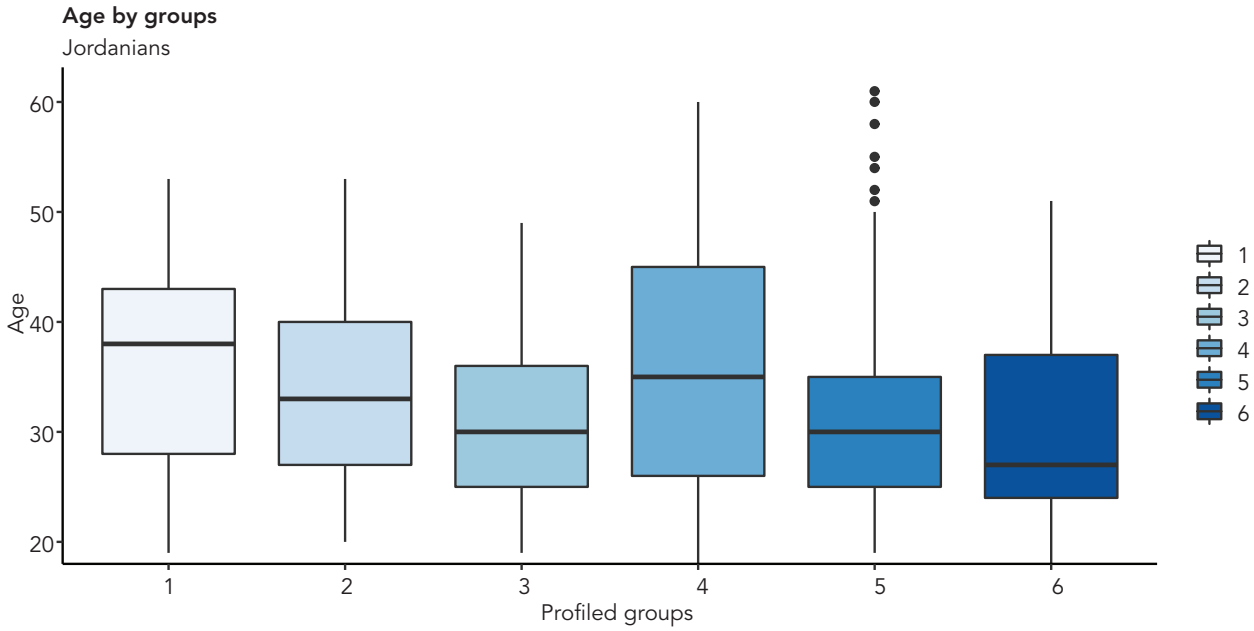
Source: Own calculations based on DS (2018) Labor Force Survey 2018.

FIGURE C.15. Informality clusters among employed Jordanian females by education



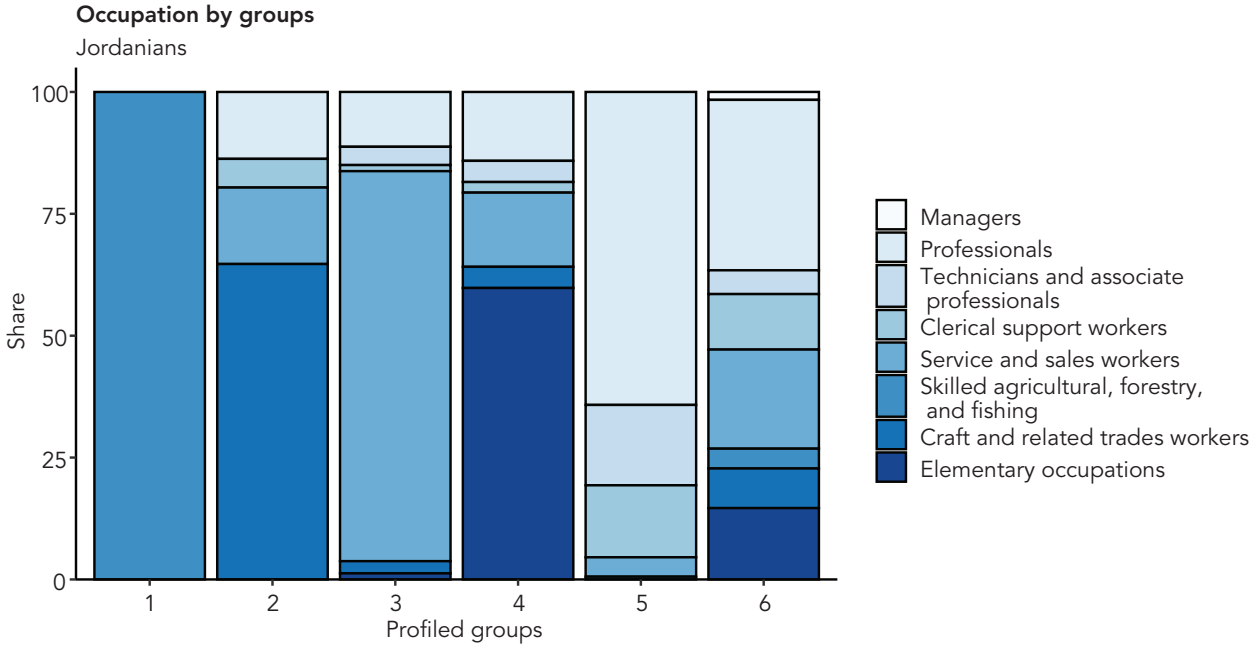
Source: Own calculations based on DS (2018) Labor Force Survey 2018.

FIGURE C.16. Informality clusters among employed Jordanian females by age groups



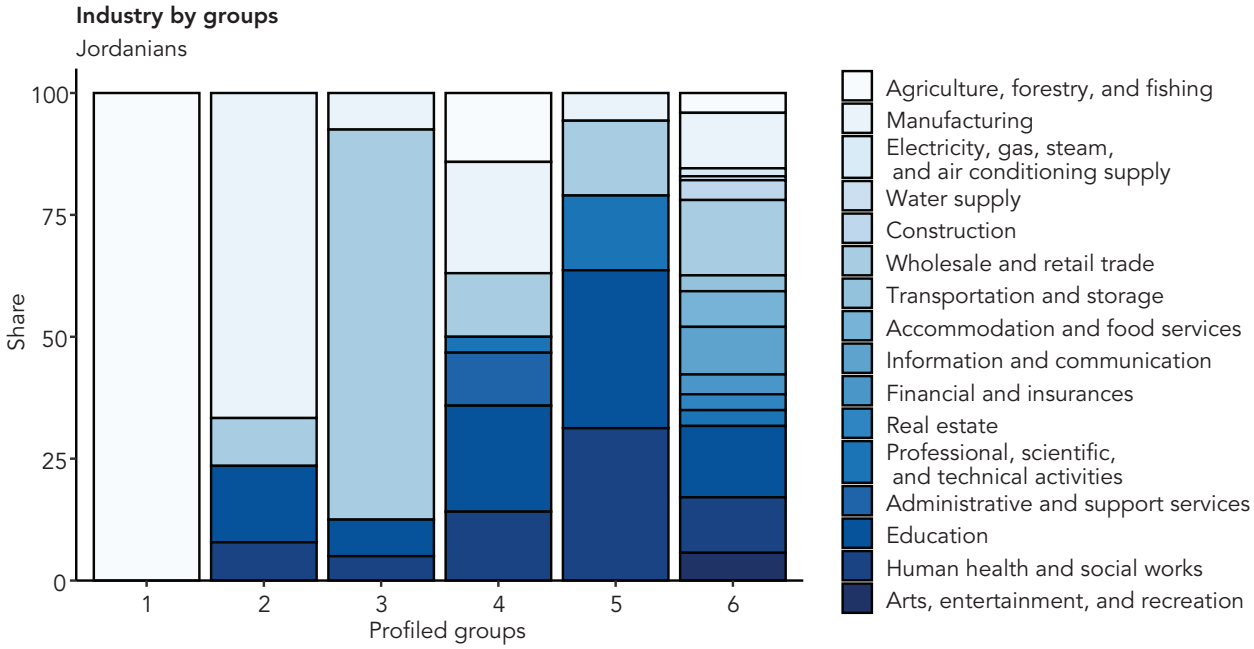
Source: Own calculations based on DS (2018) Labor Force Survey 2018.

FIGURE C.17. Informality clusters among employed Jordanian females by occupation



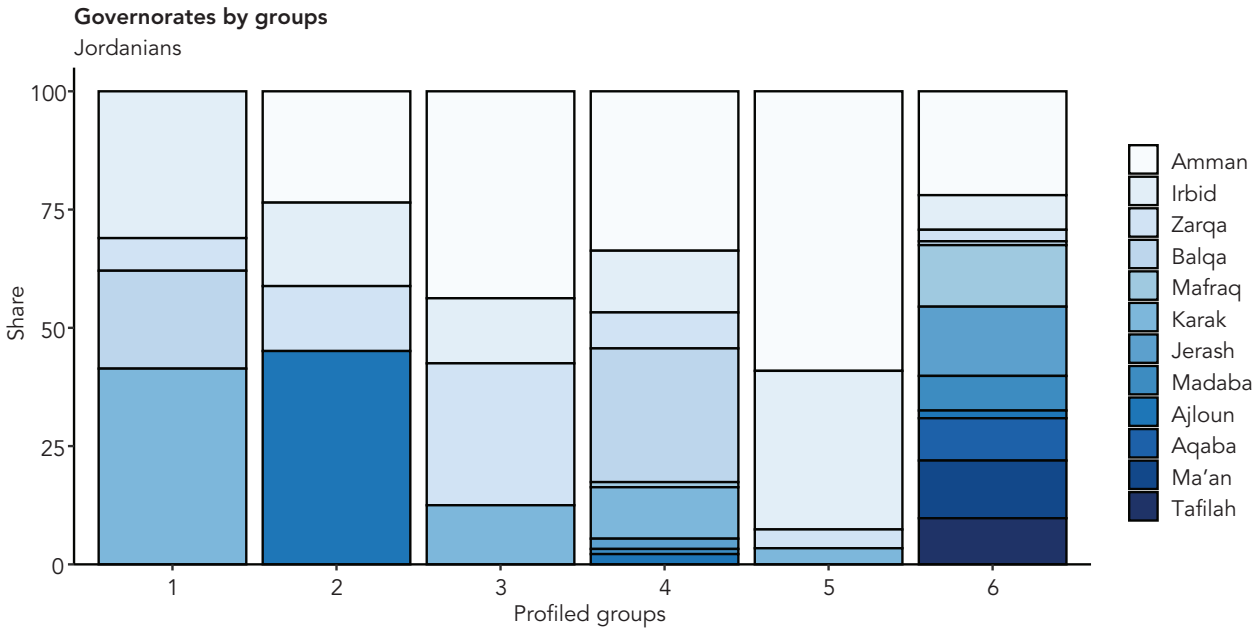
Source: Own calculations based on DS (2018) Labor Force Survey 2018.

FIGURE C.18 Informality clusters among employed Jordanian females by economic sector



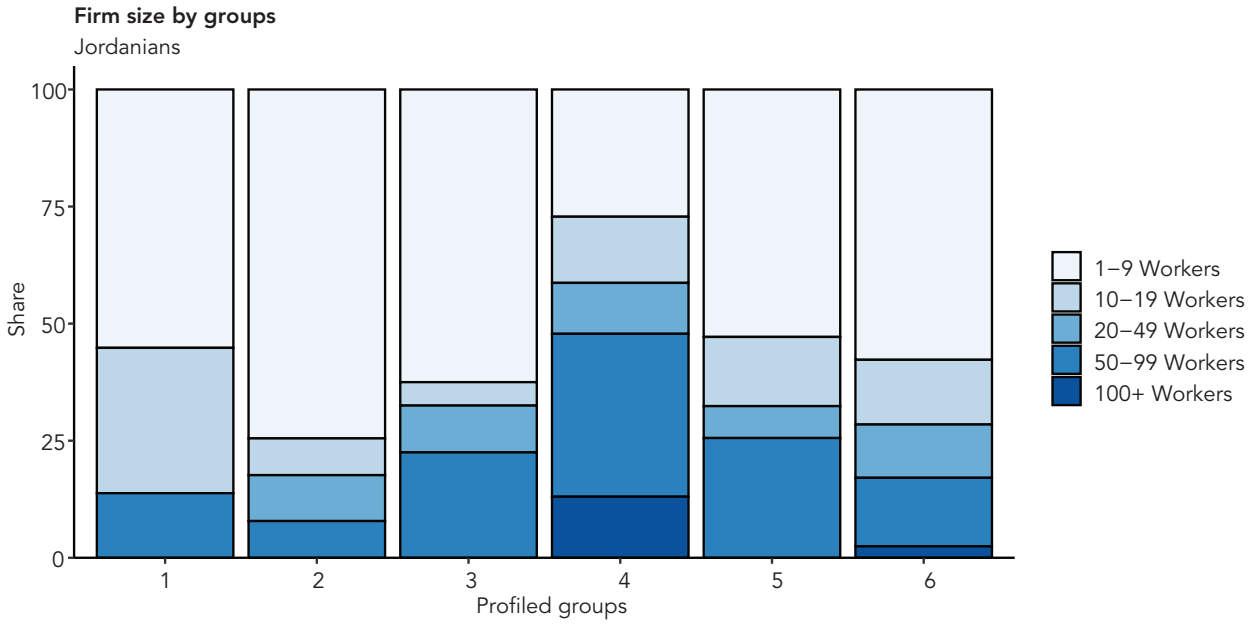
Source: Own calculations based on DS (2018) Labor Force Survey 2018.

FIGURE C.19. Informality clusters among employed Jordanian females by governorate



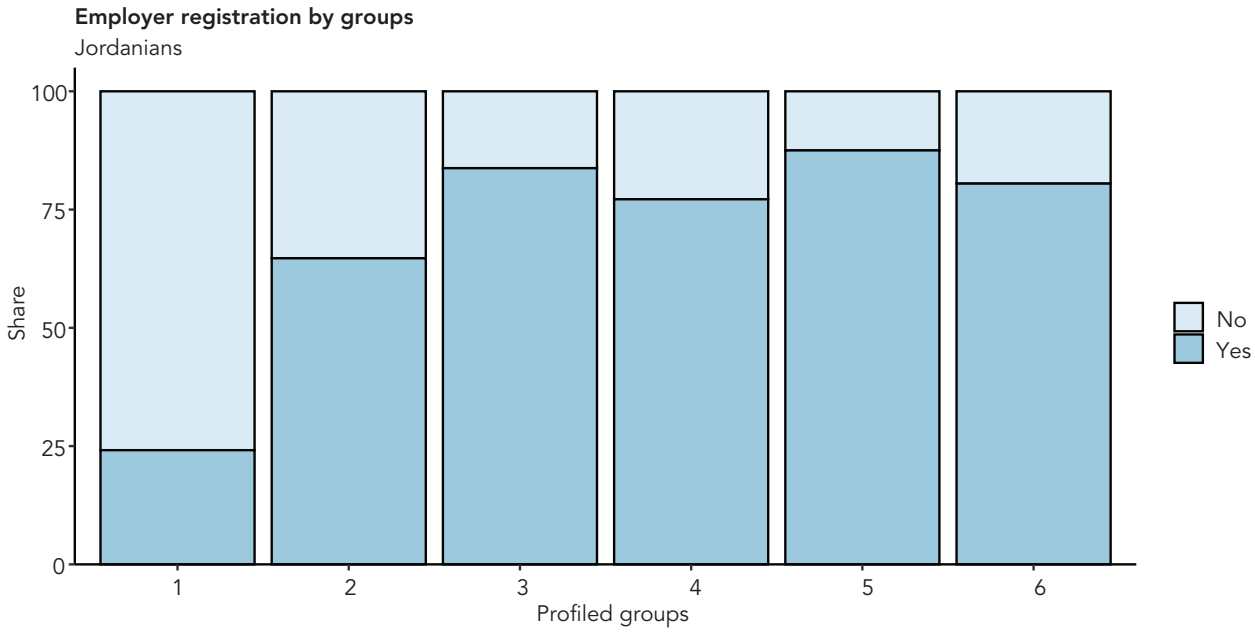
Source: Own calculations based on DS (2018) Labor Force Survey 2018.

FIGURE C.20. Informality clusters among employed Jordanian females by firm size



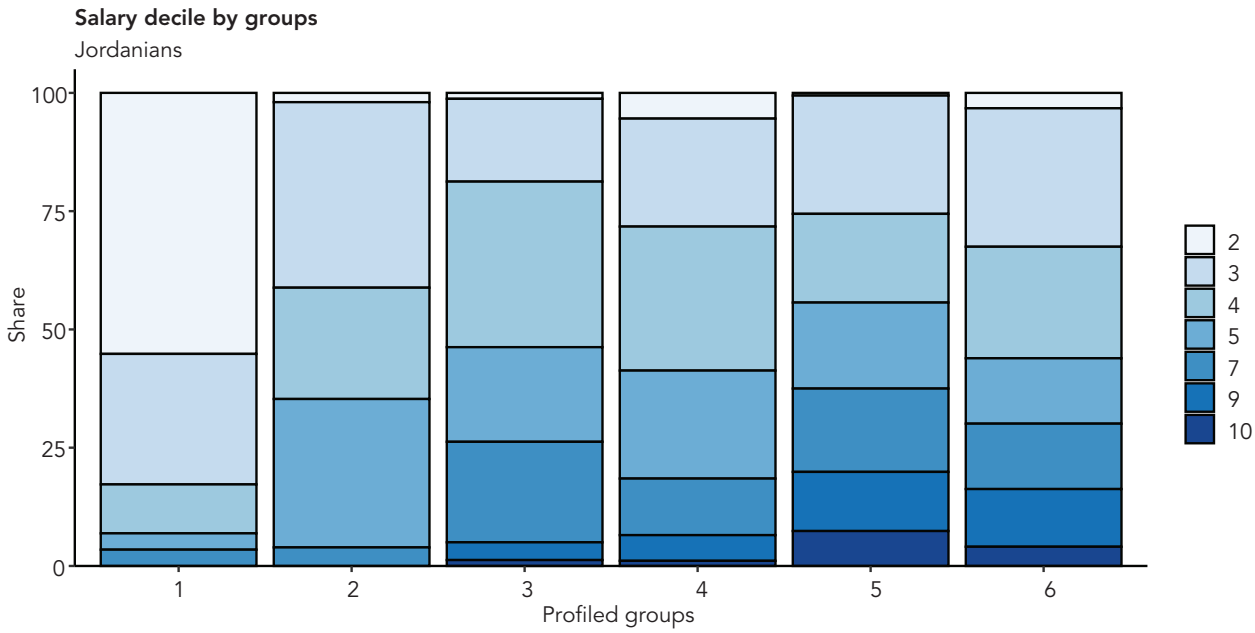
Source: Own calculations based on DS (2018) Labor Force Survey 2018.

FIGURE C.21 Informality clusters among employed Jordanian females by firm registration



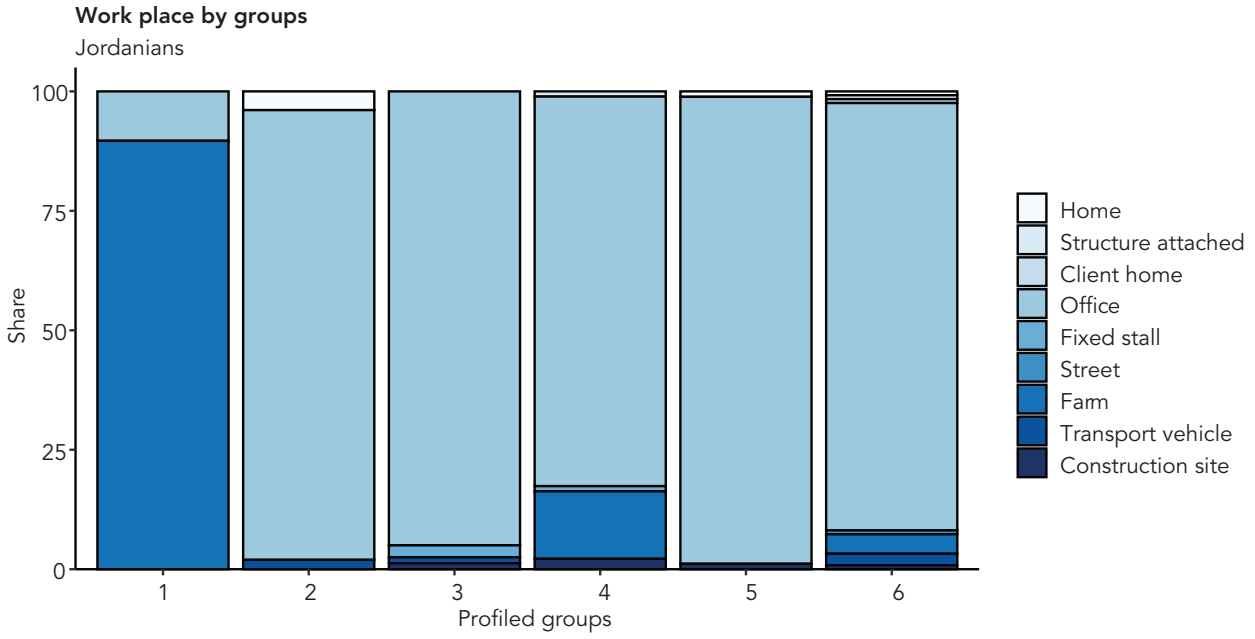
Source: Own calculations based on DS (2018) Labor Force Survey 2018.

FIGURE C.22. Informality clusters among employed Jordanian females by salary deciles



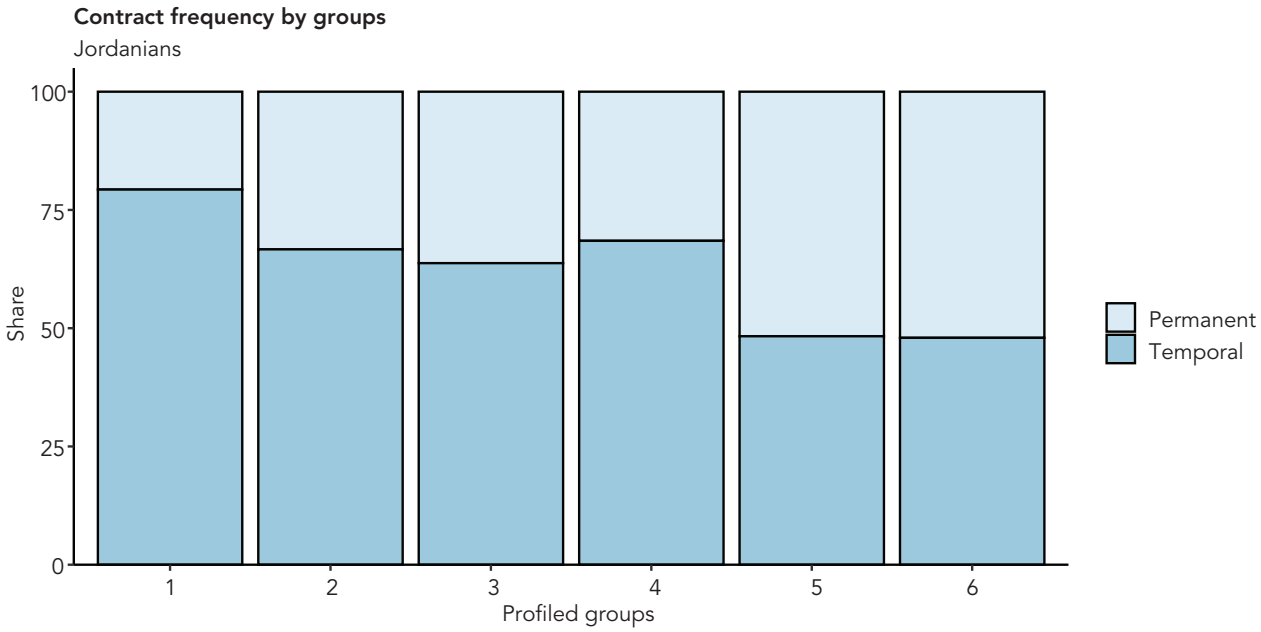
Source: Own calculations based on DS (2018) Labor Force Survey 2018.

FIGURE C.23. Informality clusters among employed Jordanian females by workplace



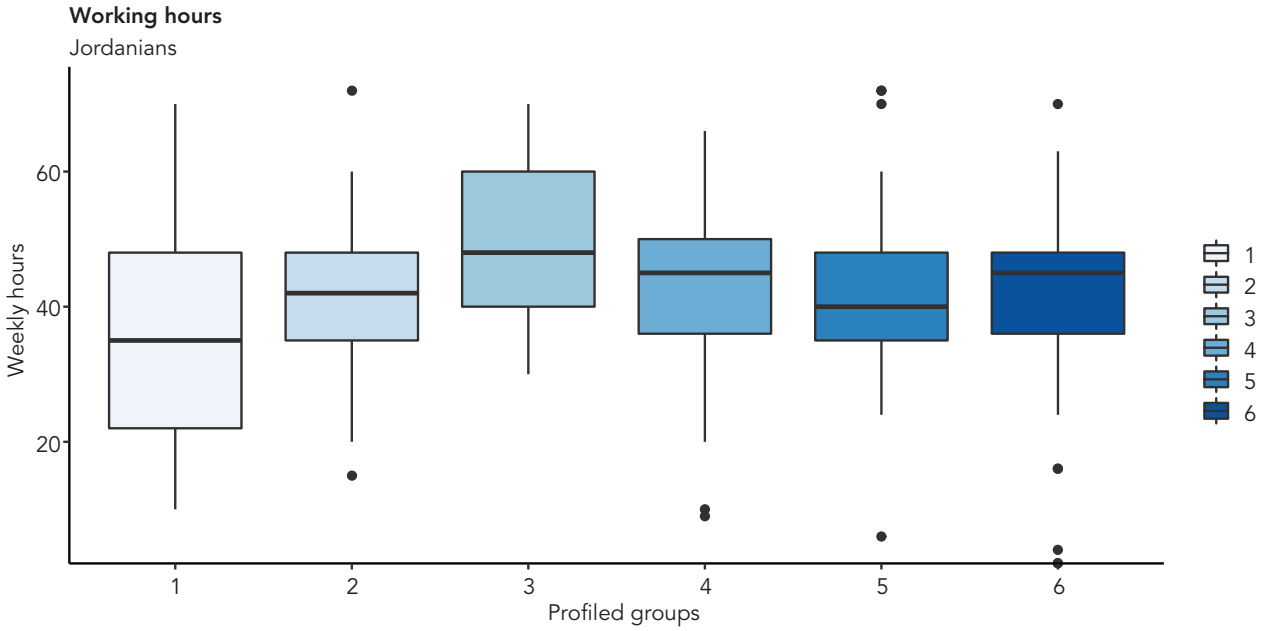
Source: Own calculations based on DS (2018) Labor Force Survey 2018.

FIGURE C.24. Informality clusters among employed Jordanian females by contract



Source: Own calculations based on DS (2018) Labor Force Survey 2018.

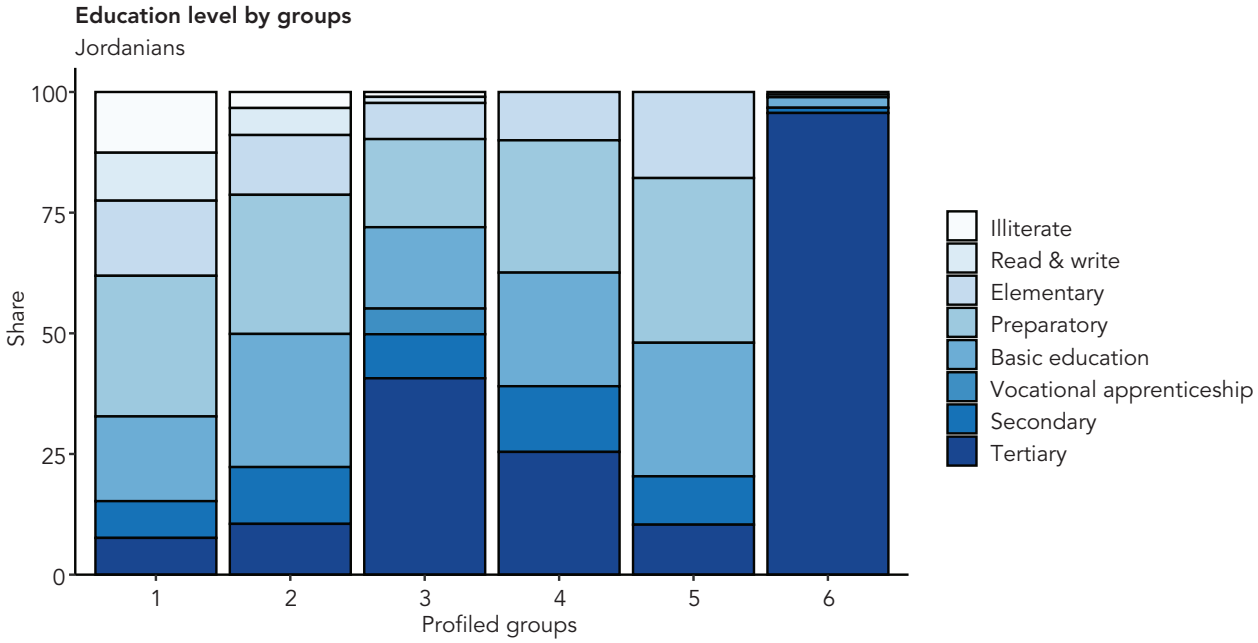
FIGURE C.25. Informality clusters among employed Jordanian females by working hours



Source: Own calculations based on DS (2018) Labor Force Survey 2018.

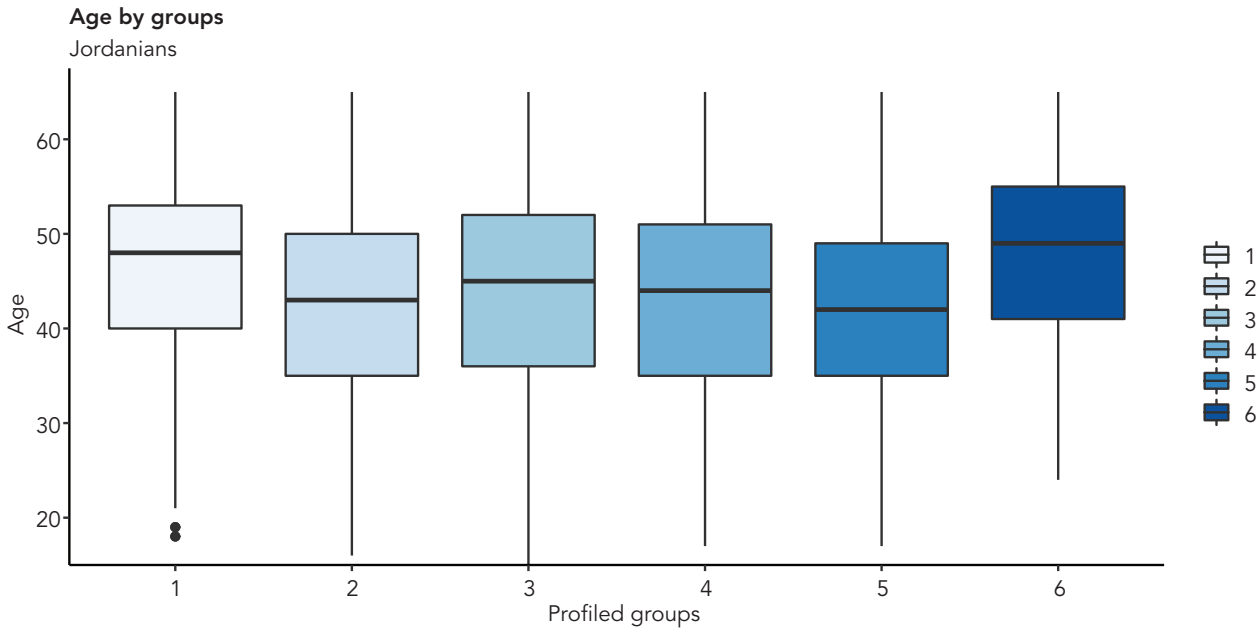
Self-employed/employers Jordanian men

FIGURE C.26. Informality clusters among self-employed/employer Jordanian males by education



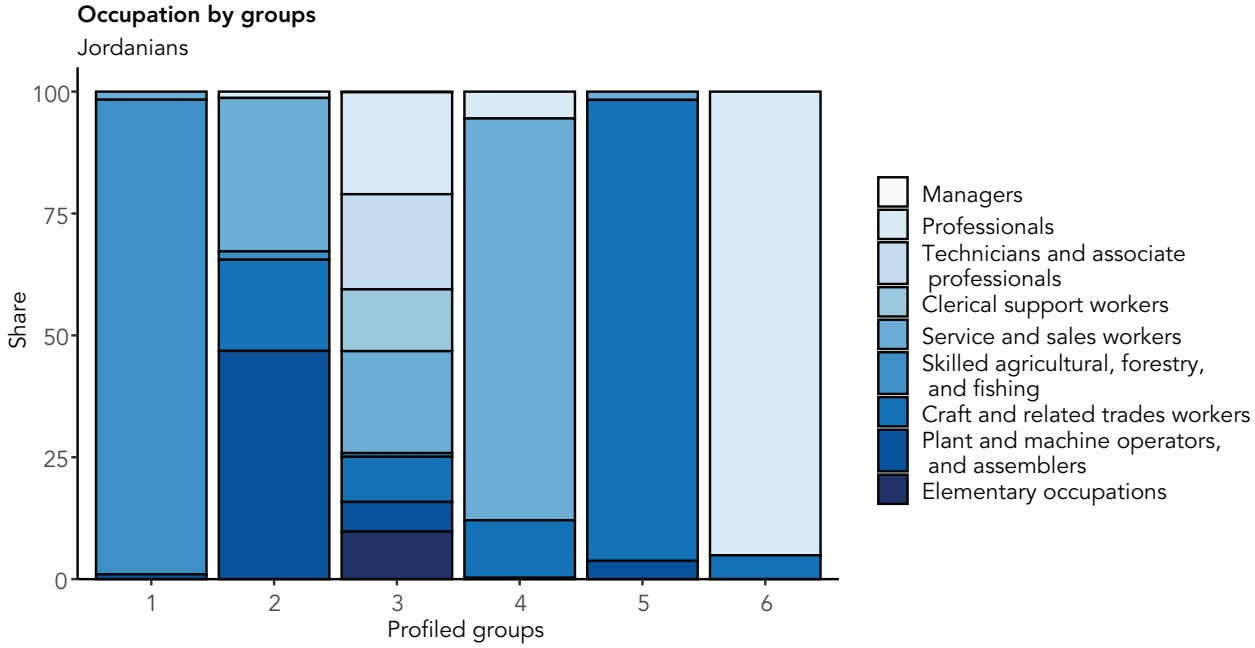
Source: Own calculations based on DS (2018) Labor Force Survey 2018.

FIGURE C.27. Informality clusters among self-employed/employer Jordanian males by age



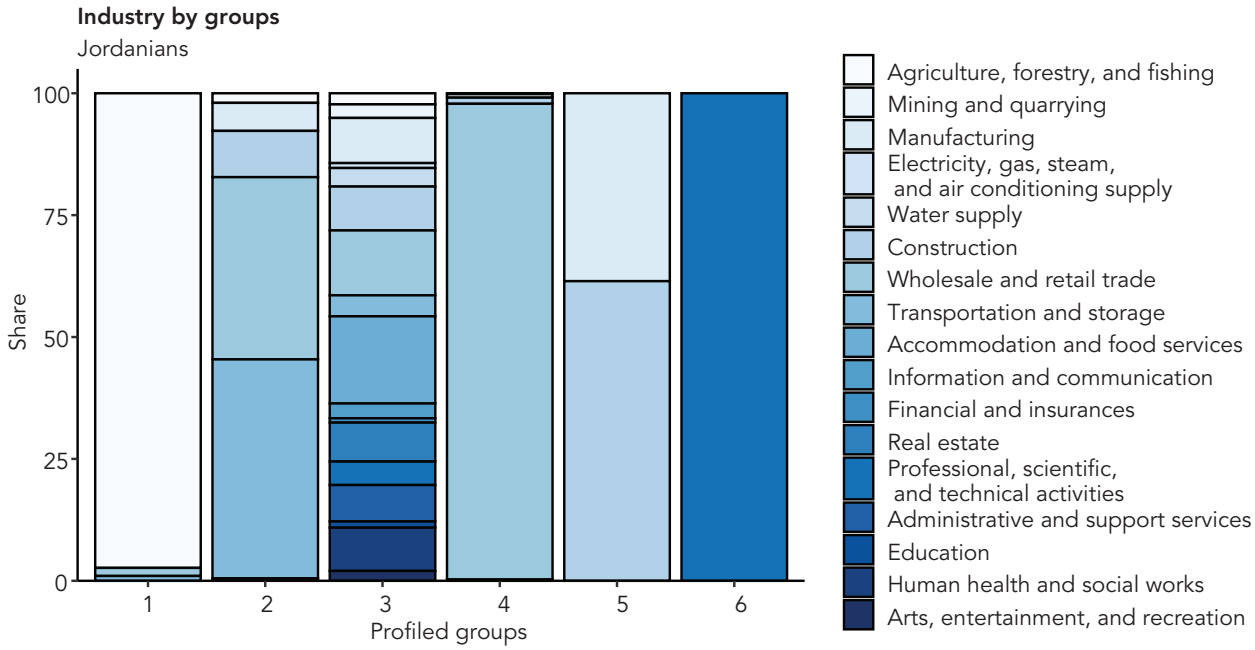
Source: Own calculations based on DS (2018) Labor Force Survey 2018.

FIGURE C.28. Informality clusters among self-employed/employer Jordanian males by occupation



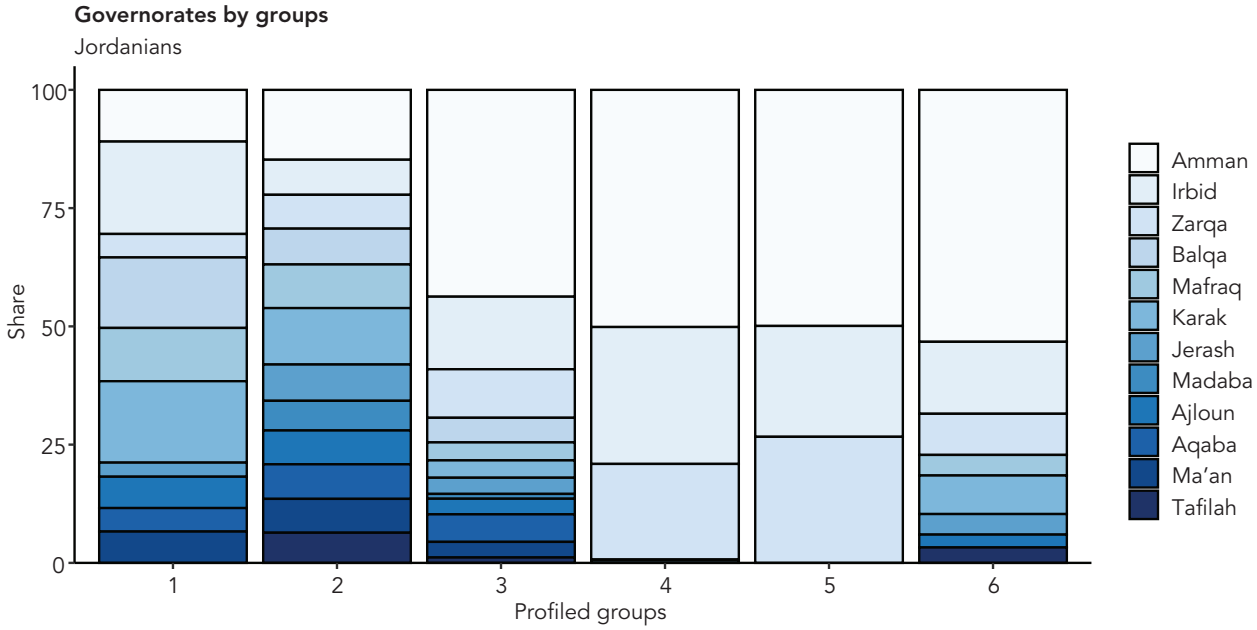
Source: Own calculations based on DS (2018) Labor Force Survey 2018.

FIGURE C.29. Informality clusters among self-employed/employer Jordanian males by economic sector



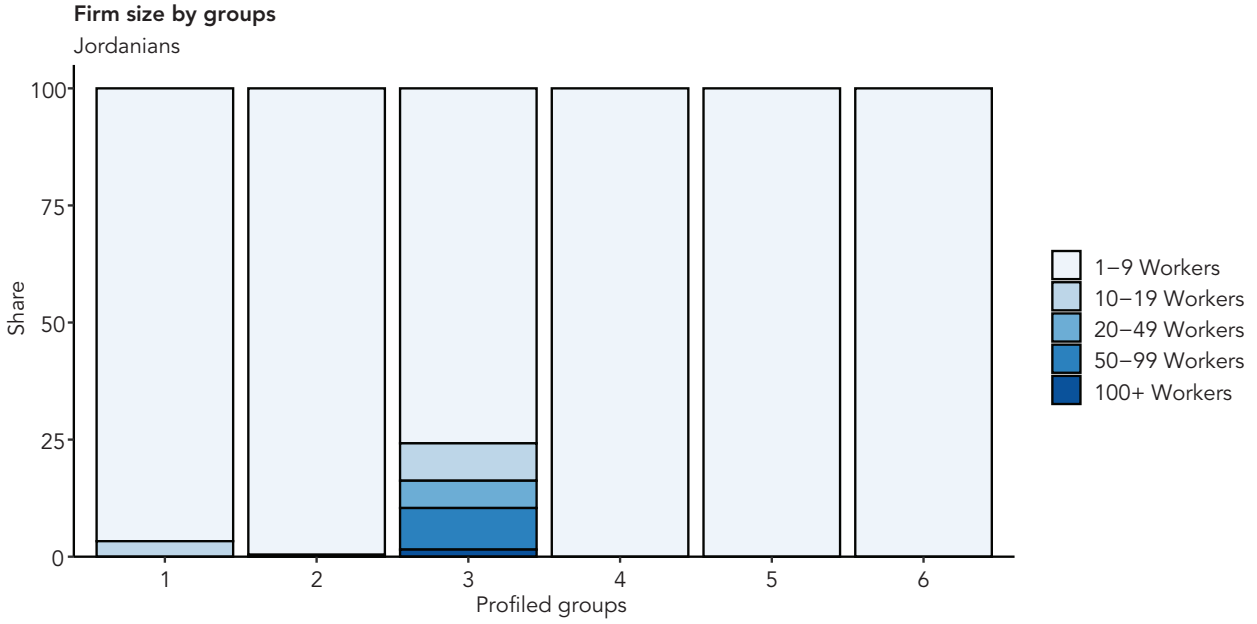
Source: Own calculations based on DS (2018) Labor Force Survey 2018.

FIGURE C.30. Informality clusters among self-employed/employer Jordanian males by governorates



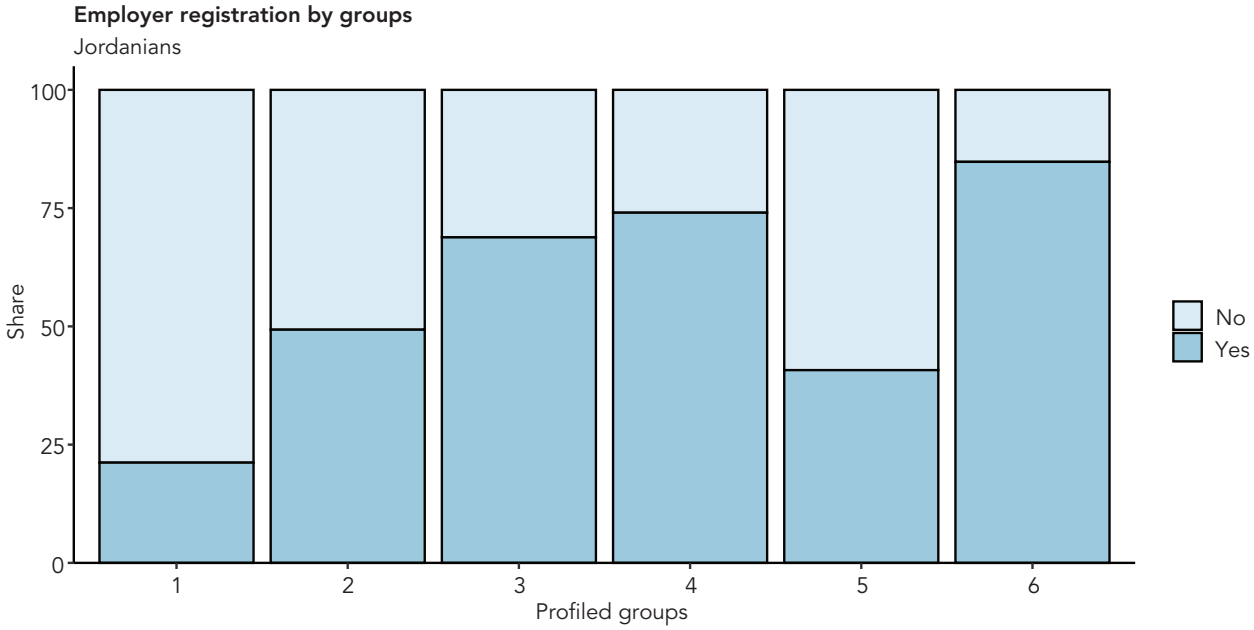
Source: Own calculations based on DS (2018) Labor Force Survey 2018.

FIGURE C.31. Informality clusters among self-employed/employer Jordanian males by firm size



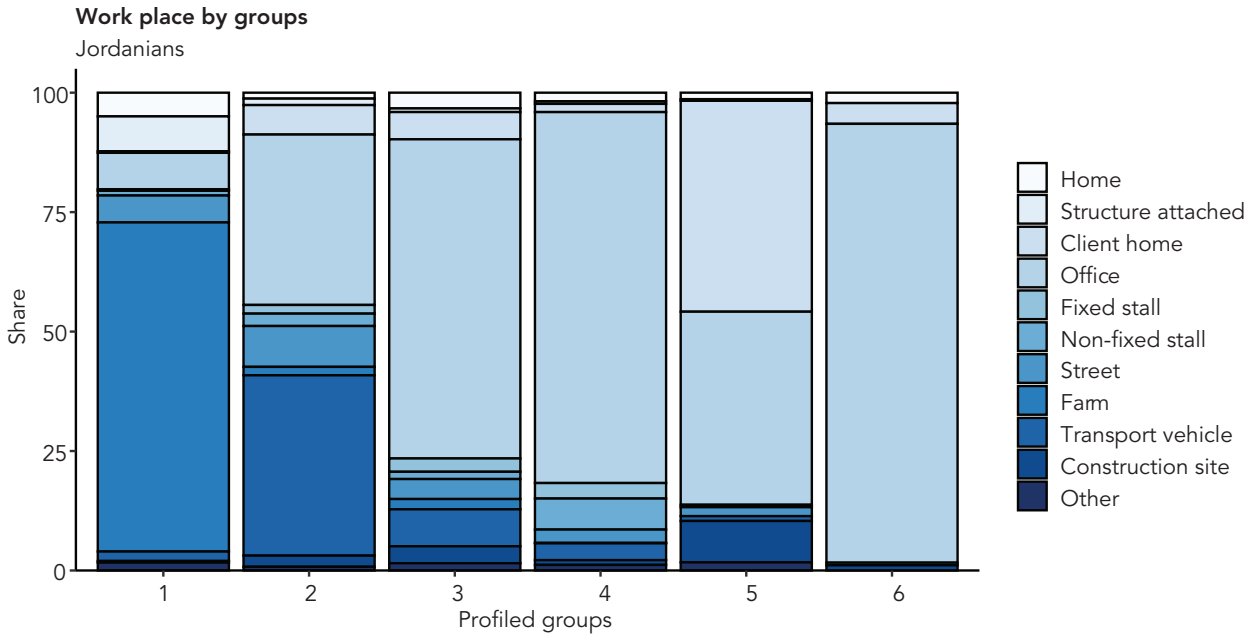
Source: Own calculations based on DS (2018) Labor Force Survey 2018.

FIGURE C.32. Informality clusters among self-employed/employer Jordanian males by firm registration



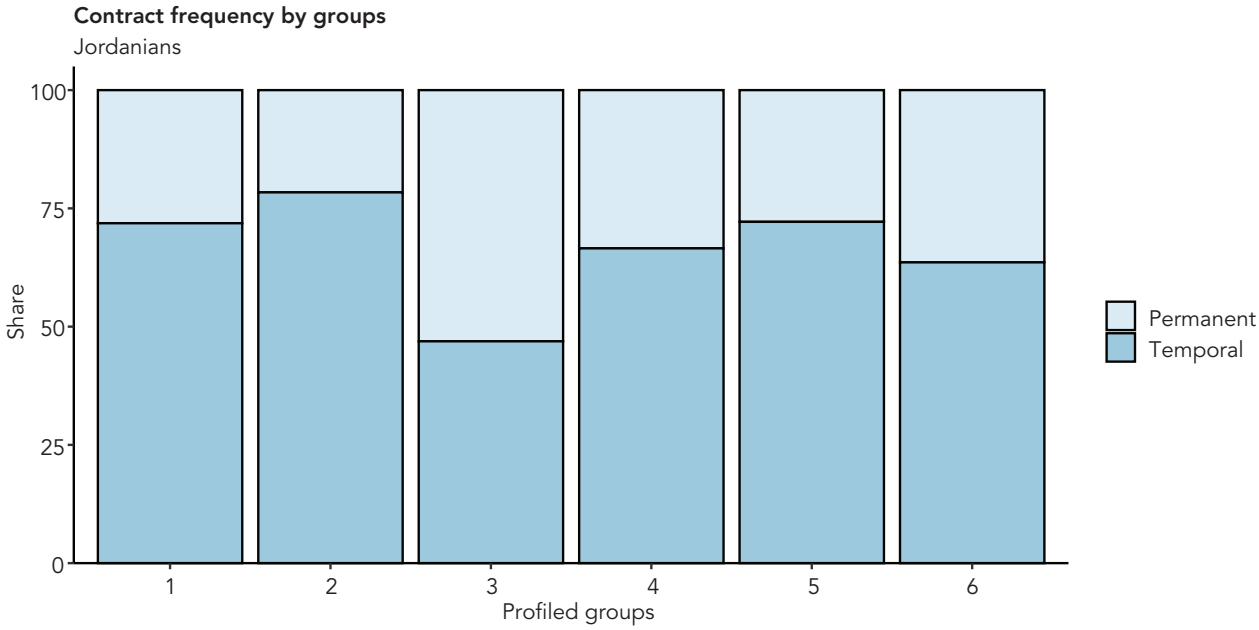
Source: Own calculations based on DS (2018) Labor Force Survey 2018.

FIGURE C.33. Informality clusters among self-employed/employer Jordanian males by workplace



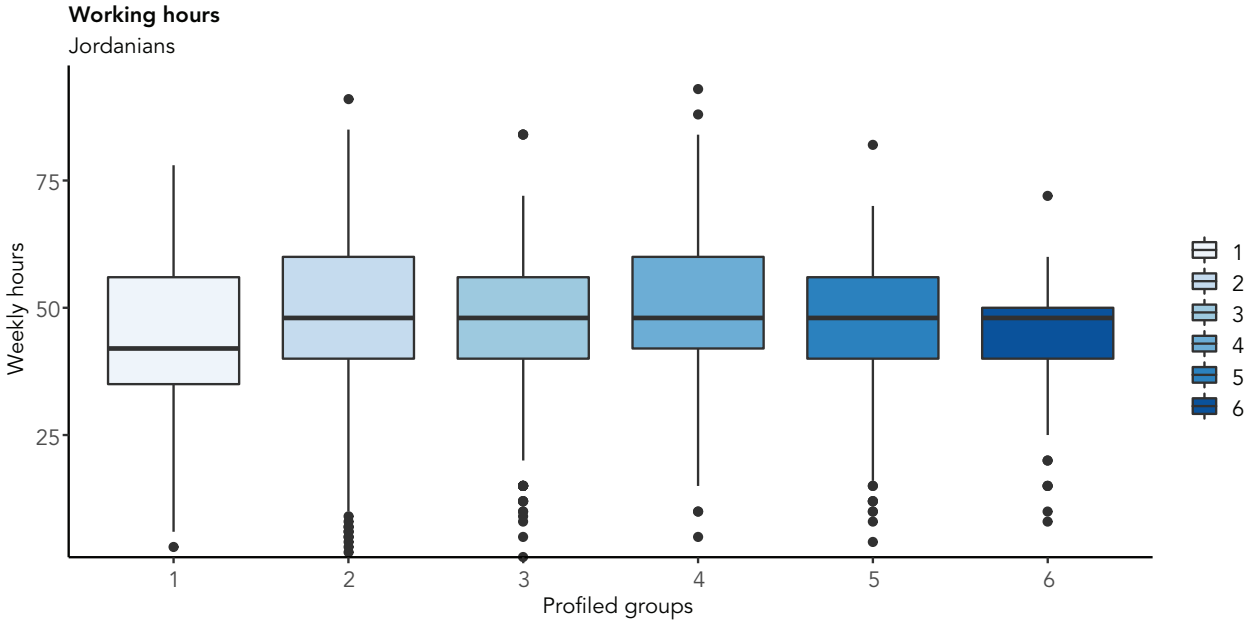
Source: Own calculations based on DS (2018) Labor Force Survey 2018.

FIGURE C.34. Informality clusters among self-employed/employer Jordanian males by contract



Source: Own calculations based on DS (2018) Labor Force Survey 2018.

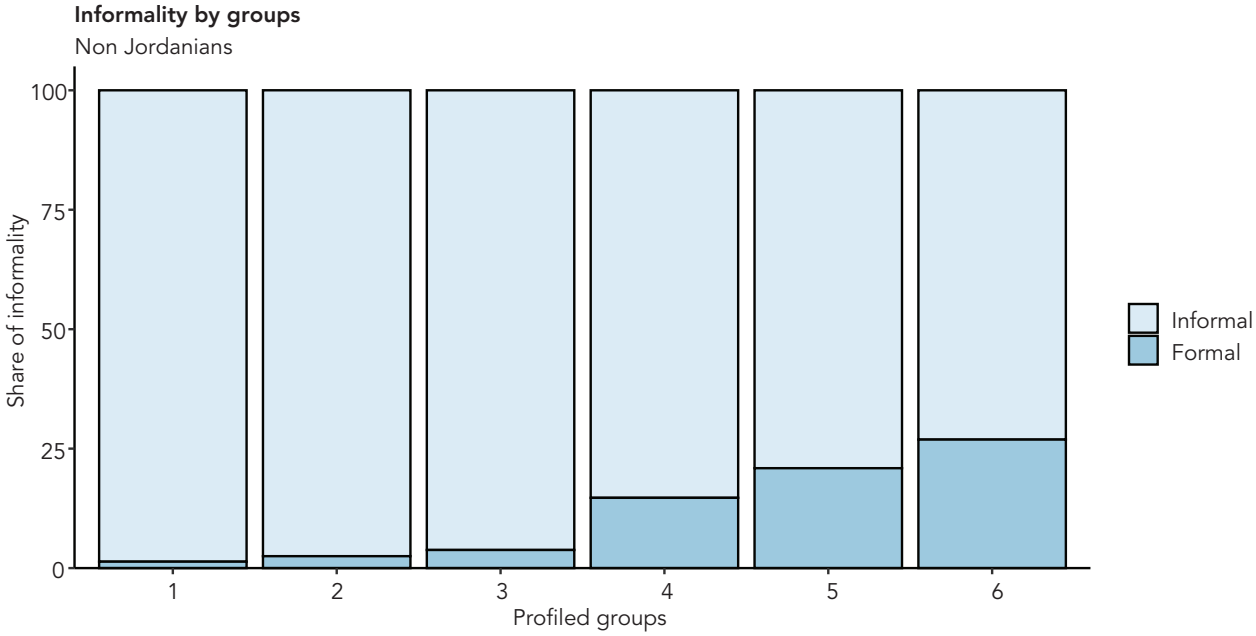
FIGURE C.35. Informality clusters among self-employed/employer Jordanian males by working groups



Source: Own calculations based on DS (2018) Labor Force Survey 2018.

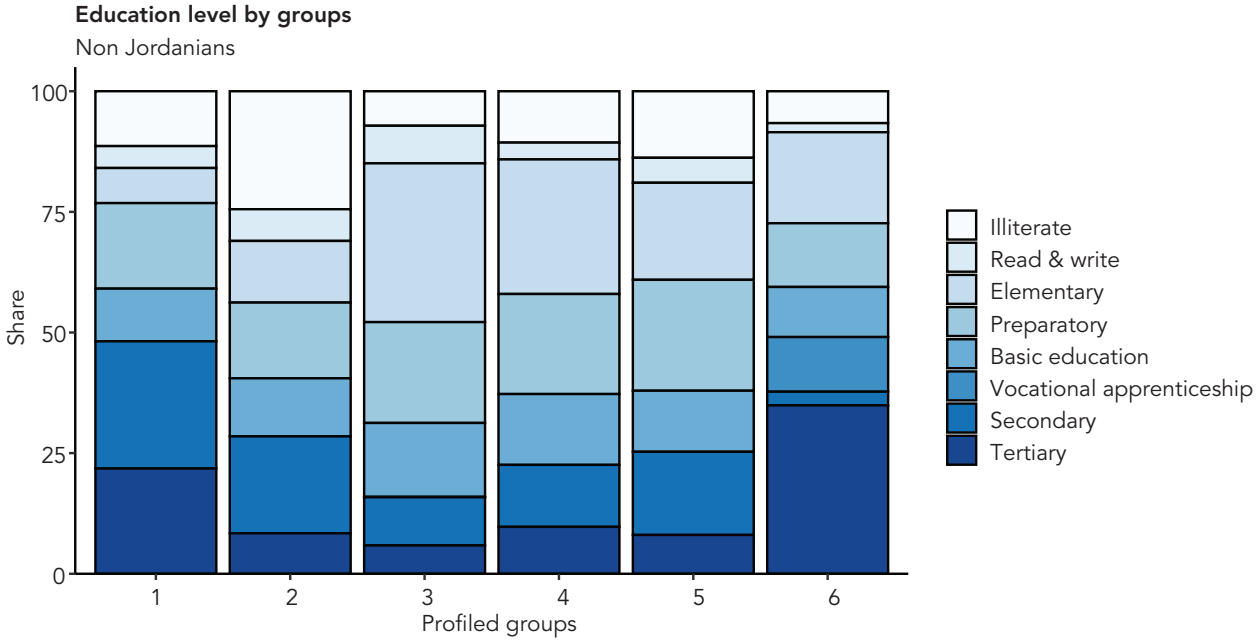
Employed non-Jordanian men

FIGURE C.36. Informality clusters among employed non-Jordanian males



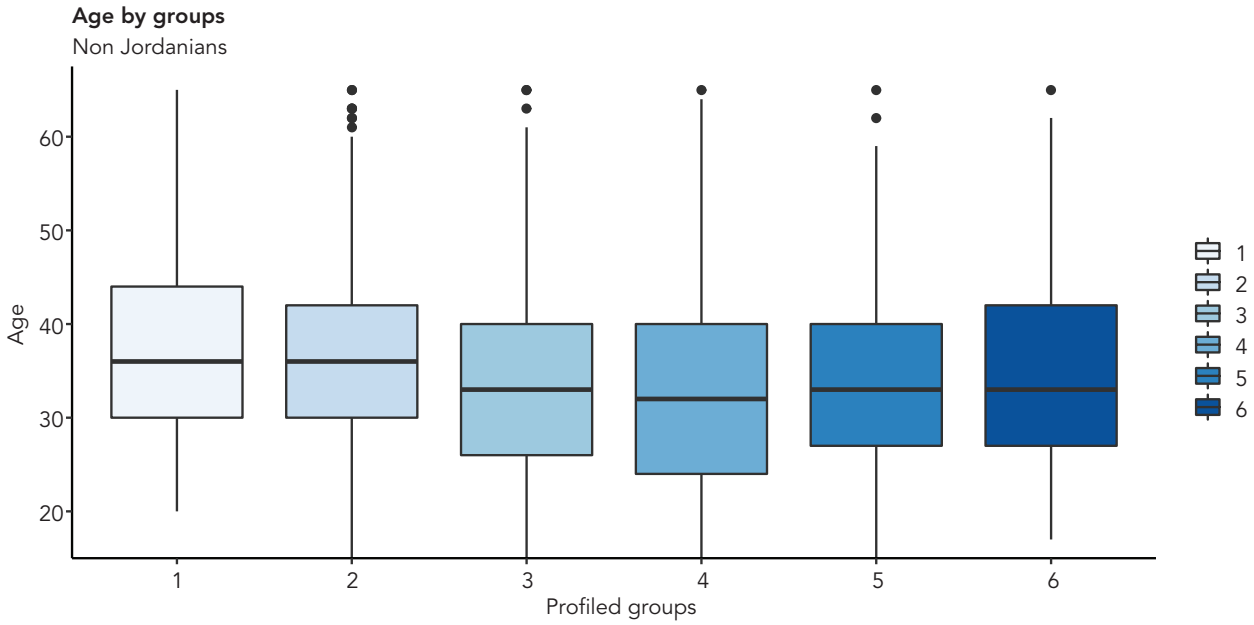
Source: Own calculations based on DS (2018) Labor Force Survey 2018.

FIGURE C.37. Informality clusters among employed non-Jordanian males by education



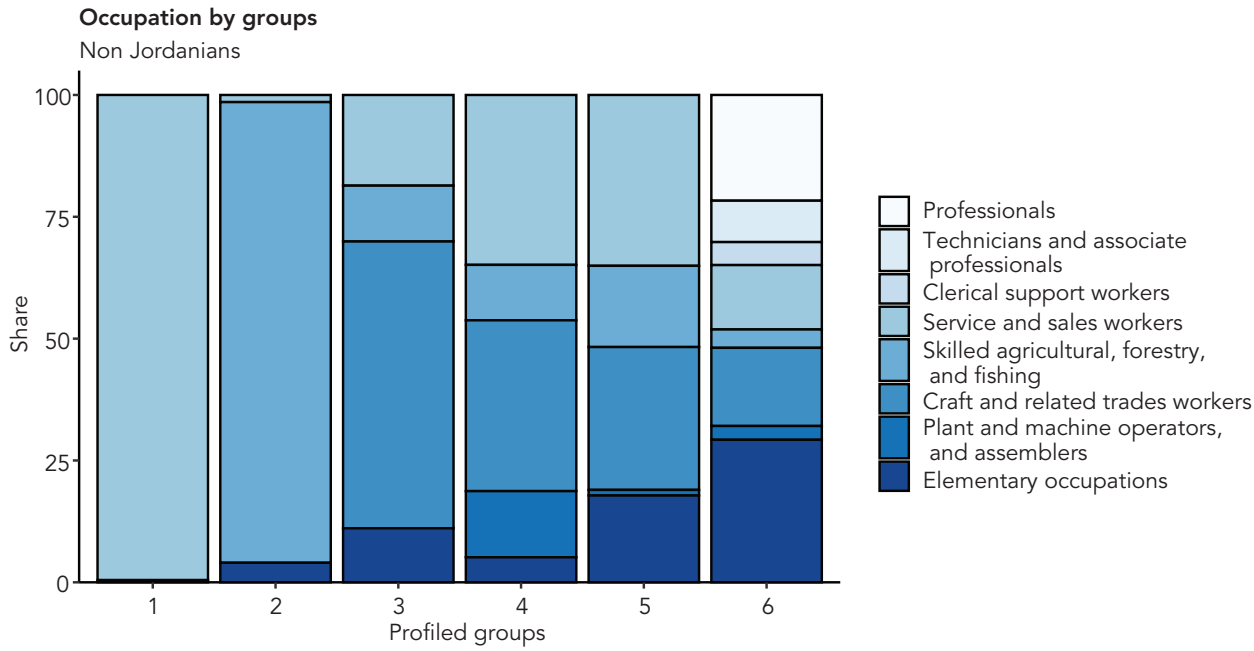
Source: Own calculations based on DS (2018) Labor Force Survey 2018.

FIGURE C.38. Informality clusters among employed non-Jordanian males by age



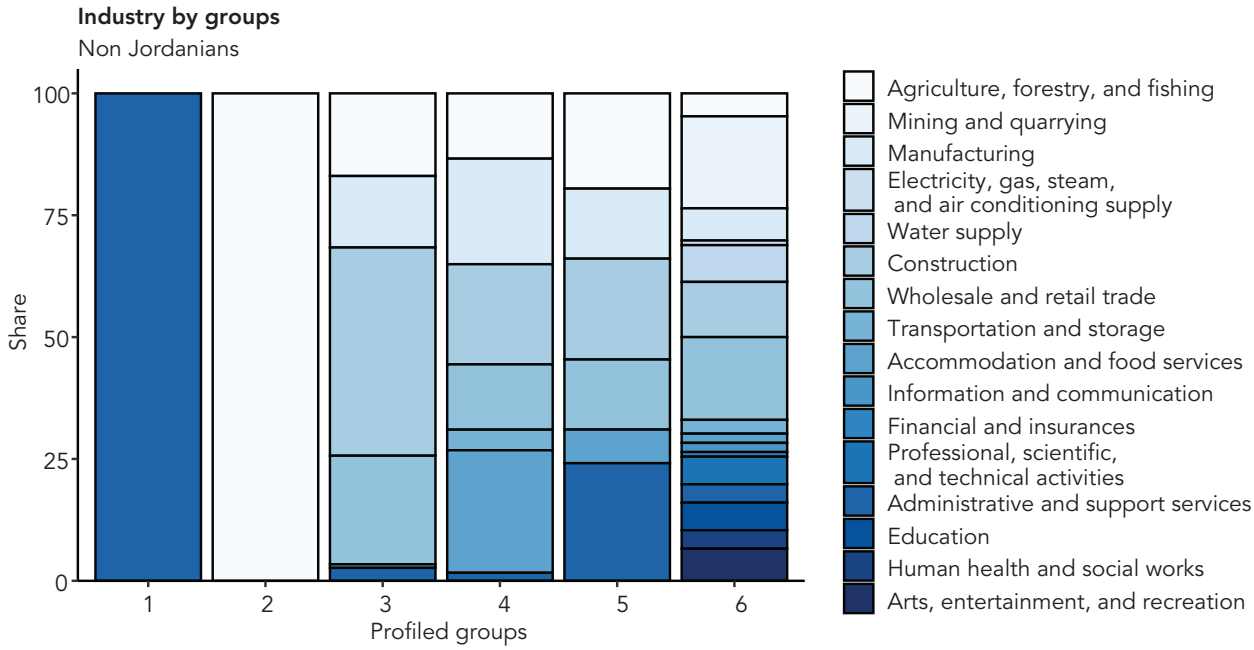
Source: Own calculations based on DS (2018) Labor Force Survey 2018.

FIGURE C.39. Informality clusters among employed non-Jordanian males by occupation



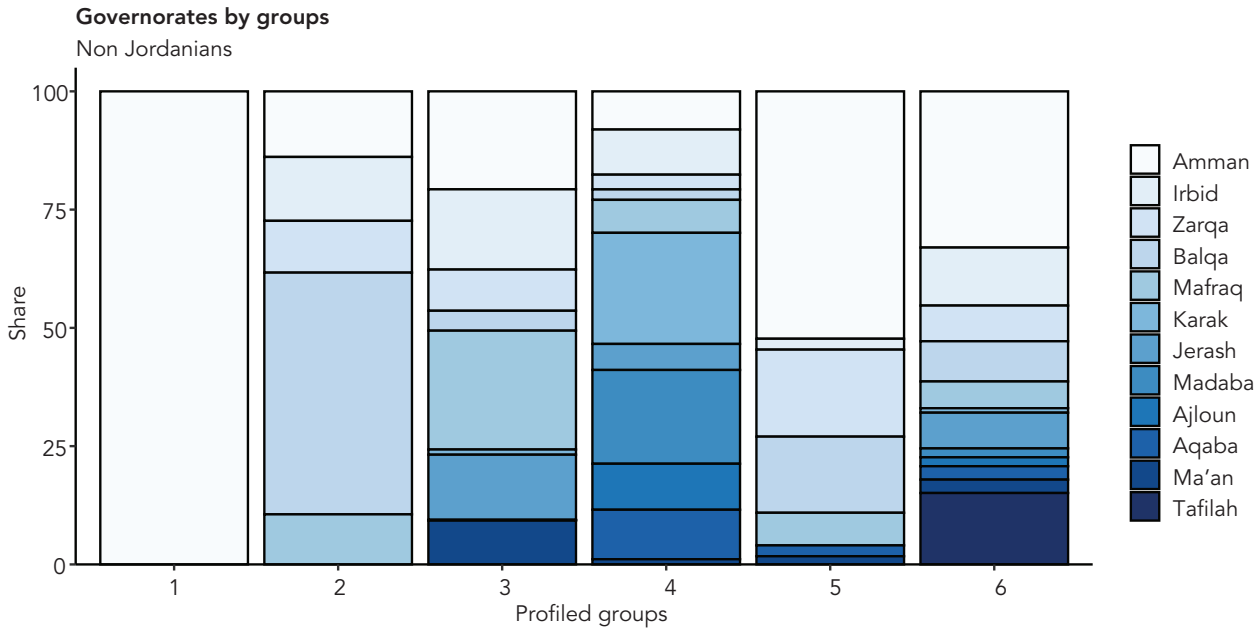
Source: Own calculations based on DS (2018) Labor Force Survey 2018.

FIGURE C.40. Informality clusters among employed non-Jordanian males by economic sector



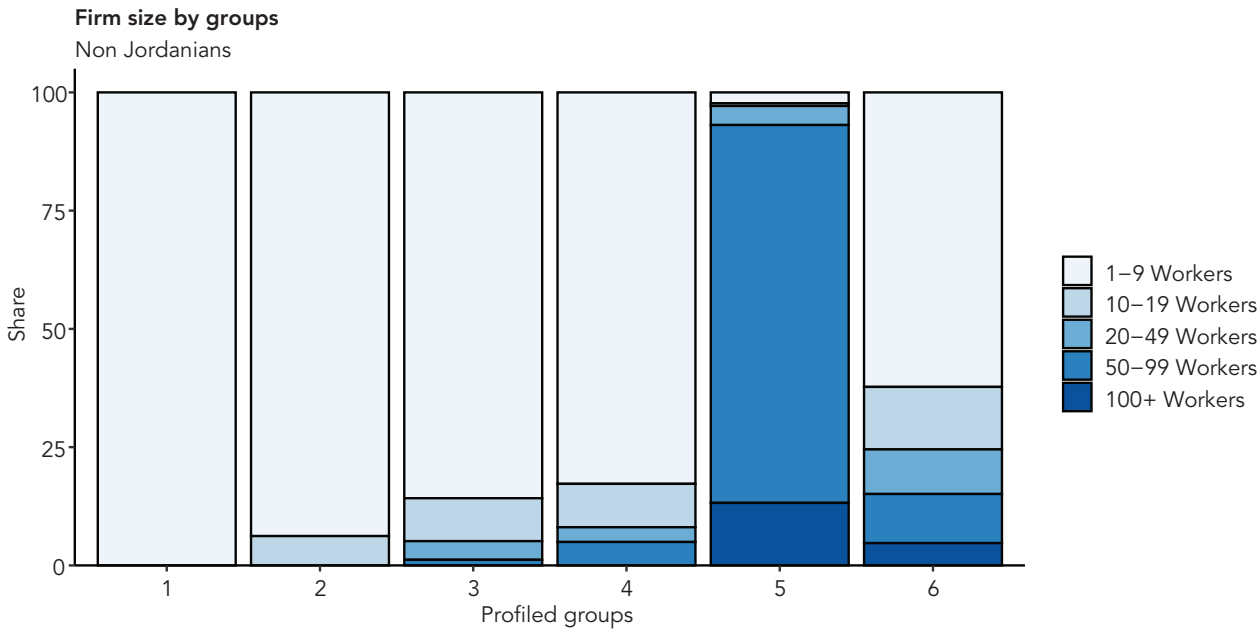
Source: Own calculations based on DS (2018) Labor Force Survey 2018.

FIGURE C.41. Informality clusters among employed non-Jordanian males by governorates



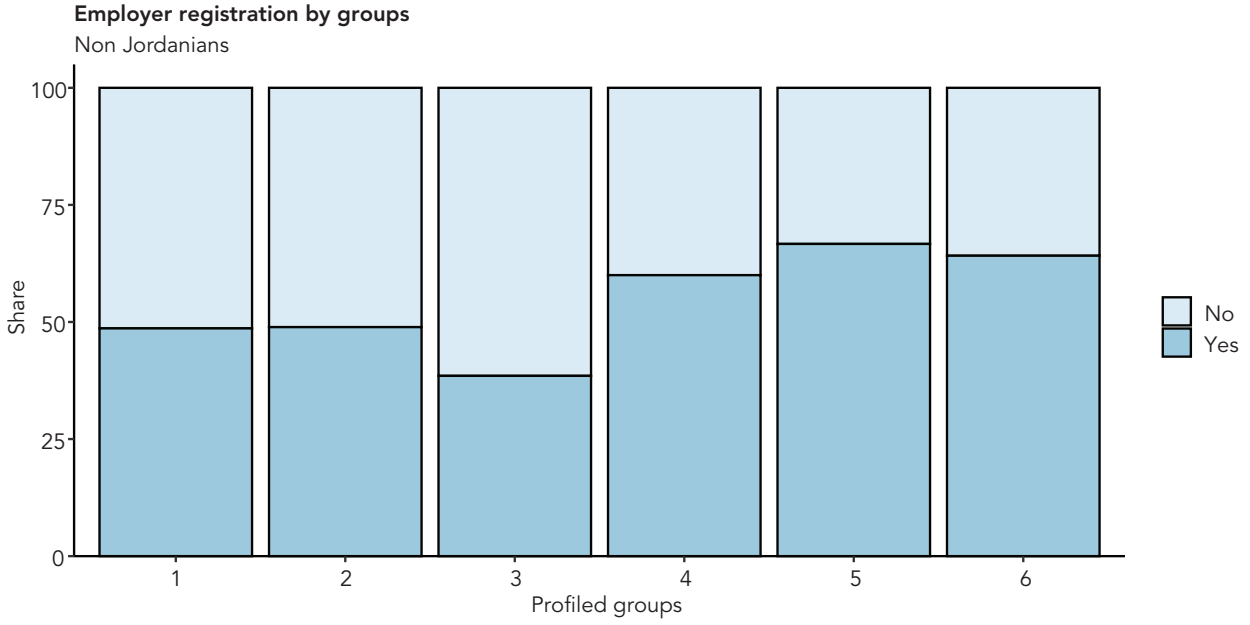
Source: Own calculations based on DS (2018) Labor Force Survey 2018.

FIGURE C.42. Informality clusters among employed non-Jordanian males by firm size



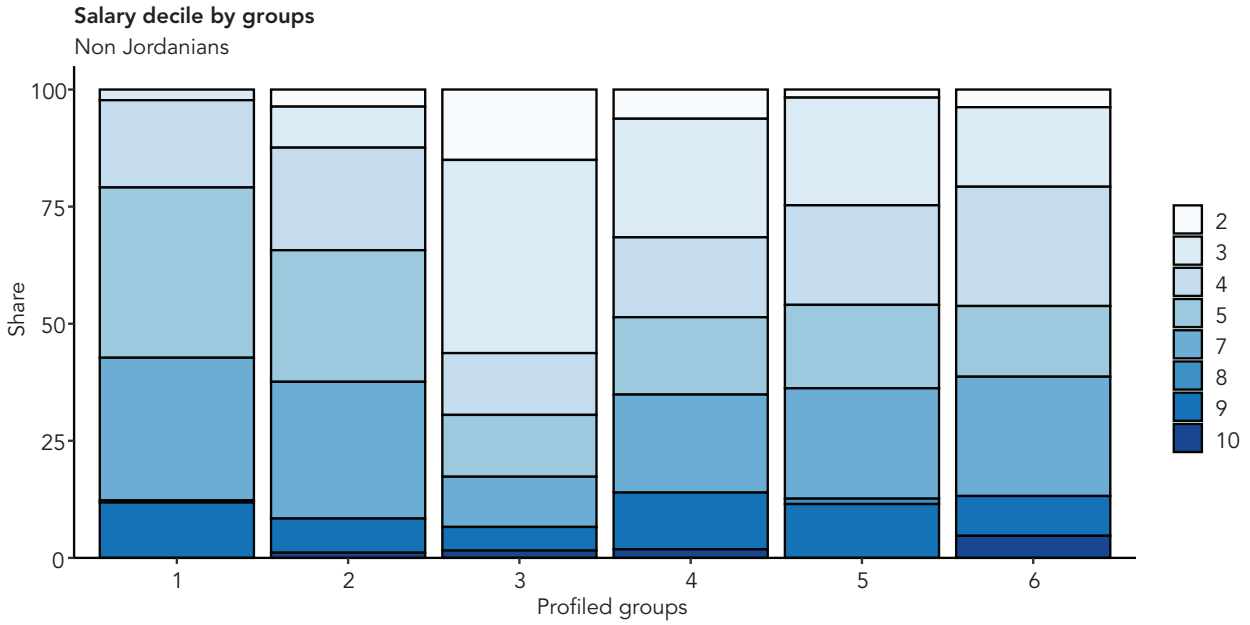
Source: Own calculations based on DS (2018) Labor Force Survey 2018.

FIGURE C.43. Informality clusters among employed non-Jordanian males by firm registration



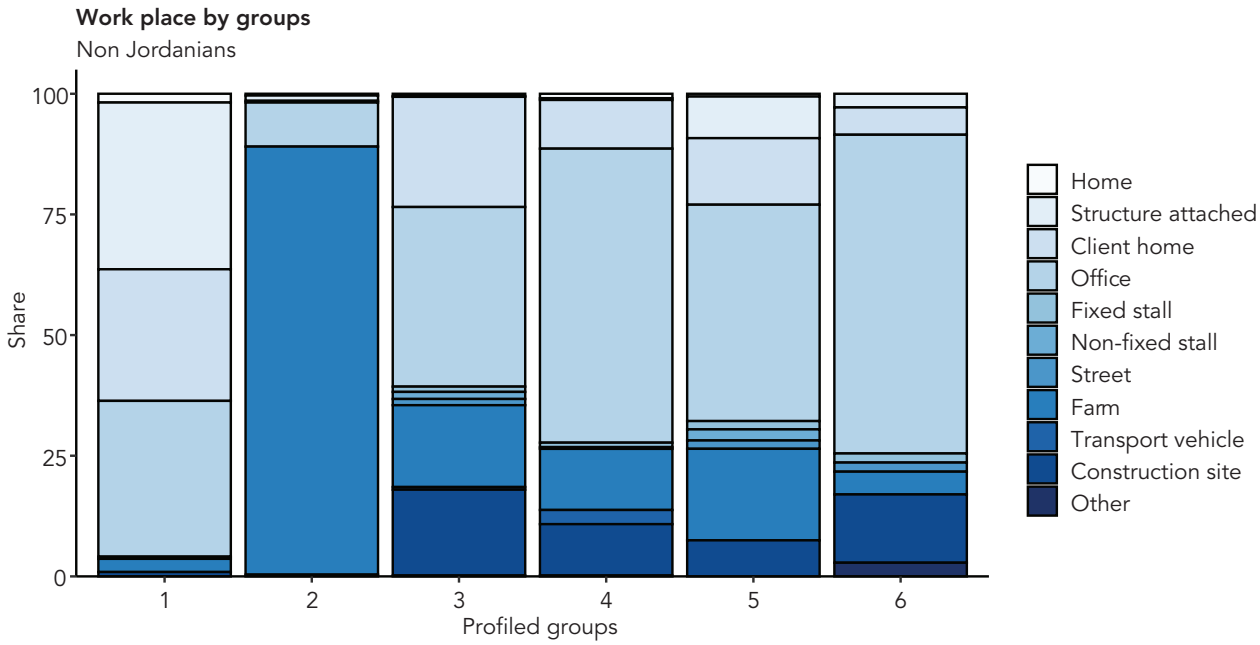
Source: Own calculations based on DS (2018) Labor Force Survey 2018.

FIGURE C.44. Informality clusters among employed non-Jordanian males by salary deciles



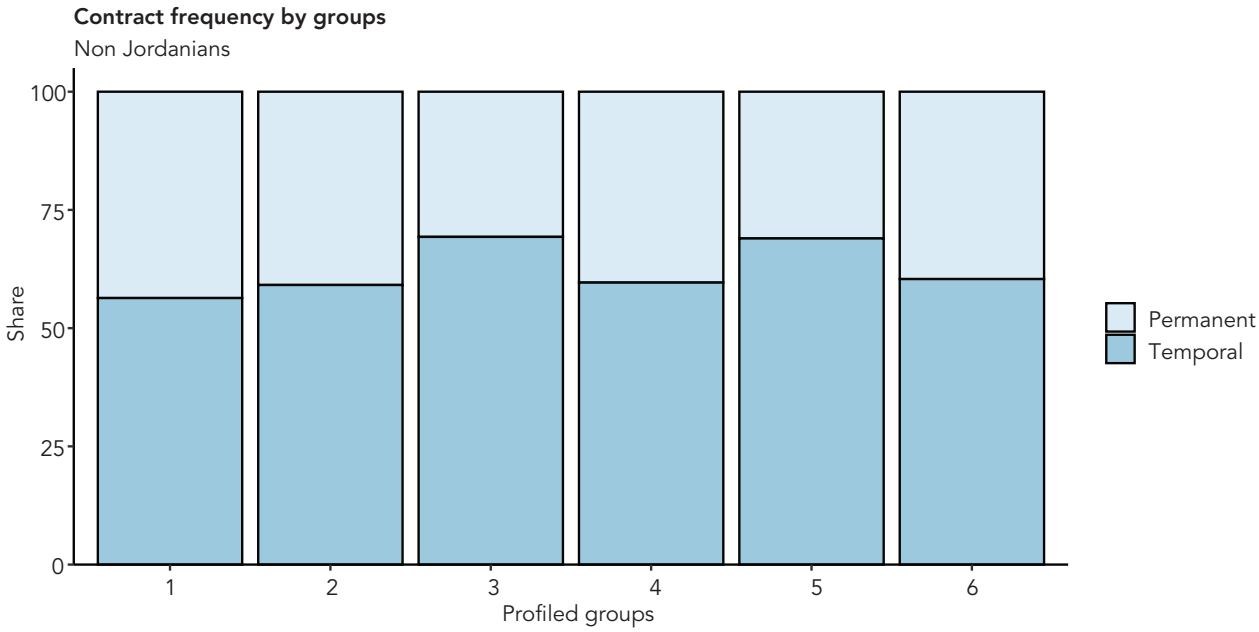
Source: Own calculations based on DS (2018) Labor Force Survey 2018.

FIGURE C.45. Informality clusters among employed non-Jordanian males by workplace



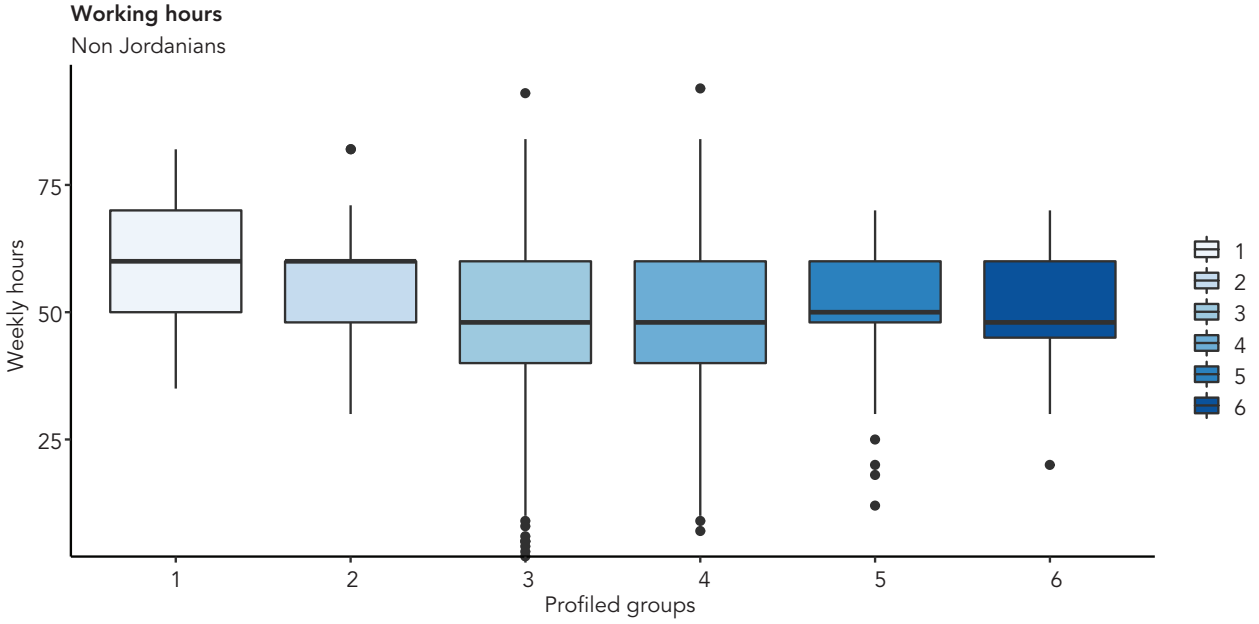
Source: Own calculations based on DS (2018) Labor Force Survey 2018.

FIGURE C.46. Informality clusters among employed non-Jordanian males by contract



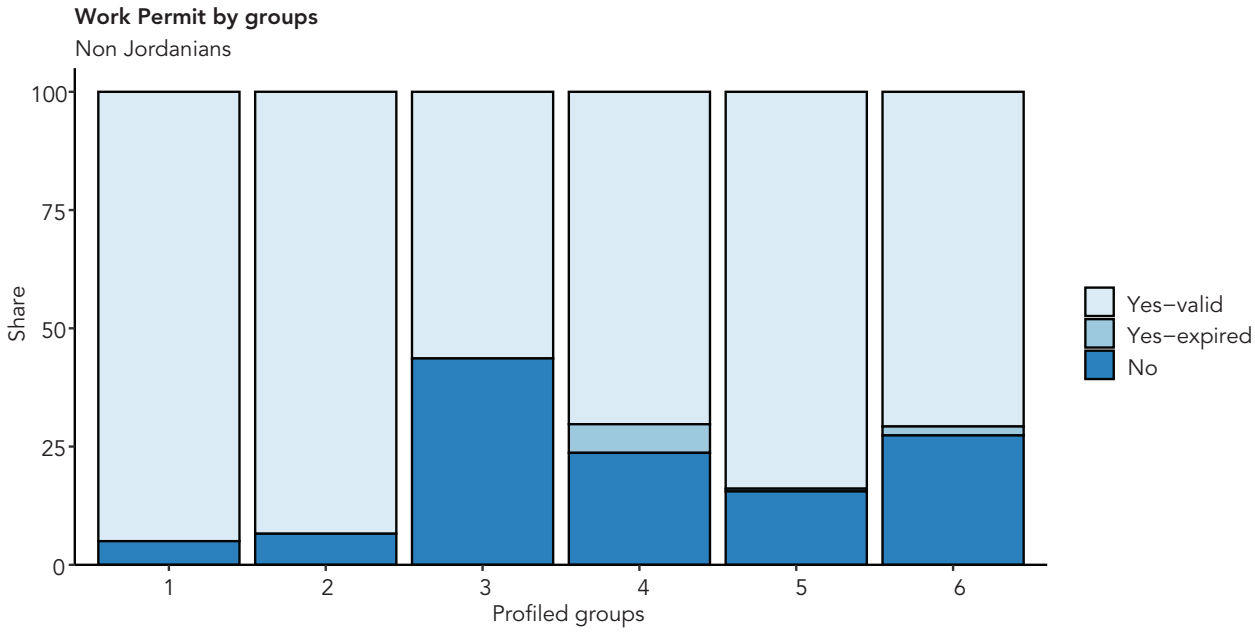
Source: Own calculations based on DS (2018) Labor Force Survey 2018.

FIGURE C.47 Informality clusters among employed non-Jordanian males by working hours



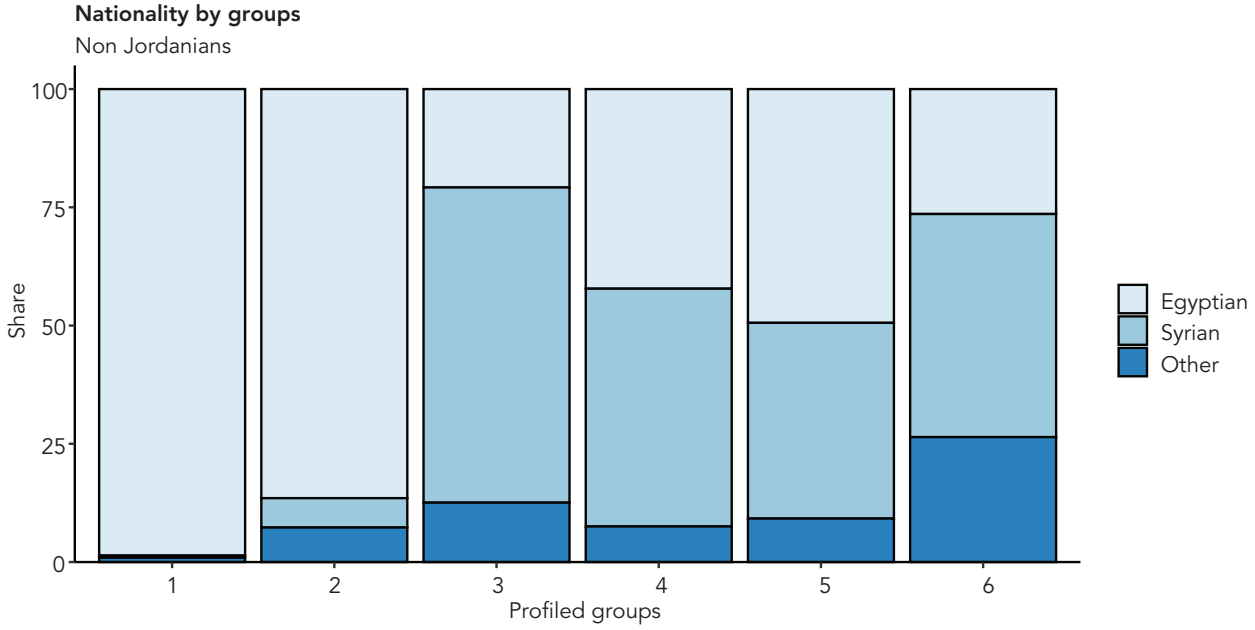
Source: Own calculations based on DS (2018) Labor Force Survey 2018.

FIGURE C.48. Informality clusters among employed non-Jordanian males by working permit



Source: Own calculations based on DS (2018) Labor Force Survey 2018.

FIGURE C.49. Informality clusters among employed non-Jordanian males by nationality



Source: Own calculations based on DS (2018) Labor Force Survey 2018.

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ABSTRACT

This paper exploits a rich database to provide comprehensive profiling of informality in Jordan, including who informal workers are, their characteristics, and where they work, as well as providing policy recommendations to address informality. The structural framework developed through the comprehensive profiling is followed by an analysis of why workers are informal, using inferential multivariate analysis. Statistical techniques (that is, cluster analysis) are used to group workers by similar characteristics (including education, gender, income, and form of employment) to allow policy makers to pinpoint specific policy tools that can target each group. The paper offers long term policy solutions to address informality, including fostering competition to boost productivity and providing a level playing field. It also proposes short- and medium-term policy options to protect workers against shocks until more productive jobs are created, for instance through the provision of short-term benefits through defined contribution schemes. Heterogeneity is addressed by tailoring policy instruments to clusters of workers.

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