

## THE FORMALISATION OF WOMEN'S COOPERATIVES AND THE REDUCTION OF THE INFORMAL ECONOMY IN JORDAN, FACT OR FICTION?

### *LA FORMALIZACIÓN DE LAS COOPERATIVAS DE MUJERES Y LA REDUCCIÓN DE LA ECONOMÍA INFORMAL EN JORDANIA, ¿REALIDAD O FICCIÓN?*

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#### ABSTRACT

This study examines the possible influence of formalising women's cooperatives on Jordan's informal economy. At the same time, to produce empirical evidence from a theoretical perspective, we study how the crucial challenges of the informal economy affect formalisation. This is an empirical study, both descriptive and inferential, in which several databases are used to extract the relevant data from the sample of 66 Jordanian women's cooperatives in the period from 2011 to 2020. A dynamic panel data model is used for the study variables with controlling for specific fixed effects. The findings indicate that the formalisation policy in the cooperative sector does not affect the informal economy. Instead, the challenges significantly affect the informal economy

*Keywords:* Corruption, formalisation, informal economy, refugees, women-cooperatives.

#### RESUMEN

Este estudio examina la posible influencia de la formalización de cooperativas de mujeres en la economía informal de Jordania. Al mismo tiempo, para producir evidencia empírica desde una perspectiva teórica se estudia cómo afectan los desafíos cruciales de la economía informal a la formalización. Se

trata de un estudio empírico tanto descriptivo como inferencial en el que se emplean varias bases de datos para extraer los datos relevantes de la muestra de 66 cooperativas de mujeres jordanas en el periodo de 2011 a 2020. Se utiliza un modelo de datos de panel dinámico para las variables de estudio con control de efectos fijos específicos. Los hallazgos indican que la política de formalización en el sector cooperativo no afecta la economía informal. Por el contrario, los desafíos afectan significativamente a la economía informal.

*Palabras clave:* corrupción, formalización, economía informal, refugiados, cooperativas de mujeres.

*JEL Classification / Clasificación JEL:* D73, I28, O17, P33.

## 1. INTRODUCTION

Since the beginning of the industrial revolution, lineaments of the informal sector have emerged, in which informal workers were not adequately regulated (Yusuff, 2011). The informal economy concept has been recently introduced by (Hart, 1973). He described the informal workers as a part of the urban labour force who work outside the formal sector. Therefore, prior studies defined the informal economy as an unstable economy (Ferman and Ferman, 1973; Pride and Tatenda, 2017), the underground economy (Gutmann, 1977), the grey, the black, the shadow, the hidden and the unmonitored economy (Gyls, 2005; Iversen et al., 2006; Novkowska and Novkovski, 2018).

After declining the formal sector due to the economic fluctuations and accelerating the informal sector as an alternative, a global vision has appeared about the necessity of legislating the informal economy activities to remain within the legal frame in order to protect the informal workers' rights and to be more gradually incorporated into the formal economy. However, informal workers are still without their rights, either all or some (Vinh Khuong et al., 2021). Therefore, the craved results of the formalisation policy on the informal sector may be insufficiently remarkable due to a range of challenges affecting policymakers' decisions in developing countries. The state's goal is to achieve sustainable development by creating policies to address the informal economy by studying the theoretical approaches to this economy; that is what we are looking at because the consistency between the theoretical approaches to informality and formalisation policy is unclear, according to Lince (2011). Moreover, these challenges affecting the policy of formalising the informal sector have been neglected, with fruitless results in many developing countries, to the best of our knowledge. Accordingly, the political, economic, and sociocultural environment related to the gender dimension should be considered to empirically determine the formalisation policy's ability to decline the informal economy, especially women in developing countries, and whether it is based on realistic grounds. Therefore, the issue of the study revolves around the following questions: does the policy of formalising women's cooperatives contribute to reducing the size of the informal economy in Jordan? Hence, how do crucial challenges affect the informal economy in Jordan?

There are many challenges mentioned in the prior studies that explain the futility of formalising the informal sector due to the deficiencies and weaknesses in the government apparatus in developing countries, as the

structural relationships of dependence and exploitation (Gaiger, 2017), rising interest rates, inflation and unemployment (Tanzi, 1999), varying income and social inequality (Berdiev and Saunoris, 2019), and increasing competition for low-wage jobs between refugees and local labour (Altındağ et al., 2020). In contrast, proponents consider that successful economic development depends on the formalising of the informal economy due to its far-reaching positive implications, especially regarding women's empowerment efforts and increasing their participation in the workforce (ILO, 2018).

This paper is organised as follows. First, Section 2 outlines the theoretical framework for the study, and Section 3 describes the experimental framework used to achieve the research objective. Then, Section 4 considers descriptive analysis and hypothesis testing, and Section 5 discusses the study results. Finally, Section 6 concludes the study by presenting research findings and policy implications.

## 2. THEORETICAL FRAMEWORK

The national context defines the policies needed to reduce social and economic instability due to crises (Kalleberg & Hewison, 2013). Besides, it is not in the interest of the developing country to recognise the phenomenon of precariousness, in which the availability and conditions of work are unstable (Arnold & Bongiovi, 2013), because it will contribute to changing the stereotyped image of political and economic reform in front of international donors (Burawoy, 2010). Therefore, the developing country seeks to present political and economic stability that addresses precarious work, protects the informal workers and reduces the marginalisation of certain labour groups by adopting the formalisation policy (Bernstein, 2007).

However, reliance on this policy in achieving sustainable development is often unsuccessful due to the inefficient use of resources by governments (Schneider and Enste, 2000), elite corruption (Develtere, 1993), and adverse effects on marginalised groups (Putzel et al., 2015).

### 2.1. GLOBAL VISION ON THE FORMALISATION OF THE INFORMAL ECONOMY

The informal economy has grown significantly worldwide, especially in developing countries (Gerry, 1987; Islam and Alam, 2019). As a result, it has been considered a phenomenon highlighted by global agencies such as the International Labour Organization (ILO) of the United Nations and the Social Protection Unit of the World Bank. Therefore, it has become an undeniable phenomenon that may promote economic reform if sound policies are followed (Huang, 2009).

The ILO was awarded the (1969) Nobel Prize for its successes in building the social infrastructure for peace and establishing principles of justice through which workers' working conditions and social rights can be improved. From these principles, workers in the informal economy have been described as

having no job security, receiving little or no benefits, and often their rights not protected by government labour laws (Huang, 2009).

However, it was necessary to conduct an in-depth study to measure the extent of the harm caused to the informal workers due to not obtaining their rights and what policies can be adopted to mitigate this harm. At this point, the definition of "formalisation policy" has appeared as obtaining state recognition of the rights of informal workers under specific conditions and including their activity in the GDP (Kelly & Peluso, 2015; Meinzen-Dick & Mwangi, 2009). However, in the context of this process, the rights of all informal workers are not considered though and recognised. Besides, much of the previous literature has studied the informal economy. However, it is difficult to measure the economic impact of the informal sector due to the difficulty of defining and defining the categories of informal workers, the limited information available, and the country specificities (Portes and Schauffler, 1993).

## 2.2. EMPLOYING THE THEORETICAL PERSPECTIVE OF THE INFORMAL ECONOMY FOR THE POLICY OF FORMALISING THE COOPERATIVE SECTOR

The global vision is based on the necessity of legislating the informal economy activities to remain within the legal frame to protect the informal workers' rights and gradually incorporate them into the formal economy, promoting economic reform. Besides, cooperatives are considered a successful empirical ideal associated with formalising the informal sector (ILO, 2020). Moreover, defenders of cooperation have pointed out that cooperatives can be relied on for social development and economic growth to align their values with traditional values and local social perspectives (Schwettmann, 2014).

In contrast, critics focus on the decline in cooperatives in developing countries, even after adopting the formalisation policy, due to the incompetence of the population or encroachment of local governments and elites on cooperatives for personal interests (Develtere, 1993). According to the theory of modernisation (Wilson, 1998), the marginalisation of cooperatives is possible as long as cooperative members' skills and educational level do not help them achieve social development and economic growth.

According to dependency theory, cooperatives have been legislated even though they are built on weak foundations such as little capital, low technology and production, poor efficiency, and few profits. Due to they seek survival and not maximise profits, cooperatives accept exploitation and work as subcontractors to avoid taxes and regulations (Wilson, 1998). Besides, the dependency theory is in harmony with the structuralist theory so that the capitalist system may exploit the members and workers of cooperatives to maintain competitiveness due to their low wages and reduced manufacturing costs (Maloney, 2004).

On the neoliberal view, formalising the informal economy is a prerequisite for attracting foreign aid to improve economies in developing countries. In contrast, donors do not offer practical programs that help the targeted sectors,

including cooperatives, due to the weaknesses in the government apparatus and corruption of government agencies in developing countries (Williams, 2015).

In the informal sector, cooperatives are considered more organised groups and belong to the informal economy (Bonner and Spooner, 2011). Besides, cooperatives are measurable and related to formalisation policy by transforming marginal survival activities to legally protected work, fully integrated into the formal economy (Schneiberg et al., 2008; ILO, 2020).

### 2.3. WOMEN-COOPERATIVES IN JORDAN

Since the early 1950s, the beginning steps of the Jordanian cooperative movement were prompted by government support to make it the primary player in sustainable development. As a result, the cooperative sector in Jordan is the third developmental sector that works alongside the public and private sectors to develop the production, consumption, and service sectors as an alternative to privatisation (Pestoff, 1992).

However, the Jordanian social and cultural environment creates a load of burdens on women. Although the successive governments always adopt women issues within empowerment programs supported by international agencies. Jordanian women's accomplishments in the labour market are still a weakness, leading to a waste of money and energy. According to a study issued by the World Bank (2021), the participation of women in the labour force in Jordan is the lowest in the world, in a country that is not at war, where Jordanian women are among the most educated women in the Middle East and North Africa region. However, women's participation rates are weaker (14%) than 54.8% of men.

Despite their modest accomplishments, Jordanian women left their mark in the Jordanian cooperation sector. The total number of women cooperatives working and registered by the Jordan Co-operative Corporation (JCC, 2021) reached 78 women cooperatives distributed in the governorates of Jordan until 2020. Their contributions are often concentrated in manufacturing handicrafts, popular costumes, and products extracted by aromatic oils, establishing kindergartens, manufacturing handmade foodstuffs like pickles, dairy, and catering services to offer traditional Jordanian dishes.

### 2.4. CHALLENGES AFFECTING THE INFORMAL ECONOMY IN JORDAN

After addressing the theoretical approaches to informality, we found that formalising cooperatives to incorporate them within legal frameworks to protect workers' rights lies in the availability of an environment free of challenges that play a prominent role in increasing the informal economy. Therefore, addressing the most critical challenges affecting the informal sector is necessary.

### 2.4.1 FOREIGN AID

According to the balance of power theory in international relations, major powers seek to increase their hegemony by building alliances with countries in conflict areas to prevent any other country from gaining sufficient military power to control all weak states (Kegley and Wittkopf, 2006). These alliances resort to granting aid that may contribute to developing infrastructure and strengthening the local economy of developing countries, which defines the broad outlines of the policies of these countries (Park, 2019). Conversely, some critics claim that providing foreign aid contributes to the backwardness of developing countries by fueling dependency and weakening the governance, administrative capacity, or even legitimacy of Middle Eastern countries (Shleifer, 2009).

Prior studies indicate that the World Bank and the International Monetary Fund present practical solutions for market liberalisation. However, these solutions increase interest rates, taxes, inflation, and unemployment (Schneider and Enste, 2000; Tanzi, 1999) and worsen income and social inequality (Berdiev and Saunoris, 2019). Moreover, the consequences of employing these donors' reforming economic solutions will make cooperatives resort to tax evasion or act as subcontractors due to their inability to meet the local market's needs (Ring and Van de Ven, 1992).

### 2.4.2 CORRUPTION

Developing countries that often suffer from high corruption and poor institutional arrangements give large shadow economies (Saha et al., 2021). Besides, stifling bureaucratic interference and corruption at every stage of economic activities is one of the main reasons behind high participation in informal sectors (Dutta et al., 2013).

In another respect, the Carnegie Endowment for International Peace in Washington published an article prepared by Young (2021) with author David Linfield who indicates that international and US donors have focused on economic liberalisation rather than political reform, supporting elites and governments to exploit resources to support authoritarian regimes rather than supporting popular demands for political, social, and economic reform. However, the United States prefers democracies but does not seem to pay attention to the quality of governments in the receiving countries because the democracies are likely to promote world peace which helps economic growth (Alesina and Weder, 2002).

According to Transparency International's report (2020). Jordan has a score of 49 in the Corruption Perceptions Index, which is considered a high score, and it ranks 60 globally in terms of corruption rooted in the country. These indicators call for pessimism regarding the seriousness of Jordanian governments to build a cohesive infrastructure developing the informal

economy sustainably, especially for women-cooperatives, even if Jordan is one of the largest beneficiaries of foreign aid.

### 2.4.3 CONTINUOUS INFLUX OF REFUGEES OVER TIME

Previous studies indicate that the continued influx of refugees affects the informal economy. Altındağ et al. (2020) indicated that most Turkish companies prefer refugees, especially in the construction and hospitality sectors, because they positively affect production rates even if their activity is informal. However, the impact of refugees on the informal economy more appears evident in a region that has always experienced waves of refugees over decades. The Middle East is one of the most complex and conflict-prone regions due to the ethnic hegemony and demographic change imposed by the waves of refugees over time. Besides, Jordan is considered one of the countries most affected by refugee waves as it is located in conflict areas. The first wave of refugee influx was in 1948, and Jordan is still receiving vast numbers of refugees, with the ratio of refugees to the total population reaching 29.36% in 2019, according to the World Bank (2021).

Therefore, this paper examines the possibility of influencing the informal economy by adopting the policy of formalising women-cooperatives and addresses the most crucial challenges affecting the informal economy such as foreign aid and corruption with the presence of fixed-effect factors such as (i) time-specific effects that represent the temporal changes before and after the wars in the Middle East, and (ii) demographic region-specific effects which are represented by the presence of female refugees either in camps or rural areas due to the ease of life.

## 2.5. DEVELOPING HYPOTHESES

After addressing the consistency between the theoretical approaches to informality and the transition to formalising the informal sector, we found that Jordanian governments that are like the rest of developing countries bet on the ingenuity, entrepreneurship, and rationality of women-cooperatives in creating income opportunities and alleviating their poverty in the context of the high cost of legitimacy in taking into account the fixed effect factors (Jonasson, 2012). This step is necessary to prevent the marginalisation of cooperatives, succeed in the formalisation policy, and reduce the informal economy's size (Bonner and Spooner, 2011). Therefore, this study assumes that the contribution of Jordanian women in the cooperative sector to the gross domestic product affects the informal economy's size. Hence, the first hypothesis of our study is as follows:

H1<sub>a</sub>: The formalisation policy that represents creating income opportunities for women's cooperatives reduces the informal economy in Jordan in tune with fixed effects.



However, the craved results of the formalisation policy on the informal sector may be insufficiently remarkable due to a range of challenges affecting policymakers' decisions in developing countries with the absence of fixed effects. Therefore, this study addresses the most crucial challenges affecting the informal economy with fixed effects to produce empirical evidence from a balanced theoretical perspective away from related fiction of formalisation. Therefore, the second sub-hypotheses of our study are as follows:

H2a: Foreign aid affects the informal economy in Jordan in tune with fixed effects.

H2b: Corruption affects the informal economy in Jordan in tune with fixed effects.

### 3. EMPIRICAL FRAMEWORK

#### 3.1 DATA SOURCES

In this study, several sources are used to extract the relevant data. First, synchronously, the economic data of GDP was extracted by using both the World Bank and the Ministry of Planning & International Cooperation in Jordan. Then, the financial data of women-cooperatives was evoked by using the JCC data source. Besides, data related to the workforce was elicited by utilising the Jordanian Department of Statistics. Finally, the data source of the United Nations High Commissioner for Refugees (UNHCR) extracted official refugee figures and data related to corruption in Jordan extracted by Transparency International from 2011 to 2020.

#### 3.2. MEASURING VARIABLES

##### 3.2.1 INDEPENDENT VARIABLE

As a form of the informal sector, the women-cooperative is selected as a research population because the cooperative sector is an organised household institutional group that can achieve reasonable returns for their members contributing to the gross domestic product (GDP) after formalising them.

Moreover, the profitability of women's cooperatives is generated by the purchasing power of individuals who may wish to benefit from the products and services of women's cooperatives. Thus, the supply and demand for the products and services of cooperatives affect the gross domestic product. Therefore, as we previously assumed, the success of formalising cooperatives is the participation of women in cooperatives, which will generate returns that contribute to economic development and whose efforts will increase their share in the GDP and their share in the world GDP as follows:

$$P_{it} = \frac{\text{ROA achieved by women-cooperatives}_{it}}{\text{Jordan GDP}_t} \times \% \text{ of World GDP}_t \quad (1)$$

### 3.2.2 DEPENDENT VARIABLE

There are many attempts to estimate the size of the informal economy by several scholars and researchers, but only a few of them suggested some informal economy measurement methods. However, it is difficult to measure the economic impact of the informal sector due to the difficulty of defining and analysing the phenomenon and the categories of informal workers, the limited information available, and the country specificities (Portes and Schauffler, 1993). Nevertheless, since the market value of production outputs in economic sectors represents GDP, the performance of the official economy can easily be predicted using time series forecasts as follows in equation (2):

$$P_t = \beta_0 + \beta_1 P_{t-1} + \beta_2 P_{t-2} + \epsilon_t \quad (2)$$

However, given the critical challenges in Jordan, the future outcomes of the policy of formalising the cooperative sector are uncertain that leads to driving resources into the informal sector away from the formal sector (Robertson and Tallman, 1999). In addition, excessive state regulation may force women's cooperatives to create opportunities within the informal economy (Gindling and Newhouse, 2012).

Therefore, we estimated the uncertainty of the contribution of cooperatives to GDP using the forecast model for the financial performance of women's cooperatives and their contributions to the national economy, making it easy to track the hidden performance of these cooperatives. Thus, once the ordinary least square estimates in equation (2) are estimated using linear regression analysis, the prediction model's residuals can be derived from equation (3) since residuals are an unobserved and unpredictable factor in determining the financial performance of women cooperatives (Gyls, 2005). Therefore, we considered the uncertain factor of the contribution of cooperatives to GDP is an appropriate estimation of the hidden performance in the informal economy:

$$\tilde{\epsilon} = P_t - (\tilde{\beta}_0 + \tilde{\beta}_1 P_{t-1} + \tilde{\beta}_2 P_{t-2}) \quad (3)$$

Since the residual values derived from equation (3) may contain positive or negative values, they are squared to make it analogous to variance (Ghosal and Ye, 2015). Therefore, the followed prediction model represents the  $\tilde{\epsilon}^2$ , which is a residuals' square of the hidden financial performance in the women-cooperatives. Consequently, the variance of the contribution of cooperatives to GDP, which is a gap between the utility or futility of formalising of the informal workers' activities in the cooperative sector due to fluctuated challenges, represents the informal economy in the cooperative sector (IE) as followed by equation (4):

$$IE_{i,t} = \sigma^2 (P_{i,t}) = (\tilde{\epsilon}_{i,t})^2 \quad (4)$$

### 3.2.3 CONTROL VARIABLES

By literature, granting aid to developing countries may contribute to developing their infrastructure and strengthening the local economy. Conversely, providing foreign aid is given to elites not to strengthen the local economy, encourage corruption, and contribute to nations' backwardness (Shleifer, 2009). These consequences are a prelude to the increasing growth of the informal economy. However, if there is an orientation to sustainably promote economic development and strengthen the cooperative sector, what portion of foreign aid should be allocated to the cooperative sector as a part of economic development to decrease the informal economy?

There are two types of foreign aid; grants and concessional loans. Firstly, the grant equivalent is the amount of the grant itself and the amount subsidised through below-market terms at the time of commitment. In comparison, concessional loans involve the computation of the expected present value of the stream of debt service obligations associated with the loan under consideration (Chang et al., 1998). This study addresses the first type of foreign aid and its effect on the informal economy. In other words, the grant equivalent ( $G$ ) measures the shortfall between the loan amount outlay ( $LD$ ) and the service payments of the non-concessional loan ( $SP$ ) as follows:

$$G = LD - SP \quad (5)$$

Because the grant remains the same amount as a pure, no service payments are allocated for ( $SP = 0$ ), the grant equivalent is the grant itself ( $G = LD$ ), and the grant element ( $y$ ) is as follows:

$$y = \frac{G}{LD} \quad (6)$$

Hence, this study addresses the pure grant of foreign aid and proposes a measure that represents a portion of foreign aid allocated to the cooperative sector as a part of the informal economy as follows:

$$InFA_{i,t} = (y \times IE_j)_t \quad (7)$$

As for corruption, this study depends on five corruption indexes to measure the corruption in Jordan: the corruption perceptions index (CP), the freedom from corruption index (FC), the regulatory quality index (RQ), the fictionalised elites index (FE) and the state legitimacy index (SL). However, their indexes associated with measuring corruption differ in measured units, where the corruption perception index scales from 0 to 100, with zero indicating a very high level of corruption and 100 being zero corruption. Besides, the freedom from corruption index from 0 to 100, where 100 is the highest freedom, the regulatory quality index is from -2.5 (weak) to 2.5 (strong), fictionalised elites

index is from 0 (low) to 10 (high), and state legitimacy index is from 0 (high) to 10 (low).

Since these indexes use different units of measure, the main challenge is to re-measure the data extracted by standard units of measure. Therefore, this study assumes that perceived corruption contributes to an unremarkable increase in the informal sector that the World Bank has adopted. By interacting Z that represents a z-score of each source for corruption indexes, k, and year, t, with the informal sector to get a combined score of corruption X. Therefore, we relied on the z-score of each index (Z) and its interaction with the informal economy's size to determine which one of the corruption indexes increases the informal economy, decreasing success in formalising women-cooperatives as follows:

$$X_{k,t} = \sum_{i=1}^n (IE_{i,t} \times Z_{k,t}) \quad (8)$$

Finally, due to the waves of refugees coming to Jordan over the decades, the percentage of refugees compared to Jordanians has become more aggressive and unprecedented, threatening the interests of ordinary citizens and crowding them out of their jobs. However, through the data obtained from the UNHCR in Jordan, most refugees are women, and their participation in the labour force is within specific areas.

As we have mentioned before, the possibility of a decrease in the performance of the women's cooperative is related to its presence in rural areas. Therefore, this study divided the Jordanian regions into urban, rural, and Badia. The DumRuf is a dummy variable equal to 1 if the region is full of female refugees, otherwise zero, concerning time-specific effects that represent the temporal changes before and after the wars in the Middle East. For facilitating definitions, Table 1 provides definitions of study variables.

TABLE 1 . DEFINITION OF VARIABLES

Variables	Definitions
IE	The informal economy
P	The policy of formalising women's cooperatives contribl-knute to reducing the size of the informal economy
InFA	Log. Foreign aid
X	Represents one of the corruption indexes
FC	The freedom from corruption index
CP	The corruption perceptions index
RO	The regulatory quality index
FE	The fictionalised elites index
SL	The state legitimacy index
DumRuf	Dummy variable of female refugees equals (1) if the region is full of female refugees, otherwise zero
Year	Time-specific fixed-effects

### 3.3 ECONOMETRIC MODEL

By modelling the informal economy in the cooperative sector according to the variables described in the previous section, we estimated the econometric model by using fixed effects as the following equation (9):

$$IE_{i,t} = \alpha_0 + \beta_1 P_{i,t} + \beta_2 \ln FA_{i,t-1} + \beta_n X_{k,t-1} + \gamma DumRuf_{i,t} + \gamma Year_{i,t} + \varepsilon_{i,t} \quad (9)$$

Given some study variables considered fixed over the period, we built panel data that allows empirical tests of a range of study hypotheses from 2011 to 2020. The omitted variable bias or the unobserved heterogeneity that varies across variables but does not vary over time can be controlled by panel data (Baltagi, 2005).

## 4. FINDINGS

Referring to the data issued by the (JCC, 2021), we found that the total registered cooperatives until 2020 amounted to 1420, of which 765 cooperatives have been operating in a decade. The total number of women cooperatives reached 78 distributed in the Jordanian governorates until 2020. Therefore, we have defined the ideal sample size by using the Steven Thompson equation to calculate the optimal sample size at a confident level of 95% for a total of 66 women's cooperatives (Steven, 2012). Besides, the outliers are treated by implementing the 1.5 IQR rule to be more homogeneous among each variable's observations.

### 4.1. DESCRIPTIVE STATISTICS

Initially, the study data is described, whether central tendency and dispersion measures, but this stage does not make inferences from the sample. The main variable features used in this study are reported in Table 2.

In this table, the IE mean is 0.004, and its standard deviation is 0.0043. This data indicates that the standard deviation tends to be close to the expected value of the set. Besides, the purpose of formalising women's cooperatives is to reduce the size of the informal economy, especially in the cooperative sector, where the P's mean is 0.066 with a bit of high standard deviation of 0.112, which indicates that the values are spread out over a broader range. For the lnFA, the mean is 15.4, and its standard deviation is 2.036, which indicates that most foreign aid is spread out over a narrow range of cooperatives. Besides, the descriptive results of corruption indexes provide initial outcomes about the convergence between the mean and the standard deviation values, which all data of values tend to be close to the average. However, this study considers the refugees' factor as a dummy variable DumRuf, with a mean of 0.3 and a

standard deviation of 0.46, indicating that the data values are spread over a broader range of values.

As mentioned above, the presence of refugees is on a demographic basis.

TABLE 2. DESCRIPTIVE ANALYSIS

Variable	Mean	Std. Dev.
IE	0.003984	0.0043365
P	0.0656497	0.1120534
InFA	15.39956	2.036114
FC	-0.0004817	0.0004118
CP	-0.0009774	0.0012173
RO	0.0006353	0.0011666
FE	0.0068617	0.0070811
SL	-0.0067622	0.0071574
DumRuf	0.3030303	0.4599168

Most female refugees are located in camps and rural areas with their children due to the low cost of living there. Therefore, the possibility of a decrease in the performance of the women's cooperative is related to its presence in rural areas. This study utilises dummy variables to separate the demographic subgroups; the first demographic group equals (1) if the region is full of female refugees, otherwise zero (Sawyer, 1986). In Table 3, the two-sample t-test is used to test the mean of the two sub-samples since the null hypothesis states that the means of the two samples are equal as follows:

According to the above results, we rejected the null hypothesis because the p-value (0.0123) is smaller than the significance level (0.05). Thus, statistically,

TABLE 3. TWO-SAMPLE T-TEST WITH EQUAL VARIANCES

Group	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf. Interval]	
Free of Refugees	460	0.004101	0.000203	0.004349	0.003702	0.004499
Full of Refugees	200	0.003716	0.000305	0.000305	0.003116	0.004316
Combined	660	0.003984	0.000169	0.004337	0.003653	0.004315
Diff.		0.000385	t state			1.0472
Pr(T <= t) two tail		0.00127	Degree of Freedom			658

whether operated in the region full of female refugees and free of refugees, women's cooperatives are significantly different concerning the success of formalisation.

## 4.2. HYPOTHESIS TESTING

Table 4 shows the Pearson correlation coefficient to reveal an association between variables, a measure of linear correlation between two sets of data, and ignores the type of relationship as follows:

TABLE 4. CORRELATION ANALYSES

## Panel A. Whole of sample

Variables	IE	P	InFA	FC	CP	RQ	FE	SL
IE	1							
P	-0.052	1						
InFA	0.606 *	0.054	1					
FC	-0.388 **	0.023	-0.412 **	1				
CP	-0.529 **	0.093 *	-0.415 **	0.392 **	1			
RQ	0.025 *	0.062	0.088 *	-0.373 **	-0.145 **	1		
FE	0.758 **	-0.004	0.693 **	-0.383 **	-0.488 **	0.161 **	1	
SL	-0.750 **	-0.034	-0.772 **	0.343 **	0.491 **	-0.183 **	-0.885 **	1

## Panel B. Free of refugees

Variables	IE	P	InFA	FC	CP	RQ	FE	SL
IE	1							
P	-0.023	1						
InFA	0.573 **	0.102 *	1					
FC	-0.405 **	0.012	-0.411 **	1				
CP	-0.538 **	0.034	-0.399 **	0.4285**	1			
RQ	0.017 **	0.027	0.116 *	-0.361 **	-0.151 *	1		
FE	0.763 **	0.063	0.682 **	-0.418 **	-0.504 **	0.212 **	1	
SL	-0.741 **	-0.093 *	-0.714 **	0.354**	0.493 **	-0.242 **	-0.892 **	1

## Panel C. Full of refugees

Variables	IE	P	InFA	FC	CP	RQ	FE	SL
IE	1							
P	-0.124	1						
InFA	0.681 **	-0.0546	1					
FC	-0.344 **	0.053	-0.414 **	1				
CP	-0.505 **	0.235 **	-0.450 **	0.301 **	1			
RQ	0.037	0.139 *	0.025	-0.400 **	-0.129	1		
FE	0.744 **	-0.166 *	0.715 **	-0.296 **	-0.447 **	0.042	1	
SL	-0.775 **	0.119	-0.797 **	0.311 **	0.486 **	-0.036	-0.868 **	1

Note: (\*) and (\*\*) indicate the significant correlation at the 0.05 and 0.01 levels, respectively.

Note: (\*) and (\*\*) indicate the significant correlation at the 0.05 and 0.01 levels, respectively.

As for panel A, the results indicated no correlation between the formalising women's cooperatives P and the size of the informal sector IE. Conversely, the portion of foreign aid InFA that should be allocated to the cooperative sector as a part of economic development is employed for other purposes, which

leads to an increase in the size of the informal economy at the significance level of 5% ( $p < 0.05$ ).

Furthermore, corruption is closely related to increasing the informal economy. Firstly, there is a significant reversed relation between FC and IE at the significance level of 1% ( $p < 0.01$ ). Because of corruption, a decrease in economic freedom leads to increased costs, and the diversion of resources into unproductive activities increases the informal economy. Secondly, the inverse correlation between the formal economy and corruption perceptions at the significance level of 1% ( $p < 0.01$ ) is due to CP's scores from zero to 100, with zero indicating high levels of corruption and 100 indicating low levels. For example, Jordan reported a low score of CP related to bribery, fraud, and other forms of public sector corruption that increases the informal economy. Thirdly, there is a bit positive relationship between regulatory quality RO and informal economy IE at the 5% significance level ( $p < 0.05$ ).

However, according to the findings of panel A, the attempts of successive Jordanian governments to legislate the activities of the informal economy to remain within the legal framework to protect the rights of informal workers and to incorporate into the formal economy need to re-evaluation that enhances the development of the cooperative sector. Fourthly, there is a strong positive relationship between the fictionalised elites index FE and the informal economy IE by the 1% significance level ( $p < 0.01$ ). Inefficient use of resources by governments due to the fragmentation of state institutions along class or clan lines. In addition, the use of nationalist political discourse by the ruling elites to constantly intimidate Jordanians over their national security is only in response to power struggles, political competition, and political transformations that continually appears on the credibility of electoral processes, which ultimately leads to an increase in the informal economy. Finally, the results indicate a significant inverse correlation between SL and IE at the significance level of 1% ( $p < 0.01$ ), which gives initial indications about the population's confidence in the state's institutions and operations at the 1% confidence level. The failure of the formalisation policy and increasing the informal economy must be assessed by the implications in the confidence absence, which is manifested by mass public demonstrations. In many developing countries, it may amount to continuous civil disobedience or the emergence of armed insurgencies. The results are almost the same for panels B and C as for panel A, with a slight difference in correlation strength.

According to (Tabachnick and Fidell, 1996), the independent and control variables with a bivariate correlation of more than 0.70 should not be included in multiple regression analysis. Therefore, we dropped the variable SL to mitigate the multicollinearity problems, but we kept the variable FE because it interests us in this study.

For achieving the main objective of this study about measure the size of the informal economy in the cooperative sector influenced by adopting the formalisation policy, the econometric model of measuring the informal



economy in the cooperative sector according to the study variables with the presence of fixed effects is tested as follows in Table 5:

TABLE 5. FIXED EFFECTS REGRESSION RESULTS

Comparison between models with IE variable									
Model	Whole sample			Free of Female Refugees			Full of Female Refugees		
	Coeff.	S.E.	Sig.	Coeff.	S.E.	Sig.	Coeff.	S.E.	Sig.
P	-0.00051	0.00125		-0.00154	0.001539		0.00191	0.00232	
lnFA	0.00027	0.00008	***	0.00024	0.000094	***	0.00036	0.00017	**
FC	-0.06125	0.35156		0.12175	0.408676		-0.79763	0.70729	
CP	-0.7545	0.12705	***	-0.73262	0.151808	***	-0.83708	0.23702	***
RQ	0.27995	0.13937	**	0.52797	0.163390	**	-0.23837	0.29240	
FE	0.33805	0.02341	***	0.34548	0.027710	***	0.30867	0.04566	***
Constant	-0.00342			-0.00251			-0.00562		
R2 within	0.5969			0.6265			0.5858		
Prob > F	1.12		*	1.34		*	0.73		*
Year	Yes			Yes			Yes		
N	660			460			200		

Estimation also includes a dummy for the years (2011-2020).

\*p<0.10; \*\*p<0.05; \*\*\*p<0.01.

Estimation also includes a dummy for the years (2011-2020).

\*p<0.10; \*\*p<0.05; \*\*\*p<0.01.

According to Table 5, subsamples have convergent results compared to the whole sample. Therefore, we enable to standardise these findings into some points. Firstly, the P has no significant effect on IE by which there is no impact in the informal economy by adopting the formalising women's cooperatives policy. Therefore, the H1<sub>a</sub> is rejected. Secondly, the lnFA significantly affects IE at 1% ( $p < 0.01$ ). This result is in line with Peter Bauer, who believes that this aid is given to elites and does not achieve its goals, increases government power, encourages corruption and misallocation of resources, destroys economic incentives, and undermines civic initiatives (Shleifer, 2009). Thus, the portion of foreign aid allocated to the cooperative sector as a part of economic development is employed for other purposes. Thirdly, both RQ and FE significantly affect IE at 5% and 1%, respectively. Besides, the CP has a significantly negative effect on IE at 1% ( $p < 0.01$ ). These results are compatible with previous literature (Dutta et al., 2013; Saha et al., 2021). Finally, regarding the role of time-specific and demographic region-specific fixed effects, it is clear that temporal changes resulting from conflicts in the Middle East that lead to the presence of female refugees either in camps or rural areas have a strong negative impact on IE two samples. Therefore, H2<sub>a</sub> and H2<sub>b</sub> are accepted.

## 5. DISCUSSION

This study examines the possibility of influencing the size of the informal economy by adopting the policy of formalising women's cooperatives after the emergence of the global vision on the need to legislate the activities of the informal economy to remain within the legal framework in order to protect the rights of informal workers to gradually integrate with the formal economy (Huang, 2009). However, the aspired outcomes of formalising the informal sector are not sufficiently marked due to a range of challenges affecting policymakers' decisions in developing countries.

Although Jordan is always ready to implement sustainable development programs offered by international agencies and donors in exchange for foreign aid, these programs may not be commensurate with the economies of developing countries. Instead, these solutions increase interest rates, taxes, inflation and unemployment (Schneider and Enste, 2000; Tanzi, 1999), exacerbate income and social inequality (Berdiev and Saunoris, 2019). To be fairer, it cannot continue to be blamed on foreign aid for all the mistakes made by the governments of developing countries because the purpose of this aid is to provide an endless credit limit for these countries so that they do not go bankrupt regardless of the policies of their governments. Thus, foreign aid effectively discourages governments from learning from and correcting their mistakes (Bovard, 1986). According to McGillivray et al. (2006), poverty increases due to ill-evaluated economic programs by the policy regimes of developing countries. Therefore, developing countries always confirm their willingness to implement sustainable development programs offered by international agencies and donors in exchange for foreign aid despite the corruption rooted in their government apparatus. Besides, David Linfield indicates that international and US donors have focused on economic liberalisation rather than political reform (Young, 2021). Finally, Peter Bauer indicated that donors do not know what investments are appropriate for developing countries and that foreign aid aims to increase the influence of the great powers (Shleifer, 2009).

Moreover, the study results also showed the futility of formalising the informal economy due to the shortcomings and weaknesses of the government apparatus resulting from high levels of corruption that cannot be underestimated (Shleifer, 2009; Alesina and Weder, 2002). Finally, the refugee problem is a chronic problem that has plagued Jordan for decades because it is located in a conflict zone. Thus, female refugees crowd out women working in the cooperative sector for opportunities to improve their economy.

## 6. POLICY IMPLICATIONS AND CONCLUSIONS

The informal economy has become a global issue that scholars and academics search for its causes and find viable solutions. However, these solutions will be useless if the governments of developing countries are not serious about

implementing these solutions to mitigate the effects of the informal economy and achieve sustainable economic development. Furthermore, governments have to change their national policies in their attempts to curb the extent of the shadow economy, such as promoting economic growth (Feld and Schneider, 2010) and financial development (Blackburn et al., 2012), correct application of the concept of democracy (Teobaldelli and Schneider, 2013), bureaucratic quality (Goel and Nelson, 2016), to reach of political stability (Elbahnasawy et al., 2016), and cracking down on corruption (Cooray et al., 2017).

By adopting the policy of formalising women's cooperatives and its effect on the size of the informal economy, this study addresses the most critical challenges affecting the informal economy to produce empirical evidence from a balanced theoretical perspective away from the fiction associated with formalisation. Using a dynamic panel model, study variables are considered by controlling for time-specific fixed effects and region-specific demographic effects. The results of the first hypothesis showed the futility of formalising women's cooperatives. In addition, the formalisation policy needs to be re-evaluated to enhance the development of the cooperative sector.

Despite the foreign aid that Jordan receives annually, the part of the foreign aid that must be allocated to the cooperative sector as part of economic development is employed for other purposes, which leads to an increase in the size of the informal economy. Furthermore, the results indicated that corruption is closely related to the increase in the informal economy. This reinforces the second hypothesis of this study within the effect of the constant refugee flow that increases the informal economy over time.

In sum, this study deals with a new perspective of the informal economy and its mechanism and opens new horizons for researchers about studying the informal economy and the policies related to its treatment within the control of fixed effects.

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