From Protest to Progress:

A study on the association between the Arab Spring and women's empowerment in Jordan

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Abstract: The Arab Spring was a set of political uprisings, taking place in the MENA (Middle East and North Africa) region starting in 2011. The motive of the initial protests stemmed from people's desire for democratic rights, however, some of the protests that followed were driven more by aspirations of economic stability. Although women's rights were not the primary incentive for the uprisings, it leaves the question of whether women's status and empowerment had been affected as a result of the political transitions. Several studies have been conducted in the MENA region, examining the potential effects of the Arab Spring on attitudes toward gender equality and women's economic status. This thesis examines the association between the Arab Spring and women's empowerment in Jordan. Specifically, women's empowerment is measured through women's agency, which is defined as the ability to articulate and pursue goals. The results are retrieved by using DHS data and creating two indices that aim to capture and measure Jordanian women's agency. Regressions are run on the estimated models, which controls for differences within various groups, such as age groups and geographical locations. The results suggest a positive association between the Arab Spring and women's empowerment, which somewhat contrasts with findings from other studies made within the field of research. It was also found that younger age groups hold slightly more conservative views towards women's empowerment, compared to older age groups. Further, the results suggest significant disparities between geographical locations within the country only for one of the indices.

Contents

1 Introduction

To tackle gender inequality, it is crucial to empower women and girls. Efforts to promote gender equality and empowerment of women have been made, including the Convention on the Elimination of All Forms of Discrimination against Women (CEDAW) in 1979. Still, globally, women and girls are facing hardships as a result of their gender. Violence against women, which finds its roots in gender inequality (UNHCR, n.d.), has victimized a significant 35% of today's women to sexual and physical intimate partner violence, as well as non-partner sexual violence (World Bank, 2019). Besides the moral ground behind women's empowerment that rests on the fact that it concerns the lives of half the global population, it also plays a pivotal role in fostering economic growth and facilitating social development (UN, 2020). The integration of feminist goals with official development objectives has facilitated substantial progress in advancing the advocacy for women within the mainstream development agenda (Kabeer, 1999).

Gender equality is progressing at a substantially slower rate in the MENA (Middle East and North Africa) region (UNICEF, 2021), which could be explained by the institutions set in place (Abbott, 2017). The prevalence of violence against women represents a prominent concern within the area. In addition to the violence, women face other constraints on their rights, e.g. restrictions concerning family decision-making (OECD, 2020). The region also possesses an extensive historical record of having the lowest female labor force participation rate worldwide (Rudolf, Wang & Wu, 2023), and the Arab World has been characterized by an overall low female participation in the national parliament (World Bank, n.d.).

In 2010, a Tunisian vendor self-immolated as an act of protest against the authorities, which came to gain large recognition and led to major protests taking place in other countries in the MENA region (National Geographic, 2019). The protests were a result of people's disapproval of current regimes and their lack of democratic rights (Britannica Academic, n.d.), and would later be referred to as the Arab Spring. There were different outcomes from the uproars, e.g. the protests in Tunisia led to regime overthrowing, while in Syria, the uprisings even caused a civil war. Numerous arguments emerged that suggested that women's involvement in the uprisings would increase gender equality (Abbott, 2017), but arguments emphasizing the risk of the rising of Political Islam proposed that gender equality would rather be led into a more conservative route (Bradley, 2012; Esposito, Sonn, & Voll, 2016; Moghadam, 2014; Tonnessen 2013).

The main determinants for the uprisings in Jordan were concerns about economic issues, and wanting to eradicate corruption (Teti, Abbott & Cavatorta, 2018). The protests in Jordan were also of a more down-scaled and peaceful nature and put less emphasis on regime overthrowing (Tobin, 2012). In addition, there was nearly no difference in participation among the genders (Teti, Abbott & Cavatorta, 2018), but there is little support to claim that women's participation

directly originated from the lack of gender equality in Jordan (Abbott, 2017). Not long after the demonstrations took place, the king of Jordan replaced the current prime minister and continued to do this several times throughout 2011 and 2012 (Yitzhak, 2018). There were high hopes for mainly economic reform from the opposition, but continued demonstrations implied that not enough needs were met.

To our knowledge, the effects of the Arab Spring on women's empowerment is an understudied area of research. Also, the way in which women's empowerment is generally measured tends to be similar in that they use conventional measures such as female labor force participation (Ghazalian, 2022; Yount, VanderEnde, Dodell, & Fai Cheong, 2011). This could imply that other aspects of women's empowerment are often not captured or at least not given enough attention. Further, many studies have a broad focus on the MENA region, thus sometimes falling short of delving more deeply into women's empowerment in one specific country.

All of this leads to an identification of a gap, which is addressed by focusing on women's empowerment from a perspective that can be interpreted as non-mainstream: the agency dimension of empowerment identified by Kabeer (1999). Furthermore, this thesis is centered on Jordan, the reason partly being that there exist a substantial amount of high-quality data for the years prior to and after the Arab Spring, and also that the country stands as relatively understudied in comparison with other MENA countries.

Our method of research attempts to make full use of this high-quality data by creating two indices that aim to capture women's agency based on less commonly used features, such as women's attitudes toward violence. The aim of this thesis is to use our indices to examine the potential association between the Arab Spring and women's empowerment in Jordan.

In particular, these questions will be addressed:

Given the indices created in this thesis,

- Is there an association between the Arab Spring and women's empowerment in Jordan?

- Is there an association between age groups and women's empowerment, as well as an association between geographical locations and women's empowerment?

The structure of this thesis will have the following outline. Section 2 presents the theoretical frameworks on women's empowerment and institutions, followed by a literature review in section 3, in which studies relating to the topic of research will be reviewed. Section 4 presents data used for conducting the method outlined in section 5. Finally, results are discussed in section 6, followed by a discussion in section 7, and a conclusion in section 8.

2 Theoretical framework

In this section, two theoretical frameworks will be presented. The framework for women's empowerment, more specifically, agency, is used to support the construction of indices and constitutes the basis for this thesis. Moreover, it will be incorporated as support for the analysis. The framework for institutions acts as a further guide to support the analysis.

2.1 Women's empowerment

Empowerment is defined as a concept that encompasses a process of change where a previously denied ability to make choices is acquired (Kabeer, 1999). The concept of choice is central concerning empowerment, where having power means that one has the ability to make choices. Kabeer (1999) further explains that being powerful excludes the chance of being empowered since the latter implies that one has been disempowered at first. She continues by clarifying the concept of highly critical choices, which can be referred to as strategic life choices, and how these contribute to the shaping of other comparatively inconsequential choices.

There exists a variety of definitions and measurements of empowerment, but also arguments that suggest there is neither a clear definition of empowerment nor any clear measurements of it. Nonetheless, the framework of Kabeer has played a significant role in establishing the foundation for the concept of women's empowerment.

Kabeer (1999) states that the ability to exercise choice is determined by the following interdependent dimensions: resources, achievements, and agency. In this thesis, we focus on the dimension of agency. The decision to focus on one single dimension allows for a deeper analysis within that dimension, compared to a broader approach if all dimensions were to be included. She argues that each dimension has its limitations when measured as an indicator of women's empowerment, also neither of them can be covered without referring to one another. However, we believe that the examination of one dimension can still be informative. A cautious interpretation of the limitations to the agency measurement is that it depends on its contextual significance rather than on other dimensions. Kabeer (1999) does mention agency in relation to the other two dimensions, but not the other way around.

Concerning the contextual significance, one could think of the example of a woman buying groceries: is she really empowered by acquiring the ability to decide what groceries to buy, if it is her duty to do the cooking? In other words, there are some decisions that could be attributed as belonging to the female gender norm, which may not imply a substantial possibility of empowerment.

2.1.1 Agency

Agency is defined as the ability to articulate goals and realize them (Kabeer, 1999). In a negative meaning, agency would imply the power to overrule the agency of someone else. It is further stated that agency in itself is multidimensional, as it encompasses both intrinsic and instrumental manifestations. As a matter of fact, this distinction is often made in contemporary research. We solely consider the agency dimension from women's perspective, since this thesis centers only around women (nonetheless, this does not exclude the fact that men can also possess or lack agency). Jones et al. (2020) explain that intrinsic agency relates to attitudes held by women, embracing their ability to voice their opinions that may challenge prevailing norms. Particularly, it captures whether women's attitudes toward gendered violence are aligned with conventional beliefs. Instrumental agency is explained as the ability to exercise choice and make decisions on a household level. In this thesis, the distinction between the two agencies was used to create indices to measure women's empowerment.

Figure 1 below illustrates the dimensions of empowerment by Kabeer (1999), and the interpretation of the domains of agency according to Jones et al. (2020).

Figure 1: Dimensions of empowerment and domains of agency
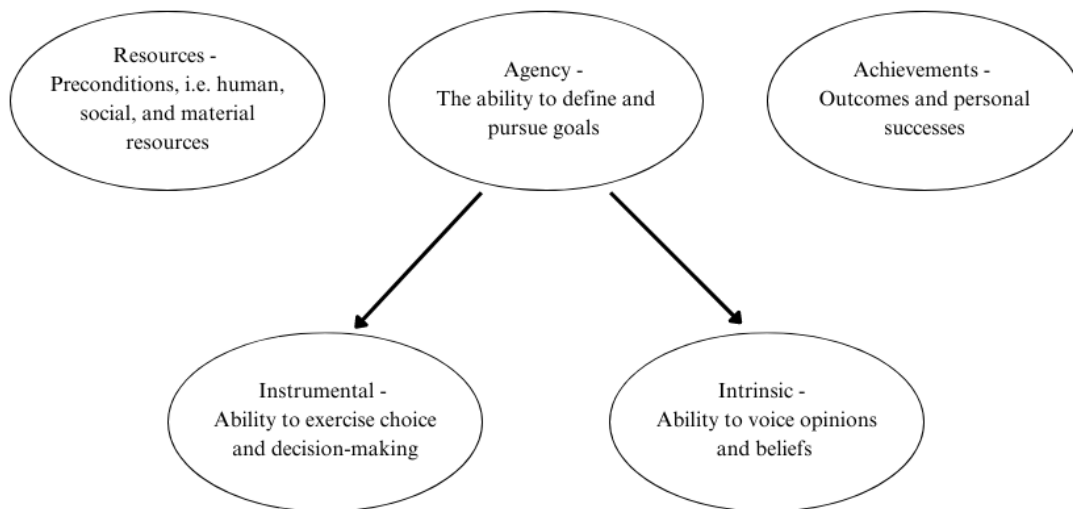
Source: Own picture

6

2.2   Institutions

Agency may also be constrained by institutions (Alsop & Heinsohn, 2006), which can be described as "the rules of the game in a society" (North, 1990). Institutions can be divided into formal and informal. Formal institutions set rules that are political, judicial, and economic. The rules set by informal institutions are however not as tangible and encompass e.g. norms, customs, and traditions (Williamson, 2000). In order for the exercise of agency to be effective, there needs to be a "change in the rules of the game", implying that institutions need to change (Alsop & Heinsohn, 2006).

Acemoglu, Johnson & Robinson (2005) provide a framework that explains the evolving and maintaining of formal institutions within a country. The framework demonstrates that political institutions and the distribution of resources are what determine the two political powers: de jure and de facto. They further explain that de jure political power refers to institutional power and originates from political institutions. De facto political power refers to people's political power where they can initiate demonstrations and revolts to "impose their wishes on society". In addition, de facto political power has two sources, specifically economic resources and people's ability to act together collectively. The possession of de jure and de facto political power determine economic institutions as well as future political institutions. The rules imposed by economic and political institutions are what North (1990) describes as formal constraints.

The group that possesses the highest amount of political power will set the rules while acting partly according to their interests (Acemoglu, Johnson & Robinson, 2005). Political power, specifically de jure political power, can be reflected in the seats held in parliaments. In 2021, women held 26% of the seats in national parliaments globally, and 18% of the seats in national parliaments were held by women in the Arab World (World Bank, n.d.). The unequal representation of seats suggests that men primarily hold the de jure power and that they then also determine future political and economic institutions as a consequence. Inequality between genders can therefore be maintained and reproduced by continuous denial and obstacles for women to access the power of the institutions. Duflo (2012) mentions how divorce and marriage laws play a significant role in protecting women, and without legal protection, their partners can "impose decisions on the household". Therefore, it is reasonable to expect that women's empowerment is restricted if they have no say or no options outside the marriage as well as within the marriage.

Proceeding the discussion about institutions, it is also important to acknowledge informal institutions. Williamson (2000) explains that informal institutions are socially embedded within society, inherited, and change slowly. Informal institutions relate to women's empowerment in a way that can often manifest through religious beliefs. Norris & Inglehart (2002, 2003, 2004)

have found that on average, liberal attitudes toward women's empowerment are not developing in younger generations in Muslim countries. In line with this, Abbott (2017) explains that the support for gender equality has not increased with the modernization of Muslim countries, supposedly because of traditional religious beliefs that reinforce gender norms. She further explains that the reinforced gender norms are especially strong in the MENA region, but continues by referring to the suggestion that the persistence of patriarchal attitudes is likely to be more influenced by culture and social heritage rather than religion. The basis for this suggestion stems from the observation that nations with predominantly Hindu and Confucian societies also exhibit disparities in gender equality and limited advancements in women's empowerment (Caldwell 1982; Kandiyoti 1988; Rizzo, Abdel-Latif, & Meyer, 2007).

In order to facilitate the discussion on women's empowerment, there is a need to focus on gender norms, which are a subgroup of social norms. Social norms are informal rules that guide human behavior and define what actions are considered acceptable and appropriate within a group or community (UNICEF, 2021). They are maintained by people conforming to them because of a desire to be socially accepted. Moreover, gender norms pertain to the behavioral expectations that are regarded as appropriate for the genders. UNICEF (2021) explains that these norms often promote male privilege along with female discrimination, as well as influence self-perception (identity), constrain aspirations, and influence choices.

Attitudes are related to norms but differ in that they are individually motivated instead of socially motivated (UNICEF, 2021). However, it should be addressed that attitudes are influenced by norm internalization. Both norm psychology and social identity theory identify its importance (Kish Bar-On & Lamm, 2023). According to norm psychology, the individual's attitude toward social norms is determined by norm internalization. By internalizing the norm, the individual maintains her status as an in-group member. In social identity theory, the attitudes toward social norms are determined by the level of identification with the group. According to this theory, the individual follows norms not because they are internalized but because of the will to secure social identity. Norm internalization is reinforced by her adherence to the norms of her group, which manifests through her behavior. These theories might help with the understanding of why women can be supportive of wife-beating. It should still be acknowledged that the phenomenon of wife-beating attitudes is complex.

Continuing the discussion about gender norms and their relevance in analyzing women's empowerment, it is also important to consider bargaining power. If men and women within households have different preferences, the ultimate decision depends on the distribution of bargaining power (Duflo, 2012). Bargaining power matter for decision-making, and is partly determined by income earning. Concerning violence, economic empowerment for women may lead to them experiencing either less violence or more violence (OECD, 2020). Moreover, the bar-

gaining power could face constraints by norms, for instance, regarding what can be bargained about and how the bargaining is conducted. This could perhaps prevent women from entering the workforce and earning income.

3 Literature review

In this section, we review the previous literature relating to women's empowerment globally, as well as in the MENA region. The studies presented focus on measurements of empowerment, the effect of policy-making on women's empowerment, the mapping of social norms and attitudes in the MENA region, and the effect of the Arab Spring on gender equality. The purpose of this review is to provide a map and evaluation of previous research.

3.1 Measurements of women's empowerment

Haghighat (2013) explores different empowerment and women's social status measurements. She lists that conventional measurements include women's access to education and reproductive health services, female mortality, age at first marriage, preference for sons, political participation, and paid employment. It is not always clear what measurement of women's empowerment is the most comprehensive. An example of this is Iran and Lebanon in which education is offered to women, but traditions and social norms keep women from entering the workforce and politics (Haghighat, 2013). Moreover, women who enter the workforce are not guaranteed to be empowered or liberated. Women can encounter discrimination, or even become disempowered, since women in developing countries often work in exploitative work environments and low-status jobs. Further, two of the most well-known measurements are the Gender Development Index (GDI), measuring differences in male and female achievements in health, education, and command over economic resources, and the Gender Empowerment Measure (GEM), which focuses on economic and political participation (UNDP, 1995). Especially the GEM has been criticized for being "insensitive to differential cultural and social norms across countries" (Pillarisetti & McGillivray, 1998).

Women's empowerment can be measured through agency, and Yount et al. (2016) examine the structure of women's agency in Egypt, finding that it is comprised of women's influence on decisions, freedom of movement, and attitudes about gender equality. They also note that agency is context-specific, what might be seen as agentic in one country might not be somewhere else. The findings from their study could be considered applicable to most MENA countries since the manifestations of patriarchy and other social norms are comparable.

3.2 Policy-making and women's empowerment

Which factors can influence women's empowerment, or increase gender equality? Duflo (2012) wrote about the linkage between economic development and women's empowerment, stating that policy action is necessary to reach equality. Some of these policy actions could be initiatives to increase school attendance (or prolong schooling) for young girls. In a relatively recent study, Le & Nguyen (2021) examined the effect of women's education on women's empower-

ment in 70 developing countries. They chose to measure women's empowerment through four indices: two that measure the women's participation in intra-household decisions (financial and non-financial), and two that measure the exposure to gendered violence (physical and psychological). The results from the study showed that an additional year of schooling increases a woman's authority in decision-making and reduces relational friction.

3.3   Norms, attitudes, and beliefs in MENA

Another field of research within women's empowerment and gender equality focuses on norms, attitudes, and beliefs. A study by Khawaja, Linos, & El-Roueiheb (2007) examines the acceptance of wife-beating among married Palestinian men and women in Jordanian refugee camps. The authors in the study also investigated whether there is an association between beliefs surrounding wife abuse and beliefs around the autonomy of women, but they did not find such an association. Further, they discovered that women who had experienced intimate partner violence were more likely to be supportive of wife beating than other women, but the authors acknowledge that the finding might be dependent on the particular context. They suggest that victims of the violence justify it as a "coping mechanism". Moreover, in the study by Khawaja (2004), women demonstrated a tendency at least as high as men toward wife beating in contexts characterized by patriarchal structures, e.g. in Jordan. The results by Khawaja, Linos, & El-Roueiheb (2007) do also imply that in communities where wife beating is widespread, the violence tends to be seen as legitimate.

Further, the results of Khawaja, Linos, & El-Roueiheb (2007) suggest a cyclical relationship between attitudes toward violence and actual violence, meaning that they influence each other in both directions. This goes against the conventional idea that a requirement for reducing violence is a change in attitudes. The cyclical relationship could provide a possible understanding of the perpetuation of norms that condone violence within patriarchal contexts. In a study in Egypt on domestic violence against women by Diop-Sidibé, Campbell, & Becker (2006), it was found that ever-beaten women were more restricted in their everyday life than never-beaten women. For example, they found that ever-beaten women were to a larger extent not permitted to go to the doctor or to visit a relative. In the study, it was also found that 60% of the ever-beaten women viewed beating as a normal aspect of marriage and that a lower percentage (54%) had never disclosed the abuse to anyone, nor had they sought help for it.

Kostenko, Kuzmuchev, & Ponarin (2016) investigated the relationship between attitudes toward gender equality and the support for democracy in Arab countries, using data sets from the Arab Barometer. Two indices were made to measure attitudes toward gender equality (thoughts about women in the workforce and politics) and democracy, and differences in the level of religiosity, age, gender, and country were controlled for. It was found that the most progressive group (who

were positive toward gender equality) was largely represented by women aged 25-34, and the groups who held negative views toward gender equality were largely represented by young men who had little to no education. Jordanians were well represented in the group that was most positive toward gender equality, but not toward democracy. In addition, they found that about 30% of the sample was in support of democracy but not gender equality.

3.4   Political events and women's empowerment

There are studies examining political events and their effect on empowerment, for example, Meyersson (2014) looks into the effect of Islamic rule on women's empowerment in Turkey. In the study, it is found that within the municipalities where the Islamic party won, female attendance in school and politics increased. And more precisely, Islamic rule had a bigger effect in more poor and more religious communities, where barriers to entry for women are arguably higher. The author proposes that this could be explained by secular policies, such as headscarf bans and mixed-gender classrooms that could keep conservative families from sending their daughters to school. A study by El-Mallakh, Maurel, & Speciale (2018) examined the effect of the Arab Spring protests and female labor force participation in Egypt. The results from the study showed that married women's labor force participation increased in the private and informal sectors after the protests, especially for poorer households. A potential explanation for this is that political unrest can cause uncertainty, which can lead households close to the subsistence level to prioritize women's work. It is however stated that the increase was mostly due to necessity rather than a change in social norms. Nonetheless, there is a possibility that it could have positive long-term effects on women in Egypt.

Recent studies have emerged, examining the effect of the Arab Spring on female labor participation and gender equality in several MENA countries (Ghazalian, 2022; Rudolf, Wang & Wu, 2023). In the study conducted by Ghazalian (2022), results show that there was a moderate increase in female labor participation in the MENA region after the Arab Spring. However, looking specifically at Jordan, there was a slight decrease. This could be explained by general instability and a large influx of Syrian refugees. Rudolf, Wand, & Wu (2023) did not only measure differences in female labor participation but also in several gender equality aspects. Data from the Gallup World Poll was collected to more accurately depict gender inequalities and the attitudes toward them within the countries. They found that countries experiencing the Arab Spring experienced a setback for gender equality, and that "Arab Spring protests reduced support for secular feminism". Further, countries with larger protests experienced a reduction in female labor participation.

4 Data

For this thesis, we use data sets from the Demographic and Health Surveys (DHS) Program, which collects and publishes extensive national-level data on population and health in developing countries. The sample size of a standard DHS survey is usually around 5,000-30,000 households (The DHS Program, n.d.), and households are selected at random to make the sample representative of the whole population.

More specifically, we use DHS data on Jordan in 2002, 2007, 2012, and 2017-18, which when appended results in a repeated cross-sectional data set, containing 42,923 observations. By using individual women's data, the data is restricted to respondents corresponding to ever-married women aged 15-49. It is important to note that not all observations are included when we conduct the method. This is due to the missing values from the chosen variables in both the indices, as well as the control variables.

To be able to answer the research questions, it is required to quantify women's empowerment. Hence, we have developed two indices. Existing measurements of women's empowerment have been used as a guide, in particular, the Women's Empowerment Index (WEI) (Kenya National Bureau of Statistics & African Centre of Excellence for Inequality Research, 2020), which helped with the identification of indicators of agency. WEI is a measurement specifically designed for measuring women's empowerment in Kenya and relies largely on Kabeer's (1999) conceptual framework. Five domains were identified, two of which relate to household decision-making and attitudes toward wife-beating. The former domain pertains to instrumental agency, while the latter domain pertains to intrinsic agency. These domains form the indices that were created in this thesis. Variables from the DHS questionnaires relating to instrumental and intrinsic agency with a substantial number of answers were included.

Our indices are designed in a manner in which a higher score indicates greater empowerment in comparison to a lower score. Hence, all dummy variables included are transformed in the same manner, where an answer considered beneficial to women's empowerment is coded as 1, and 0 otherwise. The descriptions of the indices are listed below.

The *Instrumental agency index*:

When you are sick and want to get medical advice or treatment, is each of the following a big problem or not?

1. Getting permission to go

2. Getting money needed for treatment

When you are sick and want to get medical advice or treatment, is each of the following a big problem or not?

3. Your own health care?

4. Making large household purchases?

5. Visits to family or relatives?

In the Instrumental agency index, variable 1 represents the question of whether there is a major or a minor problem for the woman to get permission to go to a healthcare facility to obtain medical help for herself. If there is a major problem with getting permission, the variable takes the value 0, if it is a minor problem to get permission the variable takes the value 1. Similar to variable 1, variable 2 refers to if there is a major or minor problem to get the money needed for medical treatment. It takes value 0 if there is a major problem, and 1 if there is a minor problem. As for variables 3-5, they are all transformed in a similar fashion. All questions relate to who has the final say within the family, in different scenarios. These variables take value 1 if she herself, or jointly with someone else, has the final say. They take the value 0 if she is not included in the decision. Finally, all variables are summed to create the index and take on values between 0 and 5.

The *Intrinsic agency index*:

In your opinion, is a husband justified in hitting or beating his wife in the following situations:

1. If she goes out without telling him?

2. If she neglects the children?

3. If she argues with him?

4. If she burns the food?

In the Intrinsic agency index, variables 1-4 concern the woman's attitudes toward wife-beating. She is asked if she thinks it is justified for a husband to hit or beat his wife in different scenarios, where each variable represents these scenarios. If she does not think it is justified, the variable

takes the value 1, and 0 otherwise. All values of the variables are summed, which results in the Intrinsic agency index taking on the value 0 to 4, where 0 indicates no empowerment and 4 high empowerment.

When constructing the indices, the number of observations declines as a result of missing values for the variables for the Instrumental agency index, with 40,734 observations remaining.

4.1 Exposure

In order to examine the potential association between the Arab Spring and women's empowerment, the variable *Arab Spring* was created. It is a dummy variable that takes the value 0 before the Arab Spring (survey years 2002 and 2007) and 1 after the Arab Spring (survey years 2012 and 2017-18). This variable captures the effect of being exposed to the Arab Spring.

4.2 Control variables

Other factors than the Arab Spring can explain different outcomes regarding women's empowerment. Thus, these variables (control variables) are incorporated into the models. They do not only serve the purpose of controlling for differences within our sample, but also of capturing other aspects that could affect women's empowerment simultaneously with the Arab Spring.

In this thesis, we choose to control for differences between age groups 15-19, 20-24, 25-29, 30-24, 25-29, 40-44, and 45-49. We consider it to be essential to control for potential differences, considering the observation from Kostenko, Kuzmuchev, & Ponarin (2016), and Norris & Inglehart (2002, 2003, 2004), indicating that younger generations may not be developing more liberal attitudes toward gender equality. This contrasts somewhat with the general consensus that younger generations in the West tend to hold more liberal and progressive views. Whatever the disparities may be, we assume there to be intergenerational differences.

Another factor that is controlled for is the geographical location of respondents. From the data set, two variables indicate a woman's geographical location: one denotes if she lives in the northern, central, or southern region of Jordan, whereas the other tells whether she lives in an urban or rural area. These two variables were combined into a new variable *Region/Area* with six categories, acting as dummy variables: *Central/Urban*, *Central/Rural*, *North/Urban*, *North/Rural*, *South/Urban*, and *South/Rural*. The geographic variables can be used as fixed-effect variables and will capture differences between the locations. There can be several factors that contribute to differences between women's geographical locations, one example is how rural areas often lack resources in comparison to more urban or developed areas within a country. This claim could be supported by the fact that out-of-school children in MENA countries are disproportionately children from rural areas rather than urban (UNICEF, 2014). In Jordan, there

is a lesser disparity between rural and urban children who are out of school, however, larger disparities are shown in learning achievements (WIDE Education Inequalities, n.d.). Another example of how geographical locations differ could also include social norms, or more generally, their informal institutions. From our sample, most women are living in the Central/Urban areas of Jordan, and the least in Central/Rural, depicted in Table 1.

We have chosen to also control for the respondents' educational level, as well as their partners. There is a low percentage of women who have no education, merely 7,5%. The portion of women who have a partner with no education is even lower, about 4%. The reasoning behind controlling for these variables stems from Le & Nguyen (2021) who show that education has a positive effect on women's empowerment in developing countries. In this way, the hypothesis would be that higher education (for both the women and her partner) would have a positive effect on women's empowerment.

We further control for differences for women who are currently using contraception, currently married, and currently working. The variable Currently using contraception takes the value 1 if the she is using any form of method to prevent getting pregnant, and 0 otherwise. However, women who are currently pregnant fall into the category of women who do not currently use contraception, according to the DHS. We hypothesize that contraceptive use has a positive effect on empowerment. However, we do not exclude the possibility that empowerment has a positive effect on contraceptive use, the latter statement is shown in a study, using DHS data from Ghana, made by Blackstone (2017). Moreover, Diop-Sidibé, Campbell & Becker (2006) found a negative association in Egypt between the frequency of beatings and contraception use. Also, they noted that frequently beaten women were less likely to ask for permission to go to the clinic to get contraception since contraceptive use carries the risk of being perceived as an indicator of cheating. From Table 1, we can see that approximately 50% of the women in the data set are currently using contraception.

Currently married is a dummy variable taking the value 1 if the woman is currently married, and 0 if she is divorced or widowed. This is because the sample only contains observations from ever-married women. The proportion of women in the sample who are married is quite high, around 95% before the Arab Spring and 94% after the Arab Spring. The idea to include this variable is partly due to the discussion held in the study by Diop-Sidibé, Campbell & Becker (2006). There, they address that since women who leave abusive relationships face additional stigmatization from society, this may refrain them from leaving and instead lead to them internalizing the violence. This could suggest that a divorced woman is less likely to justify the beating.

While we assume that women who have joined the workforce are more empowered, it is suggested by Haghighat (2013) that women can experience discrimination and even disempowerment within the workforce. Hence, we want to control for differences between women not working and currently working. We have chosen to add the variable *Currently working*, which is a dummy variable, taking the value 1 if the woman is currently working (or has worked in the past seven days from the interview), and 0 otherwise. From Table 1 we can see that there are few of the women who are currently working. Even if the majority of women have acquired secondary education, most of them are not in the workforce. Approximately 12% of the women are currently working.

Relationship to head of household explains if the woman is the head of the household or if she has another relationship to the head, such as wife or daughter. This was transformed into a dummy variable *Head of household*, which takes the value 1 if the woman is the head and 0 otherwise. If a woman is considered to be the head of the household, it could imply that she has the final say in both questions regarding the household, and her own well-being. In other words, a great deal of the bargaining power. However, as displayed in Table 1, we can see that all but 4% (both before and after the Arab Spring) of the women are considered heads of the household.

The last control variable, *Number of living children* checks for differences in the indices between the total number of living children a woman has. This means that the women address the total number of births in their birth history. In our sample, the mean *Number of living children* for the women is around 3-4, with a minimum value of 0 and a maximum value of 18.

Table 1. Descriptive statistics

VARIABLES	Before Arab Spring			After Arab Spring			Min	Max
	Obs	Mean	Std	Obs	Mean	Std		
Instrumental agency index								
Getting money for healthcare - small problem	16,881	.657	.475	26,041	.76	.427	0	1
Getting permission for healthcare - small problem	16,881	.901	.298	26,041	.906	.292	0	1
Final decision - health care	16,364	.886	.318	24,468	.895	.307	0	1
Final decision - visits	16,347	.83	.375	24,435	.874	.332	0	1
Final decision - large purchases	16,349	.663	.473	24,439	.796	.403	0	1
Intrinsic agency variables								
Wife beating not justified - argues	16,882	.849	.358	26,041	.921	.27	0	1
Wife beating not justified - burns food	16,882	.713	.452	26,041	.974	.16	0	1
Wife beating not justified - goes out	16,882	.639	.48	26,041	.893	.309	0	1
Wife beating not justified - neglects children	16,882	.557	.497	26,041	.877	.328	0	1
Age groups								
15-19	16,882	.022	.148	26,041	.026	.158	0	1
20-24	16,882	.12	.325	26,041	.109	.311	0	1
25-29	16,882	.19	.392	26,041	.181	.385	0	1
30-34	16,882	.213	.409	26,041	.189	.391	0	1
35-39	16,882	.187	.89	26,041	.181	.385	0	1
40-44	16,882	.157	.364	26,041	.168	.374	0	1
45-49	16,882	.111	.314	26,041	.146	.353	0	1
Region/Area								
Central/Urban	16,882	.323	.468	26,041	.305	.46	0	1
Central/Rural	16,882	.086	.281	26,041	.052	.222	0	1
North/Urban	16,882	.199	.399	26,041	.26	.439	0	1
North/Rural	16,882	.112	.316	26,041	.09	.286	0	1
South/Urban	16,882	.171	.377	26,041	.195	.396	0	1
South/Rural	16,882	.108	.31	26,041	.099	.298	0	1
Educational level								
No education	16,882	.075	.264	26,041	.037	.189	0	1
Primary	16,882	.107	.309	26,041	.083	.276	0	1
Secondary	16,882	.56	.496	26,041	.557	.497	0	1
Higher	16,882	.258	.438	26,041	.323	.468	0	1
Partners educational level								
No education	16,877	.044	.205	25,086	.031	.173	0	1
Primary	16,877	.608	.488	25,086	.731	.443	0	1
Secondary	16,877	.259	.438	25,086	.237	.425	0	1
Higher	16,877	.089	.285	25,086	.001	.026	0	1
Other individual characteristics								
Currently working	16,882	.126	.332	26,041	.154	.361	0	1
Currently using contraception	16,882	.519	.5	26,041	.522	.5	0	1
Currently married	16,882	.953	.212	26,041	.94	.237	0	1
Head of household	16,882	.037	.189	26,041	.038	.192	0	1
Number of living children	16,882	3.93	2.66	26,041	3.34	2.26	0	18

5 Method

While one could consider the possibility of a treatment and control group also within a single country, we argue that is difficult to establish whether one group is affected by the Arab Spring, while the other is not. Hence, we have chosen to focus on finding correlations rather than establishing causal effects. There are, however, reasons to believe that there are differences in the extent to which people are affected, thus we chose as part of our aim to investigate this further by placing particular emphasis mainly on age groups and geographical location.

To answer our research questions, whether there is an association between the Arab Spring and women's empowerment for women in Jordan, and if the results differ between age groups and the location of the respondents, we estimate the following models:

$$y = \beta_0 + \beta_1 \textit{Arab Spring} + \beta_2 \textit{Age} + \beta_3 \textit{Region/Area} + \epsilon \tag{1}$$

$$y = \beta_0 + \beta_1 \textit{Arab Spring} + \beta_2 \textit{Age} + \beta_3 \textit{Region/Area} + \beta_4 \mathbf{X} + \epsilon \tag{2}$$

where *y* represents either of the two outcome variables, that is, either of the two indices *Instrumental agency index* or *Intrinsic agency index*. *Arab Spring* is a dummy variable capturing the effect of being exposed to the Arab Spring. *Age* denotes the age, and *Region/Area* is the geographical location. $\mathbf{X}$ denotes the remaining control variables. The coefficients, β_n, predict the effect of each of the variables. ϵ is the error term, which is assumed to be well-behaved.

To further explore the relationship between age, geographical location, and women's empowerment, interaction variables are added separately to equation (2). The interaction term between the variable *Arab Spring* and *Age* captures if the exposure of Arab Spring on women's empowerment differs between age groups. In a similar way, the second interaction term consisting of the variable *Arab Spring* and the geographical location variables *Region/Area* captures if the exposure of Arab Spring on women's empowerment differs depending on location. This gives us the following equations:

$$y = \beta_0 + \beta_1 \textit{Arab Spring} + \beta_2 \textit{Age} + \beta_3 \textit{Region/Area} + \beta_4 \mathbf{X} +$$
$$\beta_5 \textit{Arab Spring} \times \textit{Age} + \epsilon \tag{3}$$

$$y = \beta_0 + \beta_1 \textit{Arab Spring} + \beta_2 \textit{Age} + \beta_3 \textit{Region/Area} + \beta_4 \mathbf{X} +$$
$$\beta_5 \textit{Arab Spring} \times \textit{Region/Area} + \epsilon \tag{4}$$

We have chosen to use OLS for the estimated models since it is suitable given the format of the data along with the structure of the indices. When running the regressions, the DHS sample weight and DHS regional clustering numbers were applied. The sample weight serves the purpose of making the observations more representative, accounting for the DHS sample design. By using the cluster, we account for potential correlations between observations within the clustered groups.

When creating regression models, we account for the fact that all possible variables may not be controlled for. This can cause omitted variable bias. This problem arises when a variable that belongs to the true model is omitted from the estimated model (Wooldridge, 2012). Hence, we want to address the absence of a variable for religion in our models. This does not arise any issue of omitted variable bias in our study, since the vast majority of respondents identified as Muslims. There were no direct ways to distinguish their level of religiousness. Further, we control for omitted variables on a regional level with the help of the *Region/Area* dummy variables.

6 Results

In this section, we present the results from the regressions. Table 2 displays the regressions for equation (1), with the Instrumental agency index as the dependent variable in the first two columns, and the Intrinsic agency index as the dependent variable in the last two. Standard robust errors are displayed within parentheses. Table 3 presents the regressions run on equation (2), and in the same manner, the Instrumental agency index is the dependent variable in the first two columns and the Intrinsic agency index in the last two. Interaction effects from equation (3) and (4) are displayed in Figures 2 to 5. An additional regression is run and displayed in Table 4, supporting the positive time trend regarding women's empowerment.

Table 2. Main regression

VARIABLES	Instrumental		Intrinsic	
Arab Spring	0.264***	(0.0219)	0.803***	(0.0227)
Age group				
15-19	(ref)			
20-24	0.225***	(0.0608)	0.235***	(0.0458)
25-29	0.320***	(0.0618)	0.245***	(0.0489)
30-34	0.378***	(0.0627)	0.284***	(0.0461)
35-39	0.369***	(0.0616)	0.257***	(0.0455)
40-44	0.424***	(0.0599)	0.270***	(0.0461)
45-49	0.404***	(0.0625)	0.209***	(0.0474)
Region/Area				
Central/Urban	(ref)			
Central/Rural	-0.179***	(0.0410)	-0.274***	(0.0397)
North/Urban	-0.0727**	(0.0241)	-0.184***	(0.0225)
North/Rural	-0.116***	(0.0321)	-0.377***	(0.0343)
South/Urban	-0.0598	(0.0341)	-0.181***	(0.0272)
South/Rural	-0.128***	(0.0345)	-0.383***	(0.0336)
Constant	3.709***	(0.0605)	2.761***	(0.0507)
Observations	40,734		40,734	
R^2	0.024		0.173	

Standard errors in parentheses

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

Table 2 shows the result of the regressions run on the Instrumental agency index and the Intrinsic agency index separately. For both indices, the regression indicates a positive significant relationship to the Arab Spring. This suggests that women have been empowered following the Arab Spring, ceteris paribus. The Instrumental agency index has a max score of 5, and the estimated coefficient for *Arab Spring* increases the score index by 0.264. For the Intrinsic agency index, having a score of 4 as the max value, the estimated coefficient for *Arab Spring* increases the score by 0.803 points. Both values of the coefficients are significant ($p < 0.001$).

Further, almost all estimated coefficients for age groups and regional dummies are significant. For the Instrumental agency index it is displayed that, compared to the age baseline, the age group 44-49 has the most positive estimated coefficient with a value of 0.404. Regarding the Intrinsic agency index, the age group with the largest estimated coefficient is 30-34. All coefficients for the *Region/Area* variables are negative, compared to the baseline *Central/Urban*.

Table 3. Main regression with control variables

VARIABLES	Instrumental		Intrinsic	
Arab Spring	0.223***	(0.0210)	0.760***	(0.0237)
Age group				
15-19	(ref)			
20-24	0.112	(0.0603)	0.157***	(0.0461)
25-29	0.165**	(0.0628)	0.155**	(0.0495)
30-34	0.234***	(0.0648)	0.224***	(0.0472)
35-39	0.272***	(0.0653)	0.249***	(0.0475)
40-44	0.366***	(0.0656)	0.313***	(0.0483)
45-49	0.422***	(0.0700)	0.323***	(0.0503)
Region/Area				
Central/Urban	(ref)			
Central/Rural	-0.0786*	(0.0378)	-0.175***	(0.0364)
North/Urban	-0.0433	(0.0227)	-0.156***	(0.0216)
North/Rural	-0.0142	(0.0277)	-0.277***	(0.0315)
South/Urban	-0.0161	(0.0327)	-0.131***	(0.0236)
South/Rural	-0.0411	(0.0293)	-0.284***	(0.0300)
Respondent's educational level				
No education	(ref)			
Primary	0.193***	(0.0539)	0.345***	(0.0531)
Secondary	0.567***	(0.0473)	0.710***	(0.0491)
Higher	0.796***	(0.0500)	0.900***	(0.0520)
Partner's educational level				
No Education	(ref)			
Primary	0.236***	(0.0575)	0.152**	(0.0527)
Secondary	0.379***	(0.0604)	0.219***	(0.0539)
Higher	0.387***	(0.0660)	0.331***	(0.0643)
Individual characteristics				
Head of household	0.284***	(0.0558)	0.103*	(0.0449)
Currently working	0.178***	(0.0201)	0.0279	(0.0173)
Currently married	0.101	(0.0909)	0.173	(0.0907)
Currently using contraception	0.115***	(0.0168)	0.0972***	(0.0143)
Number of living children	-0.0215***	(0.00495)	-0.0310***	(0.00419)
Constant	2.814***	(0.119)	1.759***	(0.117)
Observations	40,729		40,729	
R^2	0.089		0.228	

Standard errors in parentheses

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

In line with the research questions, a distinct segment of this thesis is to control for differences between age groups. This is the purpose of the age group dummies. Much like Table 2, it is displayed in Table 3 that all estimated coefficients for the age dummies are positive compared to the baseline. Moreover, both tables show a positive trend, with higher empowerment the older the women are. In Table 3, the oldest age group (44-49) has the largest coefficient, with 0.422 for the Instrumental agency index, and 0.323 for the Intrinsic agency index ($p < 0.001$). This result indicates that younger women are associated with being less empowered.

The results for *Region/Area* for the Instrumental agency index, show that almost all estimated coefficients are insignificant. *Central/Rural* is the only variable with a statistically significant coefficient with a (modest) value of -0.0786 ($p < 0.05$). In contrast, the estimated values for the Region/Area variables are statistically significant for the Intrinsic agency index. This suggests that geographical location is a more crucial determinant for the Intrinsic agency index and that effects that were captured in the *Region/Area* variables in Table 2 for the Instrumental agency index are now better captured in the added control variables. Moreover, these values are negative, indicating that women who are not residents in Central/Urban areas are less empowered. The largest difference is the one between the baseline and South/Rural, differing with -0.284.

When examining both indices, the estimated coefficients for respondents' educational level, as well as their partners' educational level, are all positive and significant. This indicates that women are more empowered when both themselves and their partners obtain more education. The effect of having higher education (e.g. college, university) is prominent, where the coefficients take values of 0.796 for the Instrumental agency index and 0.9 for the Intrinsic agency index. However, the partner's level of education has lesser of an effect on women's empowerment but is still significant.

Further, the variables *Head of household*, *Currently working*, and *Currently using contraception* are highly statistically significant for the Instrumental agency index ($p < 0.001$). These control variables have a positive effect on women's empowerment with coefficient values of 0.284, 0.178, and 0.115. The *number of children* is also statistically significant, but negative. The effect of having one more child reduces a woman's empowerment by approximately 0.02 points. Looking at the Intrinsic agency index, fewer of the individual characteristics variables are of significance. *Currently using contraception* and *Number of living children* are statistically significant ($p < 0.001$), as well as *Head of household* ($p < 0.05$). These variables have similar effects on the Intrinsic agency index as on the Instrumental agency index.

As previously mentioned, the association between the Arab Spring and age groups, as well as between the Arab Spring and geographical locations, are further explored by incorporating interaction terms. These are displayed in Figures 3 to 6 below.
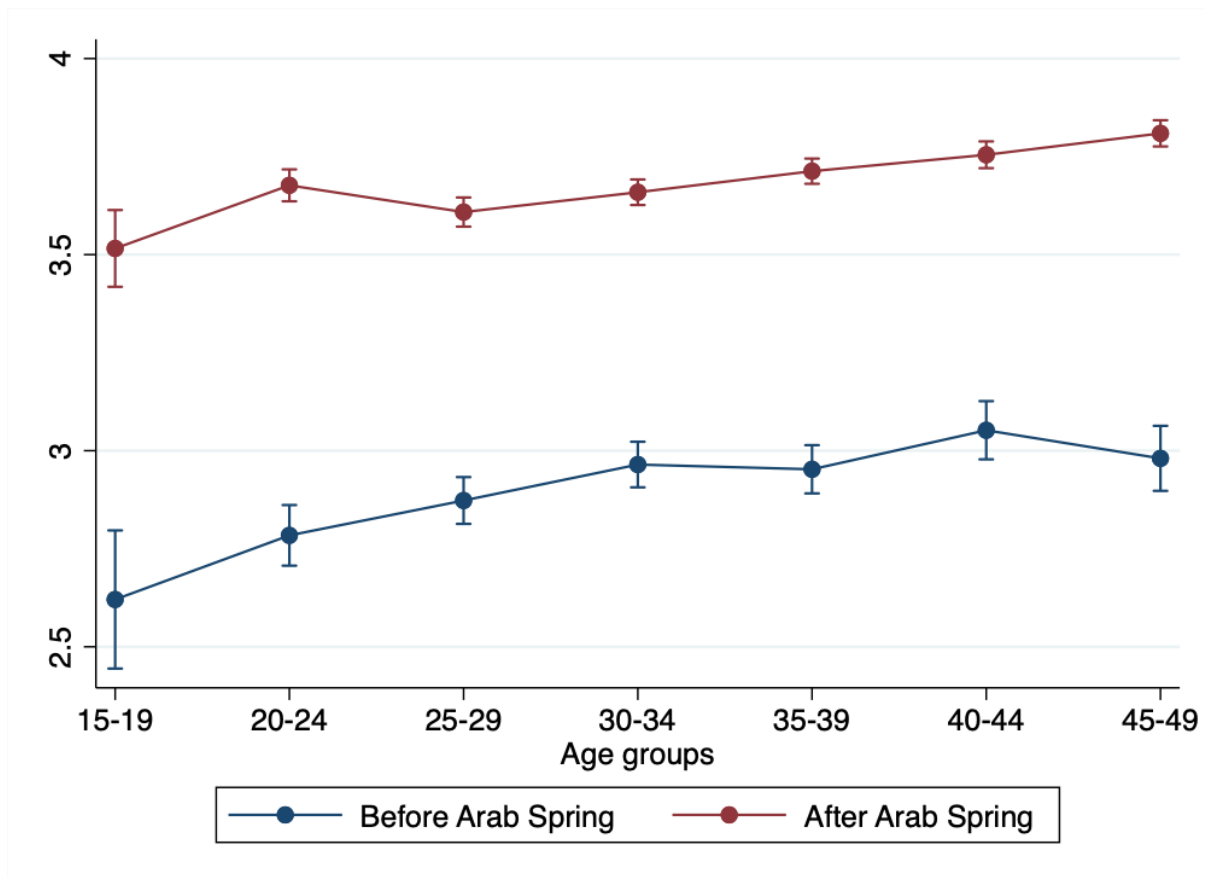
Figure 2: Predicted values of the interaction term between age and Arab Spring for the Instrumental agency index
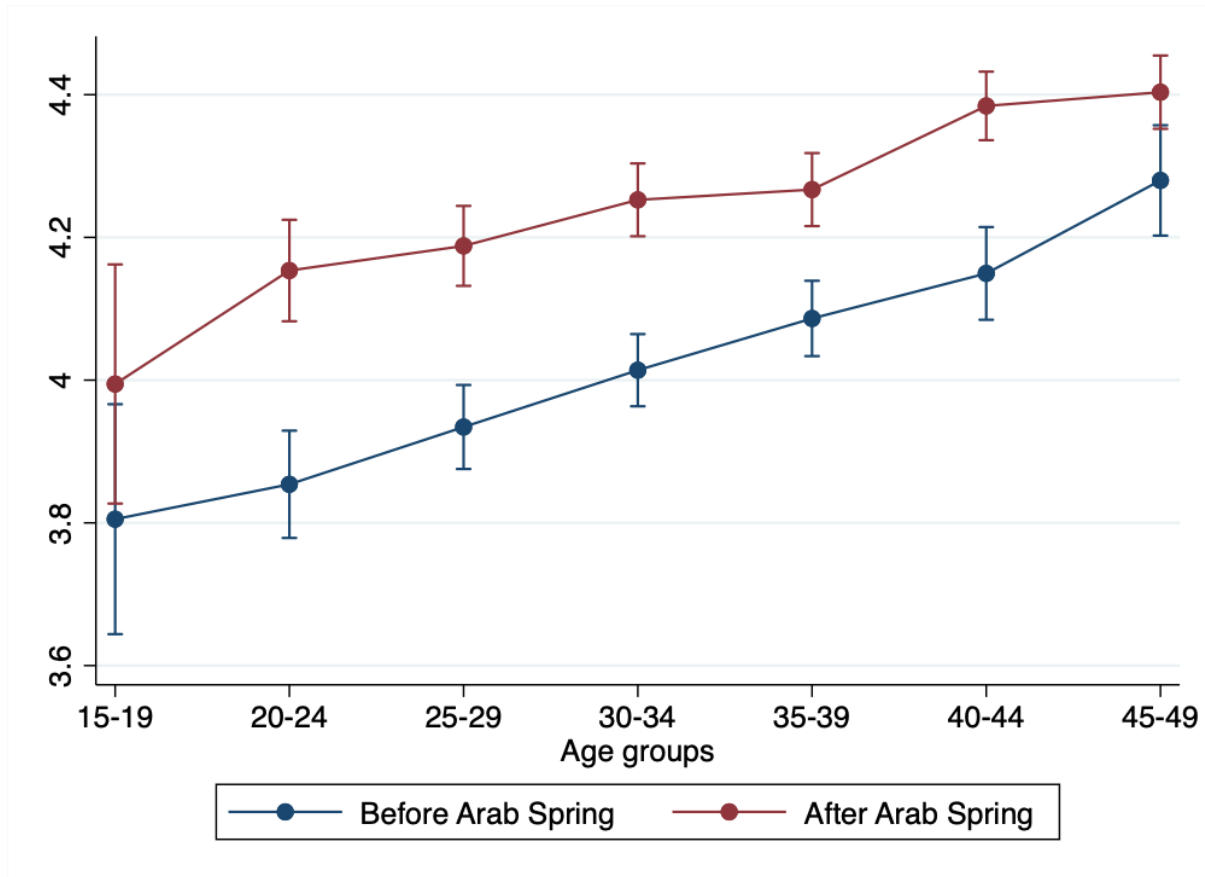
Note: This figure illustrates the predicted margins for the interaction between age and Arab Spring in equation (3), on the Instrumental agency index. This is done with a 95% CI.

The predicted values for the Instrumental agency index before and after the Arab Spring differ the most in the age group 20-24. It is also displayed that the predicted values increase by every age group, with the smallest value for the age group 15-19 and the largest for the age group 45-49 (both before and after the Arab Spring). Further, the confidence interval (CI) for the age group 15-19 is notably the largest, which implies a higher degree of uncertainty about the true value for this particular age group.
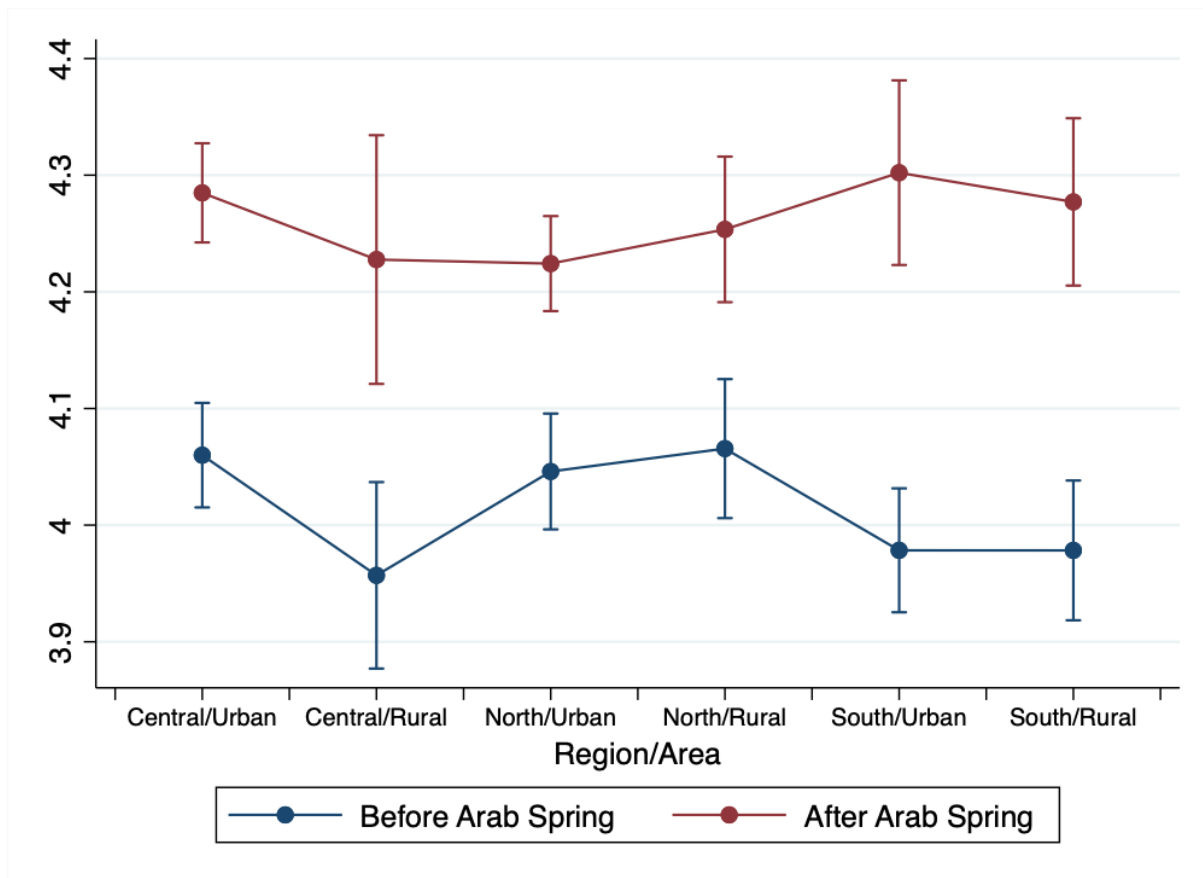
Figure 3: Predicted values of the interaction term between age and Arab Spring for the Intrinsic agency index

Note: This figure illustrates the predicted margins for the interaction between age and Arab Spring in equation (3), on the Intrinsic agency index. This is done with a 95% CI.

When comparing the predicted values for the Intrinsic agency index before and after the Arab Spring, the largest differences can be observed within the age groups of 15-19 and 20-24. These differences are almost identical, deviating solely at the third decimal place. As also illustrated in Figure 2, there is a positive trend along the age groups, showing that the predicted values for the youngest age group (15-19) are the lowest.
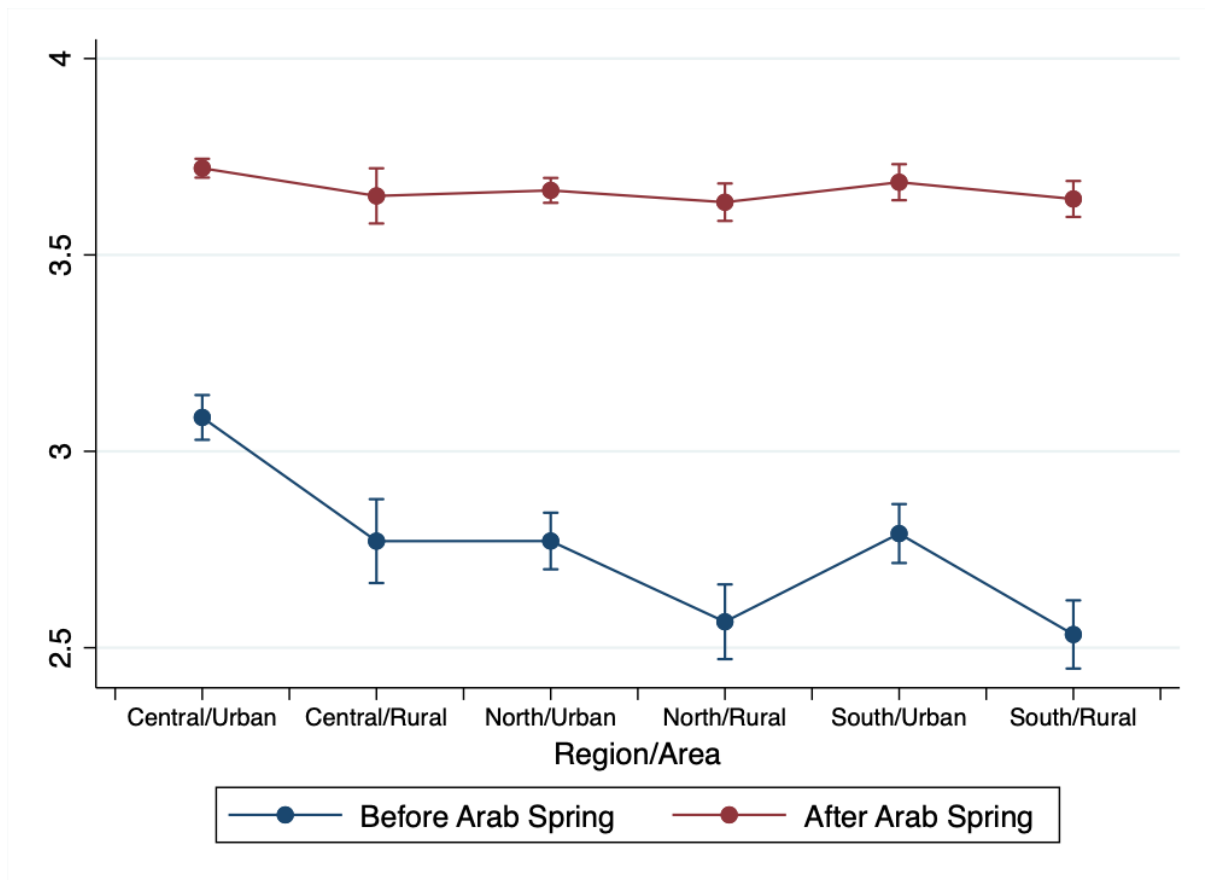
Figure 4: Predicted values of the interaction term between region and Arab Spring for the Instrumental agency index

Note: This figure illustrates the predicted margins for the interaction between region and Arab Spring in equation (4), on the Instrumental agency index. This is done with a 95% CI.

The predicted values, displayed above in Figure 4, describe a positive trend since all values for the different regions have increased after the Arab Spring. The largest difference between before and after the Arab Spring is for the regional group *South/Urban*, with about an 8,3% increase. *North/Urban* and *North/Rural* have a lower increase in the predicted value after the Arab Spring, about 4,5%. All values for the Instrumental agency index are larger after the Arab Spring, with *South/Urban* having the highest (4.30) and *North/Rural* having the lowest (4.22).

Figure 5: Predicted values of the interaction term between region and Arab Spring for the Intrinsic agency index

Note: This figure illustrates the predicted margins for the interaction between region and Arab Spring in equation (4), on the Intrinsic agency index. This is done with a 95% CI.

The predicted values for the Intrinsic agency index differ some before the Arab Spring but are more similar afterward. *Central/Urban* has the highest predicted value for the Intrinsic agency index before the Arab Spring, at 3.09, while *South/Rural* has the lowest at 2.53. It is also evident that the predicted values in all rural regions are lower than the urban ones. All region groups have experienced an upward trend after the Arab Spring, ending up with similar values of around 3.7.

Table 4. Main regression with year-dummies and control

VARIABLES	Instrumental		Intrinsic	
Year of interview				
2002	(ref)			
2007	0.0637*	(0.0311)	0.296***	(0.0353)
2012	0.214***	(0.0300)	0.914***	(0.0288)
2017	0.308***	(0.0333)	1.027***	(0.0289)
2018	0.406***	(0.0517)	1.105***	(0.0350)
Age group				
15-19	(ref)			
20-24	0.111	(0.0601)	0.154***	(0.0454)
25-29	0.161*	(0.0624)	0.148**	(0.0488)
30-34	0.227***	(0.0645)	0.210***	(0.0467)
35-39	0.261***	(0.0649)	0.228***	(0.0468)
40-44	0.352***	(0.0650)	0.282***	(0.0478)
45-49	0.404***	(0.0694)	0.288***	(0.0496)
Region/Area				
Central/Urban	(ref)			
Central/Rural	-0.0674	(0.0365)	-0.148***	(0.0323)
North/Urban	-0.0496*	(0.0227)	-0.162***	(0.0214)
North/Rural	-0.00944	(0.0276)	-0.263***	(0.0315)
South/Urban	-0.0216	(0.0331)	-0.132***	(0.0235)
South/Rural	-0.0341	(0.0296)	-0.268***	(0.0283)
Educational level				
No education	(ref)			
Primary	0.192***	(0.0541)	0.338***	(0.0524)
Secondary	0.561***	(0.0476)	0.683***	(0.0486)
Higher	0.782***	(0.0507)	0.847***	(0.0517)
Partner's educational level				
No education	(ref)			
Primary	0.245***	(0.0572)	0.153**	(0.0513)
Secondary	0.392***	(0.0601)	0.246***	(0.0527)
Higher	0.444***	(0.0659)	0.556***	(0.0659)
Individual characteristics				
Head of household	0.288***	(0.0565)	0.111*	(0.0445)
Currently working	0.185***	(0.0202)	0.0342	(0.0175)
Currently married	0.0644	(0.0905)	0.0165	(0.0900)
Currently using contraception	0.119***	(0.0168)	0.0980***	(0.0143)
Number of living children	-0.0190***	(0.00497)	-0.0264***	(0.00414)
Constant	2.797***	(0.119)	1.720***	(0.116)
Observations	40,729		40,729	
R^2	0.091		0.237	

Standard errors in parentheses

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

Table 4 differs from Table 3 in the way that it includes survey year dummies instead of the Arab Spring variable. This approach enables a more thorough investigation of the outcomes over time and somewhat supports the findings of a trend.

For both indices, the survey year dummies are significant and positive. Moreover, their values increased substantially from 2002, followed by a consistent upward trend over the years, even though at a more moderate rate. For the Instrumental agency index, the estimated coefficient for 2007 is around 3.5 times larger than the one for 2002. While for the Intrinsic agency index, the estimated coefficient is around 3 times larger compared to 2002. Thus, it provides support for the positive association between the Arab Spring and the indices that was found already in Tables 2 and 3.

7 Discussion

This study examines the association between the Arab Spring and women's empowerment as well as the association women's empowerment has with age groups respectively geographical locations. The results from Table 1 and Table 2 show a positive significant association between the Arab Spring and women's empowerment for both indices. Younger age groups have a negative association with women's empowerment compared to older. Central/Urban has a positive association with women's empowerment compared to other regions when looking at the Intrinsic agency index.

When examining the results for the Instrumental and Intrinsic agency index for the regressions run on equations (1) and (2), it is evident that the Arab Spring has a positive association with the indices. This is additionally supported by the findings from the regression in Table 4. The findings in this thesis are rather surprising, given the results from previous studies. In the study by Rudolf, Wang & Wu (2023), it was found that the Arab Spring had a negative effect on gender norms in the short run, in protest countries. The authors measured the gender norms by equal rights across gender, women's unrestricted access to occupations, and women's rights to initiate divorce. In a similar way, the study made by Ghazalian (2022) found a negative impact of the Arab Spring in Jordan on another indicator of women's empowerment, namely female labor force participation. Even though the measurements in the studies are different from the indices created in this thesis, their results could potentially still indicate somewhat of a contrast. In addition, our results might also be challenged by previous findings that concern the fact that the Muslim Brotherhood organized the biggest protests in Jordan during the Arab Spring (Beck & Hüser, 2015). This could suggest that their popularity would influence Jordanian views on gender equality negatively, especially for Jordanians in support of the Brotherhood, but it is however not apparent from the results in our study.

Since the Arab Spring, Jordan underwent changes in laws and implementations of policy reforms addressing violence against women (OECD, 2020). New laws or amendments as well as implementation of policies that aim to protect women, might have the potential to enhance the ability for women to exercise choice. Moreover, they would also set the tone for future formal institutions, in line with the theory by Acemoglu, Johnson, & Robinson (2005). Two important laws, the family protection law, and the penal law, were revised in 2017 as a result of the pressure partly from women's rights activist groups who were active both during the Arab Spring and forward (OECD, 2020). These women could be said to have exercised de facto political power and challenged prevailing norms. Even though the revisions of laws bear the potential in improving the situation for women and are thus in line with our results, it should be acknowledged that the revisions made might not be encompassed within our existing data set. Nevertheless, it is conceivable that prior to the revisions, people were aware of the impending

changes. This could have potentially influenced their behavior in advance, but the exploration of it or their awareness of upcoming revisions has not been delved into within the scope of this thesis. The slow change of informal institutions and the process of norm internalization should be recognized when thinking of the potential influence on behavior.

Actions being taken toward actual violence might have implications on attitudes. In the study by Khawaja, Linos, & El-Roueiheb (2007), it was found that women who had experienced intimate partner violence were more likely to be supportive of wife beating than other women. This might suggest that if laws tackling violence are successful in reducing it, then women may change their attitudes and become less supportive of violence. Moreover, the cyclical relationship that was found emphasizes the link between actual violence and attitudes by proposing that it must not be the attitudes that need to be changed initially, but instead that starting from the other end (that is, the actual violence) might impact the attitudes. In addition, it could be crucial that laws stress that violence should not be a normal aspect of marriage. The importance can be illustrated by the finding that women who are beaten think, to a large extent, that it is customary to the marriage (Diop-Sidibé, Campbell & Becker, 2006), and this could perhaps contribute to an acceptance and justification of it among women. Since a positive trend in both indices over time can be seen, it is important that changes in formal institutions continue to happen that keep the upward trend going.

The results in Table 1 and Table 2 suggest that younger age groups have negative associations with women's empowerment, compared to older age groups, for both indices. This is further displayed in Figure 2 and Figure 3, illustrating the predicted values for different age groups. The particular associations for age groups with women's empowerment align with the findings of Kostenko, Kuzmuchev & Ponarin (2016), who found that the most conservative groups (those who are against gender equality), are largely represented by people in the age group 18-34. The examination of age groups should also consider the aspect of time, and when doing so it seems that all age groups have experienced an increase in empowerment over time. This finding indicates a contrast with Abbott (2017), who explains that prevailing gender norms in the MENA region reinforce gender norms and that this keeps younger generations from increasing their support for gender equality. In other words, while the results in this thesis show that younger generations might hold more conservative views, there seems to have been a positive change among all age groups after the Arab Spring. In exploring the underlying factors for the observed trend of increasing empowerment with age, one factor to consider is the potential influence of age-disparate relationships. Without assessing the prevalence of such relationships, one could speculate that younger women are more negatively affected with regard to their agency by these relationships.

The geographical location seems to have limited association with women's empowerment for the Instrumental agency index since only one value in Table 3 showed significance: *Central/Rural*. This particular association is negative when compared to the baseline *Central/Urban*, as women living in Central/Rural score approximately 0.08 lower compared to the baseline. The estimated coefficient is however incomprehensible and does not affect the overall score that much. As for the Intrinsic agency index, all estimated coefficients are statistically significant, but several of the values are modest at best. Similarly, illustrated in Figure 4 and Figure 5, the predicted values for regional groups differ slightly. It is not fully apparent why the regional coefficients are insignificant for the Instrumental agency index (and significant for the Intrinsic), in Table 3. Although, we can see that the coefficients for control variables *Head of household* and *Currently working* are either more or only statistically significant for the Instrumental, which would suggest that these variables have better explanatory power for this index. The control variables in Table 3 seem to grasp aspects, previously captured by the Region/Area in Table 2. A possible explanation for this could be that bargaining power play a vital role in decision-making (which is a major determinant for the Instrumental agency index), and that it is well represented by these particular control variables.

The association between a woman being the head of the household and women's empowerment is positive, and in our opinion logical. This corresponds with the theory about informal institutions, and more specifically the distribution of bargaining power within the household. It could be presumed that a woman who is considered the head of the household would have a final say in household and family decisions. This variable is however not significant for the Intrinsic agency index. Further, the association between women currently using contraception and women's empowerment is slightly positive but still significant for both indices. This is, to some extent, in line with the finding by Diop-Sidibé, Campbell & Becker (2006), that contraception use has a negative association with the frequency of beatings. Analog to this, is the positive significant association between women currently working and women's empowerment for the Instrumental agency index. One could possibly assume that this association implies that the currently working women have a slightly higher bargaining power.

The results show a positive association between the level of education and women's empowerment. This is true both for the women's as well as their partners' educational levels. The results correspond to the findings by Le & Nguyen (2021) who found that an additional year of education led to an increase in women's empowerment, and Kostenko, Kuzmuchev & Ponarin (2016), who found that the groups in favor of gender equality consist of people with higher education. In this thesis, the woman's level of education has a greater association with women's empowerment compared to the woman's partner's level of education.

A limitation of this study, aside from not being able to establish true causality, is the measurements of empowerment in the method. Firstly, it is important to address the choice of weighting each variable in the indices equally. A potential issue following that choice can be illustrated by e.g. the fact that women acquiring the ability to have the final say in large household purchases decisions, is indicating the same empowerment for them as acquiring the ability to have the final say regarding their own health care. The reason behind the decision is that the equal weights simplify the creation of the indices and thus the method. Secondly, the variables relating to the final says have been coded as 1 if the women alone or jointly with someone else decide on the different matters. Perhaps, it could be argued that if they have the final say jointly with someone else, it should result in a lower score compared to if they make the final say on their own. This choice was also made because of simplification.

We would like to point out a limitation of our data set that concerns the absence of a religious variable. However, the vast majority of the respondents in our data set conform to Islam, resulting in a small variance in religious beliefs within the sample. There may be differences based on e.g. the particular branch of Islam and level of religiousness, but such information was not offered within the data set. Additionally, Abbott (2017) mentioned social and cultural heritage as more important to patriarchal attitudes than Islam itself, suggesting that indicators for these factors would be even more valuable to include. Extraction of such indicators posed a challenge due to the lack of clearness and straightforwardness in the data set and was therefore not incorporated. Having said that, this limitation to the data set does not interfere with the quality of our method and has not hindered us in addressing our research questions.

We also want to make note that women's agency is not a completely covering measurement of women's empowerment and gender equality. As mentioned by Kabeer (1999), empowerment consists of resources, agency, and achievements, and we have chosen to only focus on the dimension of agency. In addition, instead of using conventional measurements such as women's labor force participation or level of education in the creation of indices, we have chosen to use these variables to control for differences in women's agency. We argue that this should not pose complications, but rather add to the existing mainstream approaches. It is also important to comment on the interpretation of the variables included in the indices, and if they accurately depict women's strategic life choices. We consider that the indicators used in the indices capture this to a considerable degree.

8 Conclusion

This thesis aims to examine the potential association between the Arab Spring and women's empowerment in Jordan, as well as to explore the potential association that women's empowerment has with age respectively geographical location. Two indices are created, that seek to capture women's empowerment through agency, which is defined as the ability to articulate and pursue goals. These are the Instrumental agency index and the Intrinsic agency index. Our results indicate a positive association between the Arab Spring and women's empowerment. Further, the results show a negative association between younger age groups and women's empowerment, compared to older age groups. The regional differences are not prominent for the Instrumental agency index.

The findings also suggest that education has a positive association with women's empowerment. Moreover, women being heads of households, as well as women currently using contraception, has a positive association with women's empowerment (for both indices). The results also suggest that women having one additional child has a negative association. For the Instrumental agency index, the results show a positive association between women currently working and women's empowerment. There could not be found any association between women currently married and women's empowerment.

We recognize that the findings of this thesis cannot be established as true causality, but rather as correlations, and that some variables might not be controlled for. While the findings of this thesis depend on the specific context of the Arab Spring in Jordan, they might offer insights that could be applicable to similar political contexts. Therefore, we hope that our results act as a catalyst for further investigation into women's agency. If so, it could be relevant to incorporate men's attitudes and women's experiences of actual violence. Also, including more variables of instrumental and intrinsic agency would perhaps better measure women's agency. Moreover, investigating differences in women's agency depending on the level of religiosity could also be of interest.

9 References

Abbott, P. (2017). Gender Equality and MENA Women's Empowerment in the Aftermath of the 2011 Uprisings. *SSRN Electronic Journal*. doi:10.2139/ssrn.2902890

Acemoglu, D., Johnson, S. & Robinson, J. (2005). Institutions as the Fundamental Cause of Long-Run Growth. *Handbook of economic growth*, 1, p. 385-472.

Alsop, R. & Heinsohn, N. (2005). *Measuring Empowerment in Practice: Structuring Analysis and Framing Indicators*. World Bank Policy Research Working Paper. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=665062 [2023-05-10]

Beck, H. & Hüser, S. (2015). Jordan and the 'Arab Spring': No Challenge, No Change? *Middle East Critique*. 24(1), p. 83-97. doi:10.1080/19436149.2014.996996.

Blackstone, R.S. (2017). WOMEN'S EMPOWERMENT, HOUSEHOLD STATUS AND CONTRACEPTION USE IN GHANA. *Journal of Biosocial Science*, 49(4), p. 423-434.

Bradley, J. R. (2012). *After the Arab Spring: How Islamists Hijacked the Middle East Revolt*. Palgrave Macmillan.

Britannica Academic (n.d.). Arab Spring. Available at: Britannica Academic. [2023-05-04]

Caldwell, C.J. (1982). *Theory of Fertility Decline*. Academic Press.

Diop-Sidibé, N., Campbell, C.J., & Becker, S. (2006). Domestic violence against women in Egypt—wife beating and health outcomes. *Social Science & Medicine*, 62(5), p. 1260-1277. doi:10.1016/j.socscimed.2005.07.022.

Duflo, E. (2012) Women Empowerment and Economic Development, *Journal of Economic Literature*, 50(4), pp. 1051–1079. doi:10.1257/jel.50.4.1051.

East African women. *Social Science & Medicine*, 247, p. 112803. doi:10.1016/j.socscimed.2020.112803.

El-Mallakh, N., Maurel, M. & Speciale, B. (2018). Arab spring protests and women's labor market outcomes: Evidence from the Egyptian revolution. *Journal of Comparative Economics*, 46(2), p. 656-682. doi:10.1016/j.jce.2017.12.004.

Esposito, J. L., Sonn, T. & Voll, J. O. (2016). *Islam and Democracy After the Arab Spring*. Oxford University Press.

Ghazalian, L.P. (2022). The effects of the Arab Spring on female labour force participation in the MENA region. *Economics of Transition and Institutional Change*, 30(4), p. 869-00. doi:10.1111/ecot.12322.

Haghighat, E. (2013). Social Status and Chnage: The Questions of Access to Resources and Women's Empowermenr in the Middle East and North Africa. *Journal of International Women's Studies*, 14(1), p. 273-299.

Inglehart, R. & Norris, P. (2003) *Rising Tide: Gender Equality and Cultural Change Around the World*. Cambridge University Press.

Jones, R.E., Haardörfer, R., Ramakrishnan, U., Yount, M.K., Miedema, S.S., Roach, D.T. & Girard, W.A. (2020). Intrinsic and instrumental agency associated with nutritional status of East African women. *Social Science & Medicine*, 247. doi:10.1016/j.socscimed.2020.112803.

Kabeer, N. (1999). Resources, Agency, Achievements: Reflections on the Measurement of Women's Empowerment. *Development and Change*, 30(3), pp. 435–464. doi:10.1111/1467-7660.00125.

Kandiyoti, D. (1998). Bargaining with Patriarchy. *Gender Society*, 2(3), p. 274-290.

Kenya National Bureau of Statistics & African Centre of Excellence for Inequality Research. (2020). *Inequality trends and diagnostics in Kenya*. Kenya National Bureau of Statistics.

Khawaja, M. (2004). Domestic violence in refugee camps in Jordan. *International Journal of Gynecology and Obstetrics*, 86(1), p. 67–69.

Khawaja, M., Linos, N., & El-Roueiheb, Z. (2007) Attitudes of Men and Women Towards Wife Beating: Findings From Palestanian Refugee Camps in Jordan. *Journal of Familiy Violence*, 23(3), p. 211-218. doi:10.1007/s10896-007-9146-3.

Kish Bar-On, K. & Lamm, E. (2023). The interplay of social identity and norm psychology in the evolution of human groups. *The Royal Society Publishing*, 378(1872). doi:10.1098/rstb.2021.0412.

Kostenko, V.V., Kuzmuchev, P.A. & Ponarin, E.D. (2016). Attitudes towards gender equality and perception of democracy in the Arab world, *Democratization*, 23(5), pp. 862–891. doi:10.1080/13510347.2015.1039994.

Le, K. & M, Nguyen. (2021). How Education Empowers Women in Developing Countries. The B.E. *Journal of Economic Analysis & Policy*; 21(2): p. 511-536. doi:10.1515/bejeap-2020-0046.

Meyersson, E. (2014). Islamic Rule and the Empowerment of the Poor and Pious. *Econometrica*, 82(1), p. 229-269. doi:10.3982/ECTA9878.

Moghadam, V. M. (2014). Modernising Women and Democratisation after the Arab Spring. *The Journal of North African Studies* 19: 2, 137-142. doi: 10.1080/13629387.2013.875755.

National Geographic (2019). *What was the Arab Spring and how did it spread?*
https://www.nationalgeographic.com/culture/article/arab-spring-cause

Norris, P. & Inglehart, R. (2002). Islamic Culture and Democracy: Testing the 'Clash of Civilizations' Thesis. *Comparative Sociology*, 1(3-4), p. 236-263. doi:10.1163/156913302100418592.

Norris, P. & Inglehart, R. (2004). *Sacred and Secular*. Cambridge University Press.

North, C.D. (1990). *Institutions, Institutional Change and Economic Performance*. Cambridge University Press (Political Economy of Institutions and Decisions).
doi:10.1017/CBO9780511808678.

OECD. (2020). Changing Laws and Breaking Barriers for Women's Economic Empowerment in Egypt, Jordan, Morocco and Tunisia. https://www.oecd-ilibrary.org/sites/f1d9fe68-en/index.html?itemId=/content/component/f1d9fe68-en. [2023-05-04]

Ram Pillarisetti, J. & McGillivray, M. (1998). Human Development and Gender Empowerment: Methodological and Measurement Issues. *Development Policy Review*, 16, p. 197-203.

Rizzo, H., Abdel-Latif, A. & Meyer, K. (2007). The Relationship Between Gender Equality and Democracy: A Comparison of Arab Versus Non-Arab Muslim Societies. *Sociology*, 41(6), p. 1151-1170. doi:10.1177/0038038507082320.

Rudolf, R., Wang, S. & Wu, F. (2023). The Arab Spring, a setback for gender equality? Evidence from the Gallup World Poll. *Journal of Asian Economics*, 84, p. 101578. doi:10.1016/j.asieco.2022.101578.

Teti, A., Abbott, P. Teti, A., Abbott, P. & Cavatorta, F. (2018) *The Arab Uprisings in Egypt, Jordan and Tunisia*. Cham: Springer International Publishing. doi:10.1007/978-3-319-69044-5.

The DHS Program. (n.d.). *Demographic and Health Survey (DHS)* https://www.dhsprogram.com/Methodology/Survey-Types/DHS.cfm [2021-04-25]

Tobin, S.A. (2012). Jordan's Arab Spring: The Middle Class and Anti-Revolution. *Middle East Policy*, 19(1), pp. 96–109. doi:10.1111/j.1475-4967.2012.00526.x.

Tonnessen, L. (2013). *Prospects for Gender Equality After the Arab Spring*. CHR Michelsen Institute.

UN. (2020). *Goal 5: Achieve gender equality and empower all women and girls*. https://www.un.org/sustainabledevelopment/gender-equality/ [2023-05-10]

UNDP. (1995). *Gender and human development*. Oxford University Press.

UNHCR (n.d.). *Gender equality and gender-based violence*. https://reporting.unhcr.org/equality-gender-based-violence [2023-04-28]

UNICEF. (2021). *Defining social norms and related concepts*. https://www.unicef.org/documents/defining-social-norms-and-related-concepts [2023-05-15]

UNICEF. (2014). *Regional report on out-of-school children*. https://uis.unesco.org/sites/default/files/documents/regional-report-on-out-of-school-children-middle-east-and-north-africa-2015-en.pdf [2023-05-10]

WIDE Education Inequalities. (n.d.). *Jordan*. https://www.education-inequalities.org/countries/jordandimension=%7B%22id%22%3A%22community%22%2C%22filters%22%3A%5B%22Urban%22%2C%22Rural%22%5D%7D [2023-05-18]

Williamson, E.O. (2000). The New Institutional Economics: Taking Stock, Looking Ahead. *Journal of Economic Literature*, 38(3), p. 595-613. doi:10.1257/jel.38.3.595.

Wooldridge, J.M. (2012). *Introductory Econometrics: A Modern Approach*. 5th Edition., Cengage learning.

World Bank (2019). *Gender-Based Violence (Violence Against Women and Girls)*. https://www.worldbank.org/en/topic/socialsustainability/brief/violence-against-women-and-girls [2023-05-10]

World Bank (n.d.). *Proportion of seats held by women in national parliaments (%) - Arab World*. https://data.worldbank.org/indicator/SG.GEN.PARL.ZS?locations=1A [2023-04-19]

Yitzhak, R. (2018). Between reform and islam: The Arab spring in Jordan 2011-2014. *Democracy and security*, 14 (1), pp. 24-44.

Yount, M.K., VanderEnde, E.K., Dodell, S. & Fai Cheong, Y. (2016). Measurement of Women's Agency in Egypt: A National Validation Study. *Social Indicators Research*, 128(3), p. 1171-1192. doi:10.1007/s11205-015-1074-7.

Appendices

Table A1. Regression with age interaction terms and controls

	Instrumental		Intrinsic	
Arab Spring	0.189	(0.117)	0.895***	(0.102)
Age group				
15-19	(ref)			
20-24	0.0489	(0.0845)	0.164	(0.0935)
25-29	0.129	(0.0859)	0.252**	(0.0908)
30-34	0.209*	(0.0872)	0.344***	(0.0872)
35-39	0.281**	(0.0864)	0.332***	(0.0906)
40-44	0.344***	(0.0888)	0.432***	(0.0971)
45-49	0.475***	(0.0918)	0.360***	(0.0997)
Interaction terms				
Arab Spring × 20-24	0.110	(0.124)	-0.00258	(0.108)
Arab Spring × 25-29	0.0643	(0.121)	-0.160	(0.102)
Arab Spring × 30-34	0.0493	(0.124)	-0.201*	(0.102)
Arab Spring × 35-39	-0.00884	(0.122)	-0.135	(0.105)
Arab Spring × 40-44	0.0453	(0.119)	-0.193	(0.111)
Arab Spring × 45-49	-0.0657	(0.125)	-0.0664	(0.109)
Region/Area				
Central/Urban	(ref)			
Central/Rural	-0.0775*	(0.0378)	-0.174***	(0.0364)
North/Urban	-0.0434	(0.0227)	-0.157***	(0.0216)
North/Rural	-0.0131	(0.0277)	-0.277***	(0.0315)
South/Urban	-0.0161	(0.0326)	-0.131***	(0.0235)
South/Rural	-0.0399	(0.0293)	-0.285***	(0.0301)
Educational level				
No education	(ref)			
Primary	0.199***	(0.0538)	0.345***	(0.0533)
Secondary	0.576***	(0.0476)	0.709***	(0.0498)
Higher	0.802***	(0.0500)	0.899***	(0.0523)
Partner's educational level				
No Education	(ref)			
Primary	0.237***	(0.0573)	0.154**	(0.0528)
Secondary	0.381***	(0.0602)	0.221***	(0.0538)
Higher	0.388***	(0.0656)	0.325***	(0.0643)
Individual characteristics				
Head of household	0.280***	(0.0556)	0.104*	(0.0451)
Currently working	0.179***	(0.0202)	0.0293	(0.0174)
Currently married	0.112	(0.0908)	0.172	(0.0903)
Currently using contraception	0.116***	(0.0169)	0.0979***	(0.0143)
Number of living children	-0.0228***	(0.00492)	-0.0312***	(0.00422)
Constant	2.813***	(0.129)	1.677***	(0.141)
Observations	40,729		40,729	
R^2	0.090		0.229	

Standard errors in parentheses

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

Table A2. Regression with region interaction and controls	Instrumental		Intrinsic	
Arab Spring	0.225***	(0.0314)	0.635***	(0.0332)
Region/Area				
Central/Urban	(ref)			
Central/Rural	-0.103*	(0.0474)	-0.315***	(0.0613)
North/Urban	-0.0140	(0.0329)	-0.315***	(0.0458)
North/Rural	0.00564	(0.0385)	-0.520***	(0.0560)
South/Urban	-0.0816*	(0.0354)	-0.296***	(0.0475)
South/Rural	-0.0816*	(0.0387)	-0.553***	(0.0530)
Interaction terms				
Arab Spring × Central/Rural	0.0458	(0.0752)	0.244***	(0.0705)
Arab Spring × North/Urban	-0.0467	(0.0439)	0.258***	(0.0494)
Arab Spring × North/Rural	-0.0370	(0.0540)	0.434***	(0.0607)
Arab Spring × South/Urban	0.0988	(0.0569)	0.260***	(0.0547)
Arab Spring × South/Rural	0.0738	(0.0570)	0.474***	(0.0588)
Age group				
15-19	(ref=			
20-24	0.111	(0.0603)	0.159***	(0.0458)
25-29	0.163**	(0.0628)	0.158**	(0.0491)
30-34	0.233***	(0.0648)	0.226***	(0.0471)
35-39	0.270***	(0.0654)	0.251***	(0.0473)
40-44	0.364***	(0.0657)	0.312***	(0.0480)
45-49	0.420***	(0.0700)	0.322***	(0.0499)
Educational level				
No education	(ref)			
Primary	0.192***	(0.0540)	0.330***	(0.0530)
Secondary	0.564***	(0.0474)	0.690***	(0.0492)
Higher	0.793***	(0.0501)	0.877***	(0.0518)
Partner's educational level				
No Education	(ref)			
Primary	0.237***	(0.0575)	0.147**	(0.0527)
Secondary	0.380***	(0.0604)	0.220***	(0.0536)
Higher	0.388***	(0.0663)	0.312***	(0.0638)
Individual characteristics				
Head of household	0.284***	(0.0558)	0.102*	(0.0447)
Currently working	0.178***	(0.0201)	0.0332	(0.0173)
Currently married	0.0995	(0.0910)	0.187*	(0.0901)
Currently using contraception	0.115***	(0.0168)	0.0914***	(0.0143)
Number of living children	-0.0214***	(0.00494)	-0.0300***	(0.00419)
Constant	2.817***	(0.120)	1.841***	(0.118)
Observations	40,729		40,729	
R^2	0.089		0.234	

Standard errors in parentheses

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