Université Clermont Auvergne
École Doctorale de Sciences Économiques, Juridiques, Politiques et de Gestion
Centre d'Études et de Recherches sur le Développement International (CERDI)

THREE ESSAYS ON GENDER ECONOMICS

Thèse nouveau Régime
Présentée et soutenue publiquement le 25 Juin 2021
Pour l'obtention du titre de Docteur *ès* Sciences Économiques

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Remerciements

Il n'est pas tâche aisée de s'atteler à la rédaction des quelques mots de remerciements à la suite d'une thèse. Ceux-ci ne sauraient suffire dans leur forme définitive pour exprimer toute la gratitude et la révérence que j'ai pour celles et ceux qui m'ont épaulé tout au long de ces années. Merci à vous tous de m'avoir accompagné et soutenu.

En premier lieu, je tiens à remercier mes deux directrices, sans qui tout ce qui va suivre n'aurait pu être, sans la qualité de leur encadrement et leur soutien inconditionnel et total, malgré les épreuves, les doutes et les embûches. Martine et Francesca, vous savez à quel point vous avez joué un rôle déterminant et essentiel ces dernières années. Je mesure aussi combien vos encouragements, votre confiance et votre bienveillance furent salutaires. Votre ouverture d'esprit a posé les jalons d'une relation de confiance et de pistes de recherches qui auraient pu déconcerter bien plus d'un encadrant. Vous avez aussi su m'abriter avec une force et une bienveillance dont je vous serais pour toujours reconnaissant. Martine, je n'oublierai pas nos discussions dans votre salon, véritable havre de paix. Vous avez toujours porté ce regard d'intérêt sur mes travaux et une humanité sans pareille dans nos échanges. Vous avez été ce soutien indéfectible sans lequel je n'aurais pas continué. Francesca, la co-écriture à tes côtés de notre article de confinement fut une expérience de recherche incroyablement complète et formatrice, de l'idée de la collecte de données à la médiatisation imprévue de notre travail. Je soupèse la chance que j'ai eue de connaître cette expérience professionnelle à tes côtés, d'avoir pu bénéficier tout au long de ma thèse de tes intuitions, de tes conseils et apprendre de ta rigueur.

Je remercie également Jean-Marie Baland, Habiba Djebbari, Élise Huillery et Karine Marazyan d'avoir accepté de faire partie de mon jury et pour leurs précieux commentaires. A Karine Marazyan, je voudrais tout particulièrement adresser des remerciements appuyés. Cette thèse doit beaucoup à notre rencontre fortuite à Cotonou. Tu m'as transmis le goût des archives, de Dakar et tu m'as accueilli à bras ouverts à Paris pour un séjour de recherche dans ton laboratoire. Nul doute que ce parcours n'aurait jamais été le même sans nos discussions et ta confiance d'embarquer un jeune doctorant inconnu sur les zem de Porto Novo. Je suis extrêmement fier et reconnaissant que tu aies accepté de faire partie de ce jury.

Cette thèse s'est aussi réalisée avec le concours et la bienveillance des chercheurs et des membres des institutions qui m'ont accueilli dans des conditions idéales, au CERDI à Clermont-Ferrand, à Paris à l'IEDES et à l'IRD de Dakar. Je voudrais remercier tous ceux que j'ai pu croiser au quotidien et qui m'ont tant apporté que ce soit sur le plan professionnel ou humain. Toutes ces rencontres stimulantes et enrichissantes sur le plan intellectuel ont façonné une certaine idée de la recherche et tout particulièrement du développement.

J'ai beaucoup appris lors de ces dernières années, mais aussi lors de mes études à Clermont, à Bordeaux ou à l'étranger, que soit à Istanbul, à Bichkek ou Bogotá. Cette thèse est l'aboutissement d'un travail de recherche mais également d'un parcours universitaire sinueux qui m'a offert mes plus grandes joies comme les épreuves les plus difficiles de ma vie. C'est à tout cela que je pense alors que me vient le moment de refermer ce cycle.
Puisque ce travail clôture une aventure de presque huit ans en Auvergne, je pense également à tous ceux à qui j'avais promis que je n'y resterai pas plus d'un an suite au premier hiver et à ceux qui m'ont entouré pendant ces dernières années. Tout particulièrement, au générique de cette vie de thésard, Jules Gazeaud y occupe un des rôles les plus fameux, comme ami-coloc-super chercheur-cycliste véloce spécialisé carbo et tavla. Je suis heureux d'avoir tant partagé avec toi lors de ces années. Nul doute que mes journées auraient été bien plus ternes sans Pierre Lesuisse, dont le sourire communicatif et le verbe partageur furent un souffle de vie sans commune mesure. Merci à Jeremy Pepy d'avoir été ce co-bureau bien trop absent mais si essentiel lorsque la route se fait plane ou la bière pressante. Merci à tous mes collègues doctorants clermontois dont je vais citer les noms pêle-mêle mais qui ne doivent s'en offusquer tant j'ai appris et passé des moments formidables à leurs côtés : Ababacar, Alioune, Anna, Camille, Clément, Elsa, Jérôme, Jocelyn, Martha, Muhammad Adil, Pauline, Pierre M. Un merci tout spécial à ceux qui œuvrent pour nous rendre le quotidien plus facile. A Chantal, qui valorise si bien notre recherche et le labo. Merci aussi à Johan et Martine pour leur gentillesse et multiples coups de main tout au long de ces années. Au shérif Hassen pour sa gouaille. A Dakar, mes pensées vont à la famille Bah, Astou et Abdoulaye qui m'ont accueilli comme un des leurs dans les rues paisibles de Mermoz. Merci aussi aux petits, Ousmane et Adamali pour les parties d'Uno endiablées à la plage des Mamelles. Côté parisien, il y a eu tant de bons et beaux moments dans cet écrin de verdure du Jardin Tropical, et je tiens à remercier tout particulièrement Annélie, Emma, Quentin et Mister Jérôme Chassaing pongiste aguerri.

C'est sous l'ombrage des pins de Vincennes que je suivais la défaillance de Romain B. aux espoirs brisés sur le Col du Soulor, hagard, et qui pourtant défila de pois vêtu rue de Rivoli. Cette thèse est dédiée aux réprouvés qui se relèvent, même pliés du poids des jours maussades. Merci à tous les porteurs d'espoir et de bidon.

Merci à celles et ceux que j'ai aimé librement pour l'amitié et la douceur de la vie à leurs côtés. Merci pour la fraicheur des liqueurs du Palacios des buttes de Crimée. Merci pour les aventures aux murs drapés de fleurs fanées du Jean Jaurès. Merci à mes amis d'enfance, mes sœurs et mes frères en toutes circonstances, mes compagnons de Chaban et ceux d'ivresse, d'autres de Rumex et certains de confidences. Merci aux amis de la pente volcanique, ceux du Chantilly gourmand et ceux du café noir de Saint-Pierre.

Merci à ceux qui ne sont plus là aujourd'hui pour me soutenir de leurs regards que j'aurais imaginé fiers, mais un tantinet circonspects quant à la tâche accomplie. Merci à ma famille. Merci à ma mamie Lucette, 91 ans et demi. A mes tantes, mes oncles, mes cousines et cousins, pour leur soutien. Merci à mes parents pour tout cela et pour l'amour aussi.

Summary

Gender issues have recently flourished in the public attention due to the women's mobilizations for their rights during the last decade. This dissertation provides three empirical essays related to the gender economics documenting the marriage timing long-term determinants, the intra-household women's empowerment, the housework division and the conflicts in the couple.

Chapter 2 investigates the long-run effects of missionary' activities in Togo and Benin on the marriage market. Using a newly own-collected dataset on mission's location and past schooling supply, we show that women who are located near historical missions tend to be more educated and get married latter. Excluding the religious conversion role to explain the delay of their marriage, we show that this effect is significantly linked to the marriage payment norms. Our mechanism states that higher bride price associated to higher education increases the women's marriage age.

Chapter 3 refers to the litterature about the effect of women political participation on women's empowerment. We exploit the geographic heterogeneity of the Arab Spring Events in Egypt to show that the most exposed women to high protest intensity are more likely to have final say in their household, and to experience a decline in the acceptation of the domestic violence and their daughters' circumcision. Alternative measures of women's political direct participation during the revolution at geographical level support our findings.

Chapter 4 analyses the effect of the stay-at-home policy during the 2020 Spring in France on the household chores division and the occurence of the conflicts at home. Relied on own-collected data about french partnered women, we show that the lockdown did not offer an opportunity to strongly renegotiate the housework and childcare between partners. We find that men only changed their participation in household chores when they became a 'quasi-leisure' because of the pandemic. We also document that an unbalanced division of the domestic production is directly linked to an increase of the intrahousehold conflicts.

Résumé

Les questions de genre ont récemment fait l'écho d'une attention croissante dans l'opinion publique durant la dernière décennie en raison d'une mobilisation sans précédent des femmes dans la lutte pour leurs droits. Cette thèse s'appuie sur trois essais empiriques documentant les déterminants de long-terme de l'âge au mariage des femmes, la prise de décision au sein du ménage des femmes, la répartition des tâches et les conflits dans le couple.

Le Chapitre 2 étudie la persistance dans le temps de l'effet des missionnaires et de leurs activités au Togo et au Bénin sur le marché matrimonial. Porté par un nouveau jeu de données collecté par l'auteur sur l'implémentation et l'offre scolaire des missionnaires, ce travail montre que les femmes qui se situent à proximité des missions historiques ont tendance à être plus éduquées et se marient plus tard. En éliminant le rôle de la conversion religieuse dans l'explication de ce temps de célibat, nous montrons que notre effet est directement lié aux normes sociales de la dot. Notre mécanisme s'appuie sur le fait que l'augmentation du nombre d'années d'éducation augmente le prix de la dot et par conséquent l'âge au mariage des femmes.

Le Chapitre 3 s'insère dans la littérature sur les effets de la participation politique des femmes sur leur émancipation. En exploitant l'hétérogénéité géographique du Printemps Arabe Égyptien, nous montrons que les femmes plus exposées à des fortes intensités révolutionnaires sont plus impliquées dans les prises de décisions de leurs ménages, ainsi qu'elle rejettent davantage la justification de la violence domestique et l'excision de leurs filles. Des mesures alternatives de participation politique directe durant la révolution confirment nos résultats.

Le Chapitre 4 analyse les effets du confinement durant le printemps 2020 en France sur la division des tâches ménagères et la survenance des conflits au sein du couple. En s'appuyant sur un échantillon de femmes en couple issu de données d'enquête collectées par les auteurs, nous trouvons que cette période particulière n'a pas permis de renégocier réellement le partage des tâches. En effet, nous montrons que les hommes augmentent seulement leur participation dans les tâches qui deviennent des "quasi-loisirs" durant la pandémie. Par ailleurs, nous documentons qu'une répartition inégalitaire du travail domestique est directement liée à une augmentation des conflits intra-ménages.

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AOF	Afrique Occidentale Française
AURA	Auvergne-Rhône-Alpes
BDHS	Beninese Demographic and Health Survey
CAPMAS	Central Agency for Public Mobilization and Statistics
CERDI	Centre d'Études et de Recherches sur le Développement International
DHS	Demographic and Health Survey
EDHS	Egyptian Demographic and Health Survey
EICM	Enquête sur l'Impact Économique et social du COVID-19 sur les Ménages
ELMPS	Egypt Labor Market Panel Survey
ESA	European Space Agency
ETVA	Enquêtes sur la Transition vers la Vie Active
FE	Fixed Effects
FGM	Female Genital Mutilation
GPS	Global Positioning System
HIMS	Household International Migration Survey
ILO	International Labour Organization
IFOP	Institut Français d'Opinion Publique
INSEE	Institut National de la Statistique et des Études Économiques
IOM	International Organization for Migration
LFS	Labor Force Survey
LPM	Linear Probability Model
MCA	Multiple Correspondence Analysis
MENA	Middle East North Africa
MICS	Multiple Indicator Cluster Surveys
OCDE	Organisation de Coopération et de Développement Économique
OECD	Organization for Economic Cooperation and Development
OLS	Ordinary Least Squares
PIB	Produit Intérieur Brut
SMA	Société des Missions Africaines
SRTM	Shuttle Radar Topography Mission
SVD	Societas Verbi Divini

SYPE	Survey of Young People in Egypt
UNICEF	United Nations Children's Fund
UNFPA	United Nations Fund for Population Activities
UNHCR	United Nations High Commissioner for Refugees

Chapter 1

Introduction Générale

1.1 Avant-propos

Des Printemps Arabes Égyptiens et Tunisiens où les femmes défilèrent en première ligne (2010-2013) à la déferlante du Hirak algérien (2019-2021) en passant par les Iraniennes qui prirent le risque de se dévoiler en public (2018), le monde arabe a vécu une décennie secouée de revendications féministes affichées et déclamées, en pleine rue et en plein jour. Des centaines de milliers de femmes battant le pavé à Buenos Aires (2017-2020) au mouvement chilien Las Tesis (2019) essaimant à l'échelle internationale, l'Amérique latine bouillonna également de ces luttes sociales, d'ampleur alors inégalée en faveur des droits des femmes. Depuis 2017 en Amérique du Nord et en Europe, c'est la vague #metoo qui ébranla les médias et les opinions publiques, se faisant l'écho d'une libération salvatrice de la parole et élargissant à toutes les sphères sociales la question du consentement, de l'égalité entre les genres et en définitive de la place des femmes. Interpellant la société civile et le monde politique, ces luttes et leurs revendications ébranlent les pouvoirs ou les fondements sociétaux, bousculés par leur retentissement. Elles fleurissent, ici et ailleurs, en semblant s'affirmer sans marche arrière possible.

En marquant une rupture avec les décennies précédentes, où les discours féministes se sont constitués en marge ou à rebours des rapports politiques dominants d'alors, l'ère nouvelle qui se dessine ne pourra donc se contenter d'y répondre en surface ou feindre leur portée. Il s'agit d'une vague féministe, déferlante irrésistible sur l'ensemble des sociétés.

Ces mouvements, hautement politiques, ont de commun qu'ils sont éruptifs, venus de sursauts populaires, portés parfois par un rejet des institutions en place et très souvent par une conscientisation des rapports de genre en défaveur des femmes. En outre, la viralité de ces actions dans le champ visible (la rue ou les réseaux sociaux) en fait un terreau à fort pouvoir de transformation sociale et sociétale. Souvent bien

en dehors du cadre politique établi, imprégnées de la légitimité de la société civile populaire et rassembleuse, elles conquièrent des espaces de réflexion intime et sèment les idées de révolte - voire d'insurrection - face aux normes sociales en défaveur des femmes. De par leur expansion rapide et durable, elles fondent les rapports sociaux d'aujourd'hui et de demain, entre les genres, au travail, au sein des couples et des familles.

A l'instar de la société et dans un domaine où les femmes sont sous-représentées relativement à la population et à d'autres disciplines (Bayer and Rouse, 2016), la science économique n'est pas non plus exempte de remise en question. La fin des années 2010 a sonné comme l'heure d'une confrontation de la discipline avec son propre rapport au genre.[1] En utilisant un modèle de lexicométrie sur les fils de discussion du forum Economics Job Market Rumors, Wu (2018) montre que les stéréotypes de genre façonnent la discipline, une femme étant plus probablement ramenée à son apparence physique (ou à des informations personnelles) et un homme à ses caractéristiques professionnelles ou académiques. Ces stéréotypes de genre sont aussi à l'œuvre pour expliquer que les papiers écrits par une ou plusieurs femmes ont 6,8% moins de chance d'être acceptés en conférence que lorsqu'ils sont écrits par un ou plusieurs hommes (Hospido and Sanz, 2019).[2] L'ancrage des biais de genre se lit au sein même des futures générations de chercheurs, les étudiants masculins étant l'unique source des biais d'évaluation négatifs au détriment des enseignantes chercheuses, alors que leurs homologues masculins ne sont pourtant pas de meilleurs enseignants (Boring, 2017; Mengel et al., 2019). Si la discipline est aujourd'hui capable de prouesse pour sonder ses biais, elle a été un premier temps réticente à intégrer les questions de genre et il a fallu attendre la seconde moitié du XXe siècle pour en voir les premiers travaux sur la question (Talahite, 2014).[3] Désormais incontournables, les *gender issues* sont composantes essentielles du champ disciplinaire et balayent son spectre entier.

Les travaux qui s'inscrivent dans la thèse que vous allez lire sont donc le fruit du temps présent, celui de cette "vague irrésistible", de par les questions et l'intérêt qu'elle soulève, et des instruments et méthodes empiriques qu'offre cette discipline. Chacun des axes de ce travail répond à la question de la place des femmes, sous des angles

[1] Voir l'ouvrage "Publishing while female (summary)" de Hengel (2020) pour un état précis de la recherche en la matière.

[2] Cela étant, lorsqu'ils sont publiés dans les meilleurs journaux, les papiers écrits par au moins une femme sont de meilleure qualité que lorsque ce sont seulement des auteurs masculins (Hengel and Moon, 2020). Dans deux revues spécialisées en économie démographique, Grossbard et al. (2020) trouvent également que les articles avec une femme en auteur correspondant reçoivent en moyenne 24% de citations en plus que ceux avec un homme.

[3] Dans son ouvrage "A History of Feminist and Gender Economics", Giandomenica Becchio rappelle d'ailleurs que l'American Economic Association n'a reconnu qu'en 1990 l'économie du genre comme *subfield* de l'économie du travail (Becchio, 2019).

et des contextes particuliers et en conservant un cadre scientifique constamment égal : celui de la microéconomie appliquée dans une approche totalement empirique, basée sur l'utilisation données issues d'enquêtes individuelles.

Cette thèse s'est aussi articulée selon plusieurs ambitions, certainement interdépendantes, mais qui peuvent paraître éloignées de prime abord. Dans ce prélude à la lecture des travaux, ce sont davantage ces ambitions que nous mettons en musique. Aussi, cette introduction générale vient souligner les contributions des différents chapitres, sans toutefois faire l'étalage de l'exhaustivité de la littérature en matière d'économie du genre. La première ambition, présentée dans la Section 1.2, relève d'intégrer une partie de cette thèse dans une perspective des liens croisés entre économie du développement et économie du genre. Primordiale dans un contexte de persistance des inégalités hommes-femmes, la question des origines et du rôles des institutions historiques fait l'objet de la Section 1.3. Malgré ces enracinements culturels, la Section 1.4 questionne la porosité de ces normes sociales aux changements sociétaux et à la modification des contraintes pesant sur le ménage. En ouvrant la perspective du changement, le renversement de nombreuses situations d'inégalités est au cœur de cette section avec l'exemple du Printemps Arabe Égyptien sur la prise de décision des femmes et du confinement en France sur le partage des tâches au sein du couple.

1.2 Economie du genre *in* économie du développement

L'économie du développement, dans laquelle s'insèrent deux des trois chapitres de cette thèse, et l'économie du genre s'inscrivent intrinsèquement dans une logique à la croisée des chemins. Les réflexions autour de ce travail se sont d'ailleurs alimentées d'apports pluridisciplinaires non négligeables, que ce soit en sociologie, en science politique ou en histoire. Mêlant nécessairement des approches scientifiques d'horizons divers, les problématiques de genre s'épanouissent dans l'économie du développement. Par ailleurs, l'économie du développement reste un cadre particulièrement avisé pour se poser la question du genre (Duflo, 2012). Non en raison du fait qu'elle ne se pose pas dans les économies développées, mais les cadres culturels et institutionnels ou les tendances économiques de fond laissent voir que les situations d'inégalités de genre drastiques restent prégnantes dans les pays en développement (Jayachandran, 2015, voir *e.g.*).

Comme illustrée par la Figure 1.1, l'hétérogénéité des situations de discrimination au sein des ménages à l'encontre des femmes, bien que répandue de par le monde,

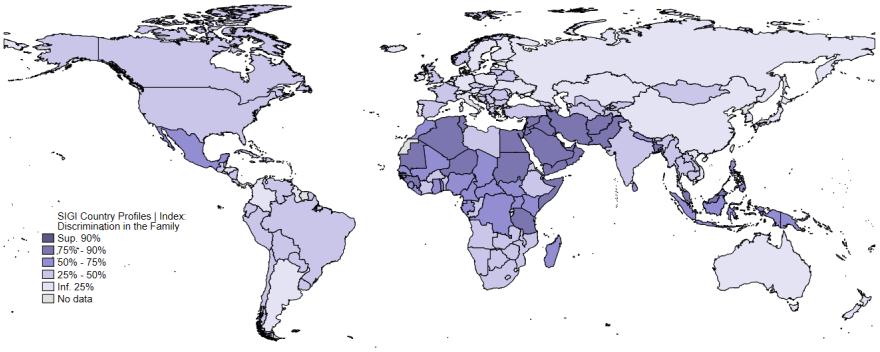
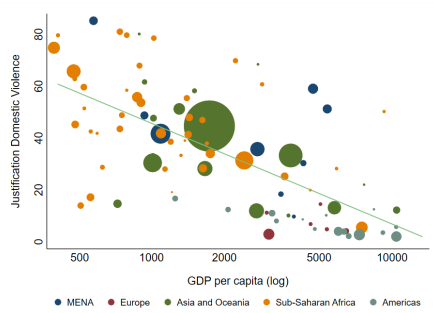


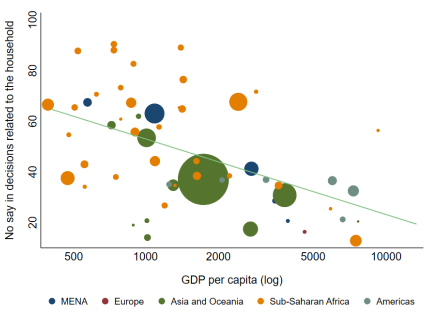
Figure 1.1 – Indicateur de discrimination dans la sphère domestique (OCDE, 2019)

Note: Carte construite par l'auteur selon les données de *Social Institution and Gender Index* (SIGI) 2019 de l'OCDE dans sa dimension "Discrimination dans la famille". Cet indicateur permet de mesurer la discrimination des femmes dans leur famille, en considérant les aspects légaux et sociétaux (lois formelles et informelles, normes et pratiques sociales). Cette dimension contient quatre indicateurs composites : le mariage précoce, les droits dans le ménage (droits équivalents au chef de famille par exemple), le divorce et l'héritage.

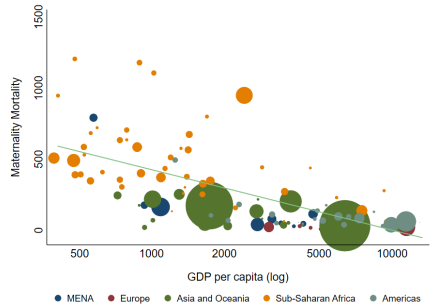
met en relief tout particulièrement les économies peu développées. Une simple relation linéaire entre PIB par habitant et indicateurs de développement nous permet d'illustrer autrement ces inégalités de genre et situation de bien-être disparates entre les pays (Figure 1.2). On observe qu'en moyenne plus les pays sont pauvres, plus la situation des femmes est en moyenne dégradée. Dans les pays les plus pauvres, les femmes vont avoir tendance à justifier davantage la violence domestique à leur encontre (Figure 1.2a) et sont plus nombreuses à déclarer ne prendre aucune décision relative à leur ménage (Figure 1.2b). Elles sont aussi plus nombreuses à mourir en donnant naissance (Figure 1.2c) et sont sous-représentées à l'école comparativement aux garçons (Figure 1.2d). Mettre uniquement en avant ces faits stylisés pourrait revenir à ne concéder qu'au développement, à la croissance économique et à l'augmentation du niveau de vie, la capacité d'améliorer la situation des femmes de par le monde. Documentée dans la revue de littérature de Duflo (2012), la relation entre développement et émancipation des femmes, bien que réelle, n'est pourtant pas suffisante à terme pour atténuer les biais de genre. Les décideurs politiques s'en sont bien aperçus et devant les retards pris sur ces inégalités dans les pays en développement, la cause pour l'égalité entre les genres et l'autonomisation avait été propulsée sur le devant de la scène lors de la Conférence Mondiale sur les Femmes de Beijing (1995) puis s'est inscrite aux Objectifs du Millénaire pour le Développement (2000) des Nations Unies (et réinscrite aujourd'hui aux Objectifs du Développement Durable en 2015).



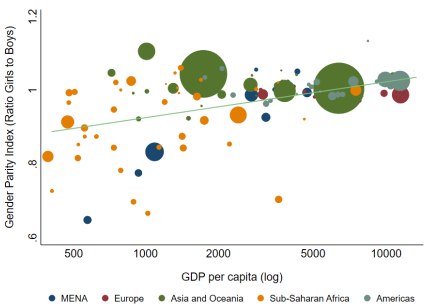
(a) Justification de la violence domestique



(b) Absence de pouvoir de décision dans le ménage



(c) Mortalité maternelle (pour 100 000 naissances)



(d) Ratio nombre de filles par garçon à l'école (primaire et secondaire combiné)

Figure 1.2 – Indicateurs de développement et PIB par habitant
Note: Données issues des *World Development Indicateurs* et *Demographic and Health Surveys*, moyenne des indicateurs sur la période 2010-2019 pour chaque pays. Le PIB par tête est une moyenne sur la période 2010-2019, en dollar constant de 2010. La taille des observations sur les différents nuages de points est pondérée selon le nombre d'habitants. Ces graphiques ont été librement inspirés par ceux présents dans Jayachandran (2015).

Missing women et questions contemporaines

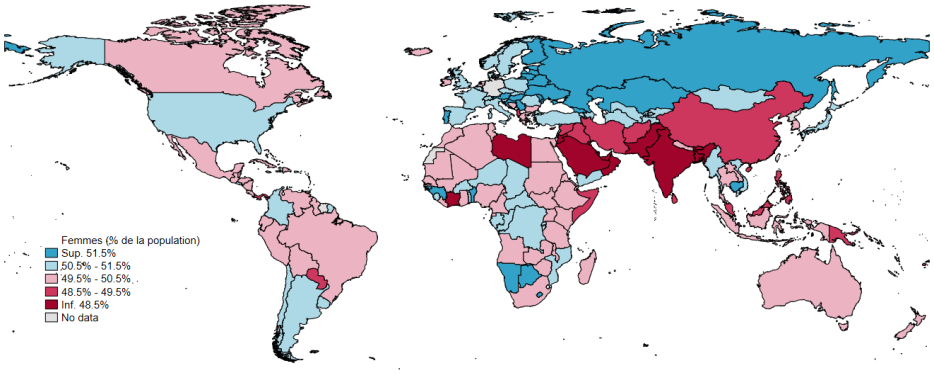
Pour illustrer ce propos sur l'insuffisance de la seule croissance économique pour améliorer la condition des femmes, prenons l'exemple tiré d'une des approches fondatrices de ces liens entrecroisés entre économie du développement et économie du genre, celle d'Amartya Sen avec son travail retentissant sur les "missing women", *i.e.* l'existence d'un gap entre nombre de femmes et nombres d'hommes dans les pays asiatiques et notamment en Inde (Sen, 1990). Pour Sen, ce sont 100 millions de femmes indiennes qui ont 'disparu', symboles des inégalités de genre et de la pauvreté dans cette région du monde. Autrement dit, ces femmes ne sont pas recensées alors qu'elles devraient l'être en l'absence de sur-mortalité précoce ou d'avortements ciblés. Ces travaux sont toujours d'actualité, en raison du fait que le déséquilibre de sex-ratio perdure aujourd'hui dans de nombreux pays malgré la forte médiatisation

du problème et l'augmentation du niveau de vie (Figure 1.3). Une des premières adresses sur ce constat a été de pointer du doigt une préférence des ménages pour les garçons, se traduisant par des avortements sélectifs lorsque le fœtus présente des organes féminins, des infanticides et un excès de mortalité des filles dans leurs premières années (voir la revue de littérature de Gupta (2005), et les travaux de Jha et al. (2006), Oster (2009), Jayachandran and Kuziemko (2011)).[4] En connaissant une hausse sensible de ces avortements dans les dernières années, cette situation nous offre un cas particulier de persistance, voire de renforcement, des inégalités de genre dans le temps, malgré le développement. Pour notre propos, ce fait stylisé nous permet la mise en relief de deux questionnements : celui des effets et du rôle de l'intra-ménage et la question de la persistance des pratiques culturelles.

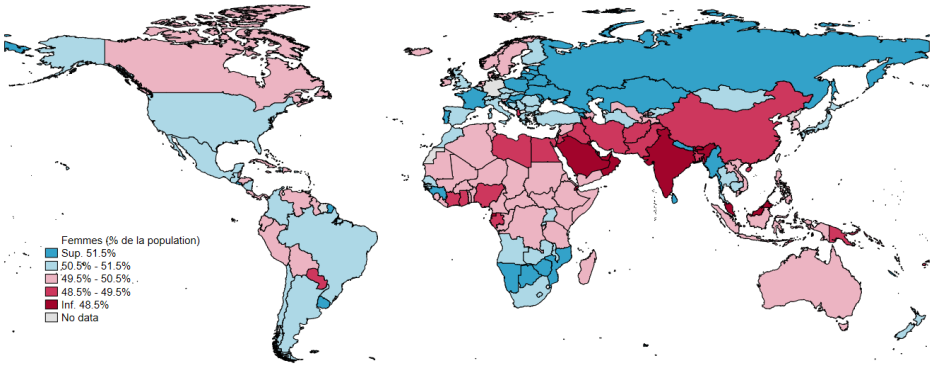
En effet, autour des premières recherches sur les facteurs explicatifs du sex-ratio, beaucoup d'auteurs se sont concentrés sur la disparition des jeunes filles à la naissance ou sur les premières années. Pourtant, dans le cas indien, une fraction importante, voire la majorité, de femmes manquantes sont dans les âges adultes et les causes de leur surmortalité restent obscures (Anderson and Ray, 2010, 2019). Dans des travaux récents, Calvi (2020) montre que les asymétries du pouvoir de décision entre les partenaires et les inégalités intra-ménage d'allocation des ressources (répartition des richesses à l'intérieur du ménage) expliquent pour une part importante les *missing women* qui ne sont pas dues à la préférence pour les garçons. Cette question est une illustration du développement relativement récent des recherches sur les dynamiques intra-ménage et leurs conséquences dans les pays les plus pauvres (Baland and Ziparo, 2018). Développement qui permet d'explorer les facteurs inertiels aux politiques publiques qui ignorent parfois cet aspect.

Par ailleurs, l'exemple des *missing women* met en lumière que, loin d'inverser la tendance, le développement ne se heurte pas nécessairement aux pratiques sociales et aux cultures qui les ont entérinées à travers les âges. Interroger cette continuité dans la préférence à la naissance pour les garçons nous plonge alors sur une réflexion sur les déterminismes culturels de ces pratiques. Les facteurs culturels sont pour beaucoup dans l'explication des inégalités de genre (Fernandez, 2007; Fernandez and Fogli, 2009). Connaitre leurs origines, et donc les causes sous-jacentes aux inégalités de genre, permet de décrypter les mécanismes à l'œuvre et *in fine* anticiper les effets bénéfiques (ou non) de politiques publiques intentionnellement adressées à un objectif de promotion de l'autonomie des femmes. Concernant les origines sur la préférence aux garçons, Fredriksson and Gupta (2018) montrent une relation positive et robuste (à l'échelle pays) entre les déséquilibres actuels et la Révolution

[4] Le développement technologique de l'ultrasonde a notamment permis de généraliser l'avortement de foetus féminin pour les ménages les plus riches et éduqués qui peuvent ainsi s'offrir cette sélection à la naissance (Bharadwaj and Lakdawala, 2013; Jha et al., 2011)



(a) 1980 - 1989



(b) 2010 - 2019

Figure 1.3 – *Missing women* (en % de femmes dans la population)
Note: Carte construite par l'auteur selon les données issues des *World Development Indicateurs* de la Banque Mondiale, moyenne de la part de femmes en pourcentage de la population totale par pays sur les périodes 1980-1989 et 2010-2019.

Néolithique, i.e. l'expérience précurseur de l'agriculture sédentaire face aux pratiques des chasseurs-cueilleurs. Pour Hazarika et al. (2019), ce sont plutôt les dotations en ressources dans l'Antiquité qui priment dans cette relation de long-terme. Ces deux travaux sont emblématiques car ils s'inscrivent de concert au sein d'une littérature naissante portant sur l'origine des inégalités de traitement entre les genres, littérature qui a ouvert une passerelle florissante entre l'histoire, l'anthropologie et la science économique.

Dans les travaux de recherche présentés dans cette thèse, nous allons ainsi nous focaliser sur ces deux angles particuliers. Le premier est celui de la question des origines des situations d'inégalité de genre et des effets de long terme des institutions, traitée sous le prisme de l'influence des missionnaires religieux sur le mariage. Le second se rapporte à la question de la tenacité des stéréotypes de genre dans le couple et dans l'intra-ménage, de par l'exemple d'évènements qui, chacun a leur manière, bousculent la place des femmes dans leur ménage.

1.3 Origine des normes de genre, histoire et rôle des missions religieuses

Lors des deux dernières décennies, une florissante littérature sur les déterminants de long-terme du développement a émergé à la lumière des travaux fondateurs de Acemoglu et al. (2001) et résumée dans les travaux de Nunn (2009, 2020), de Spolaore and Wacziarg (2013) et de Michalopoulos and Papaioannou (2020). Entre autres, l'angle historique a notamment permis de mettre en relief le rôle prépondérant sur la dynamique de développement de l'esclavage (Nunn and Wantchekon, 2011), des institutions pré-coloniales (Gennaioli and Rainer, 2007; Michalopoulos and Papaioannou, 2013) ou coloniales (Huillery, 2009), de la religion (McCleary and Barro, 2006) ou de la géographie (Nunn and Puga, 2012). Les questions sur les origines des *gender gaps* et leur persistance à travers le temps et les générations procèdent de cette percée dans le champ disciplinaire.[5] Comme facteurs historiques ayant façonné les *gender roles* dans les sociétés, la transmission de valeurs patriarcales et globalement le bien-être des femmes, nous retrouvons l'agriculture traditionnelle et l'adoption de nouvelles techniques agricoles - avec notamment l'utilisation de la charrue ou le développement du pastoralisme - (Alesina et al., 2013; Becker, 2019; Boserup, 2007; Hansen et al., 2015), la construction genrée du langage (Gay et al., 2013), les structures familiales (Bertocchi and Bozzano, 2015; Tur-Prats, 2019; Van der Vleuten, 2016), l'esclavage (Bertocchi and Dimico, 2019; Corno et al., 2020b), le système de filiation *via* la matrilinéarité (Gottlieb and Robinson, 2016; La Ferrara and Milazzo, 2017; Loper, 2019; Lowes, 2018), les pratiques de dot et de rétribution monétaire de la fiancée (Ashraf et al., 2020; Corno et al., 2020a) ou encore la religion (Becker and Woessmann, 2008; Cagé and Rueda, 2020; Nunn et al., 2014). Le premier chapitre de cette thèse qui porte sur les effets de long-terme des missionnaires chrétiens au Togo et au Bénin apporte une contribution générale à cette littérature et tout particulièrement aux deux derniers développements cités ainsi que sur le rôle des institutions sur le développement.

L'expansion religieuse des chrétiens au XIX^e siècle est un cas unique de déploiement organisé et planifié d'institutions religieuses sur plusieurs continents. Cette expansion questionne les effets de l'installation auprès de la population des missionnaires religieux, en apportant les pratiques sociales relatives au culte et parfois des services publics comme des hôpitaux ou des écoles. C'est d'ailleurs pourquoi, de nombreuses études portent sur les effets de long-terme de la présence des missionnaires sur le capital humain dont l'éducation (Calvi et al., 2019; Meier zu Selhausen, 2014; Nunn et al., 2014; Valencia Caicedo, 2018). Par exemple, Wantchekon et al. (2014) montre au Bénin une transmission intergénérationnelle et locale de l'effet positif des

[5] La revue de littérature par Giuliano (2017) offre une lecture exhaustive de l'ensemble de la littérature autour des facteurs historiques enracinant les inégalités de genre.

premières écoles missionnaires sur les niveaux scolaires. En revanche, peu d'études interrogent les liens croisés entre l'établissement des missionnaires et un possible changement des normes maritales lié à leurs activités. En Afrique Sub-Saharienne, Fenske (2015) montre que la polygamie décroit dans les zones avec des forts investissements en éducation des missions religieuses et institutions coloniales. Au Malawi, Kudo (2017) montre que la proximité à la première mission pionnière (Livingstonia) décroit la probabilité de se marier précocement et des mariages polygames.

Dans le Chapitre 2, nous mettons en évidence les liens étroits entre âge au mariage des femmes et proximité aux missions religieuses historiques, en montrant que les investissements scolaires pionniers des missionnaires conjugués aux pratiques matrimoniales favorisent l'éducation des jeunes filles dont la dot augmente et *in fine* retarde le moment du mariage. Le mariage juvénile demeure un vrai fléau, considéré comme une violation des droits humains et touche des millions de femmes à travers le monde. De nombreux travaux l'exposent en montrant empiriquement une causalité de l'âge au mariage sur le bien-être et l'autonomisation des femmes (voir la revue de littérature de Parsons et al., 2015). Comme illustré par la Figure 1.4, le mariage précoce est une pratique courante et très répandue dans de nombreux pays en développement, particulièrement en Asie du Sud et en Afrique Sub-Saharienne. En 2014, on dénombrait plus de 700 millions de femmes mariées avant l'âge de 18 ans (UNICEF, 2014).[6]

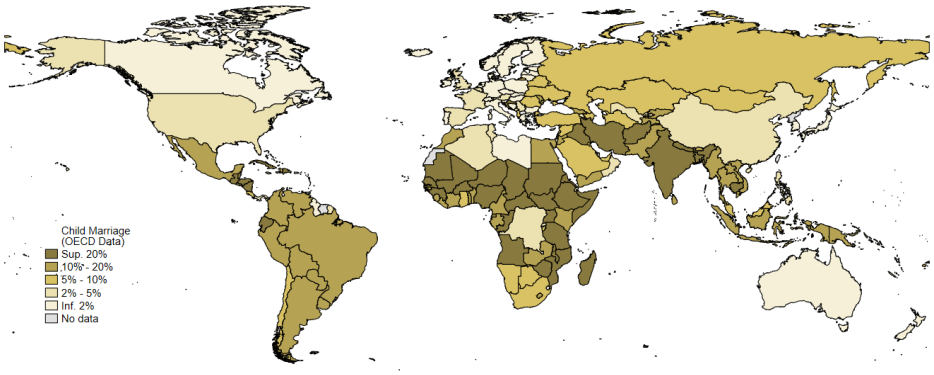


Figure 1.4 – Prévalence des mariages précoces à travers le monde (UN, 2017)
Note: Carte construite par l'auteur selon les données de *Gender, Insitutions and Development Database* de l'OCDE (2019) et de l'*UN World Marriage Data* (2017) sur la prévalence des mariages précoces, soit le pourcentage de filles âgées de 15 à 19 ans et déjà mariées ou en union informelle.

Établir les relations de long-terme relatives au mariage juvénile permet de com-

[6]Dans des contextes de pays en développement où les relations sexuelles pré-mariages sont honnies, le mariage est une institution qui, néanmoins, permet de protéger les enfants (notamment les garçons) qui naissent d'une union précoce (Guilbert and Marazyan, 2018).

prendre les tenants culturels et les motivations sous-jacentes autour du maintien de cette pratique. Basé sur des données historiques récoltées par l'auteur, ce travail retrace la présence historiques des premiers missionnaires chrétiens (catholiques et protestants) au Bénin et au Togo.[7] En utilisant les données contemporaines des *Demographic and Health Surveys* (DHS) pour le Bénin et le Togo, nous montrons dans ce chapitre que la proximité géographique aux missions historiques accroît l'âge au mariage des jeunes femmes, et ce uniquement lorsque des infrastructures scolaires accueillant les jeunes filles étaient contiguës aux missions. Au préalable, nous nous sommes assurés que ce phénomène n'a aucun lien avec la conversion religieuse, en montrant qu'il n'y a pas plus de femmes chrétiennes là où sont situées les missions historiques. L'effet de long-terme de la conversion religieuse évacué, l'effet des missionnaires pionniers se lit ainsi au travers de leurs investissement en bien public comme l'offre scolaire. En ce sens, nous montrons que plus les jeunes femmes habitent à proximité des lieux où furent établies les missions religieuses avec école, plus elles restent longtemps à l'école. L'effet de ces missions historiques est donc double : elles passent plus de temps à l'école et sont mariées plus tard

En recherchant les causes structurelles de ces deux rallongements conjoints, nous écartons deux hypothèses : celle d'un retard lié au marché du travail et celle d'un effet pur du rallongement des études.[8] Le mécanisme que nous plébiscitons dans ce travail vient directement d'un effet de l'école, en elle-même, et de son interaction avec les coutumes maritales dans le contexte béninois et togolais. Par coutume maritale, nous entendons ici les hétérogénéités dans la population en matière de *marriage payments*, *i.e.* la dot qui est une pratique traditionnelle équivalant à rémunérer la famille de la mariée par le prétendant pour obtenir la main de sa fiancée. Nous nous appuyons sur un mécanisme explicité théoriquement et empiriquement par Ashraf et al. (2020) qui montrent que l'éducation a un effet positif sur le prix fixé de la dot par la belle-famille. En outre, Corno et al. (2020a) montrent aussi que lors des chocs de revenus du ménage, les filles les moins éduquées se marient plus tôt car il est plus

[7] La plupart des travaux publiés jusqu'alors utilisent les Atlas de Beach (1903) et de Roome (1925) répertoriant la localisation des missions chrétiennes pourtant considérés comme incomplets (Jedwab et al., 2018). La précision des données collectées dans ce chapitre permet de se soustraire aux Atlas en présentant des données originales, utilisant à la fois la localisation des missionnaires mais aussi la composition des missions ou encore les infrastructures afférentes (principalement écoles et dispensaires).

[8] La première s'apparente au délai causé par une entrée tardive sur le marché du travail, une femme ayant une meilleure formation éducative pourrait prétendre à une meilleure insertion sur ce marché et donc rentrer plus tard sur le marché matrimonial. Or, nous n'observons aucun effet sur la participation au marché du travail ou les revenus liés au travail. La seconde est relative à l'augmentation brute et simple du temps passé à l'école qui retarde *de facto* la possibilité de se marier pendant les études. Nous n'observons pas non plus d'impact de la proximité aux missions religieuses sur la probabilité d'achever le secondaire ou les études supérieures, période traditionnellement sujette à une entrée sur le marché matrimonial du fait des premières menstruations (Field and Ambrus, 2008).

facile d'accélérer leur insertion sur le marché matrimonial et donc d'obtenir vite une rente liée au mariage.

Dans notre papier, l'idée tient qu'en raison des hétérogénéités sur la pratique de la dot, les effets des missionnaires sur l'éducation des jeunes filles sont divers et en conséquence l'augmentation de l'âge au mariage aussi. Premièrement, nous montrons que les investissements historiques des missionnaires en éducation sont directement corrélés avec les niveaux d'engagement contemporains des filles à l'école. Comme l'augmentation du temps passé à l'école provoque la hausse de la valeur de la dot, les parents dont c'est la coutume ont une incitation à éduquer leurs filles ainsi qu'à attendre le prétendant qui pourra payer au meilleur prix la dot et donc retarder l'entrée sur le *marriage market*.
En utilisant les informations relatives aux pratiques maritales des différents groupes ethniques présents au Bénin et au Togo (Murdock et al., 1967), et recensés dans notre échantillon, nous montrons que notre effet est uniquement tiré par les individus dont les pratiques sociales intègrent la dot.

Notre contribution à la littérature est double. D'une part, ce chapitre s'inscrit dans la lignée des travaux sur les facteurs structurant et historiques des institutions, ici particulièrement les missions religieuses, ayant effet sur les normes sociales relatives au mariage et à la famille. D'autre part, ce travail, en reposant sur les soubassements théoriques de Ashraf et al. (2020), vient montrer que l'hétérogénéité des pratiques matrimoniales traditionnelles instaure des réponses distinctes aux investissements éducatifs, corrélés avec les investissements pionniers des missionnaires religieux. Cette contribution s'appuie sur une nécessité d'appréhender les mécanismes relatifs à la persistance des mariages juvéniles, mariages qui entrainent les femmes assujetties dans des situations de dégradation de leur bien-être et de leurs conditions de vie (Parsons et al., 2015).

1.4 Émancipation au sein du ménage, prises de décision et stéréotypes de genre

Si interroger l'enracinement des normes maritales s'inscrit dans la représentation des facteurs structurels au maintien des normes sociales, cette question participe aussi à l'établissement d'une réflexion autour des moyens pour résorber les inégalités hommes-femmes. En effet, il n'en demeure pas moins que ces normes ne sont pas inamovibles et puissent être affectées par divers composantes. Ces moyens interagissent nécessairement entre eux à l'instar des politiques publiques, des conditions de marché et d'environnement contemporains, de la médiatisation de *role models* ou de l'avancée des idées et des concepts s'élevant contre le patriarcat dans les sociétés.

L'émancipation des femmes dans notre texte s'apparente à la traduction imparfaite française du terme d'*empowerment* et c'est à celui-ci qu'il faut ici se référer. En anglais, *empowerment* s'appuie sur une double dimension : le pouvoir et l'apprentissage pour y accéder, cette double lecture résultant d'un sens alors autant processus que résultat du processus (Bacqué and Biewener, 2015). Clarifier ce cadre sémantique permet de nous placer dans le concept à la Kabeer (1999) de l'*empowerment*, *i.e.* l'essor de capacités individuelles à faire des choix stratégiques ou à contrôler ses ressources dans un contexte pour lequel ces capacités étaient auparavant annihilées. En d'autres termes, l'émancipation se matérialise ici par la liberté individuelle, d'agir et de décider.

Un des aspects essentiels de la dimension d'émancipation dans ce cadre se réfère au canevas de l'intra-ménage, autrement dit à la place de la femme dans son ménage. Identifier cette place se rapporte donc à quantifier une notion du pouvoir, difficilement saisissable et multidimensionnelle par essence. Le concept qui a émergé à la suite des travaux théoriques de Chiappori (1988, 1992) sur les modèles de ménage collectif est celui du *bargaining power*, autrement dit le pouvoir de négociation dans le ménage entre les deux partenaires. Empiriquement, le monde de la recherche se heurte aux difficultés de la mesure de cette émancipation (Richardson, 2018). Nous allons retrouver des mesures "indirectes" pouvant servir comme indicateur du *bargaining power*, par exemple la part de la consommation de la femme dans le ménage (voir *e.g.* Browning et al., 2013; Calvi, 2020), les biens possédés ou apportés lors du mariage (voir *e.g.* Quisumbing and De La Brière, 2000; Thomas et al., 2002), le *marriage payment* (Hotte and Lambert, 2020). D'autres approches se fondent sur des mesures relatives à la prise de décision directement dans le ménage, la plupart du temps, face au mari pour savoir qui a le dernier mot (*final say*) sur des dimensions fondamentales, à l'instar des dépenses importantes du ménage, la santé ou la socialisation des femmes elles-mêmes (voir *e.g.* Allendorf, 2007; La Mattina, 2017; Lépine and Strobl, 2013). C'est notamment cette dernière approche qui est plébiscitée dans cette thèse.

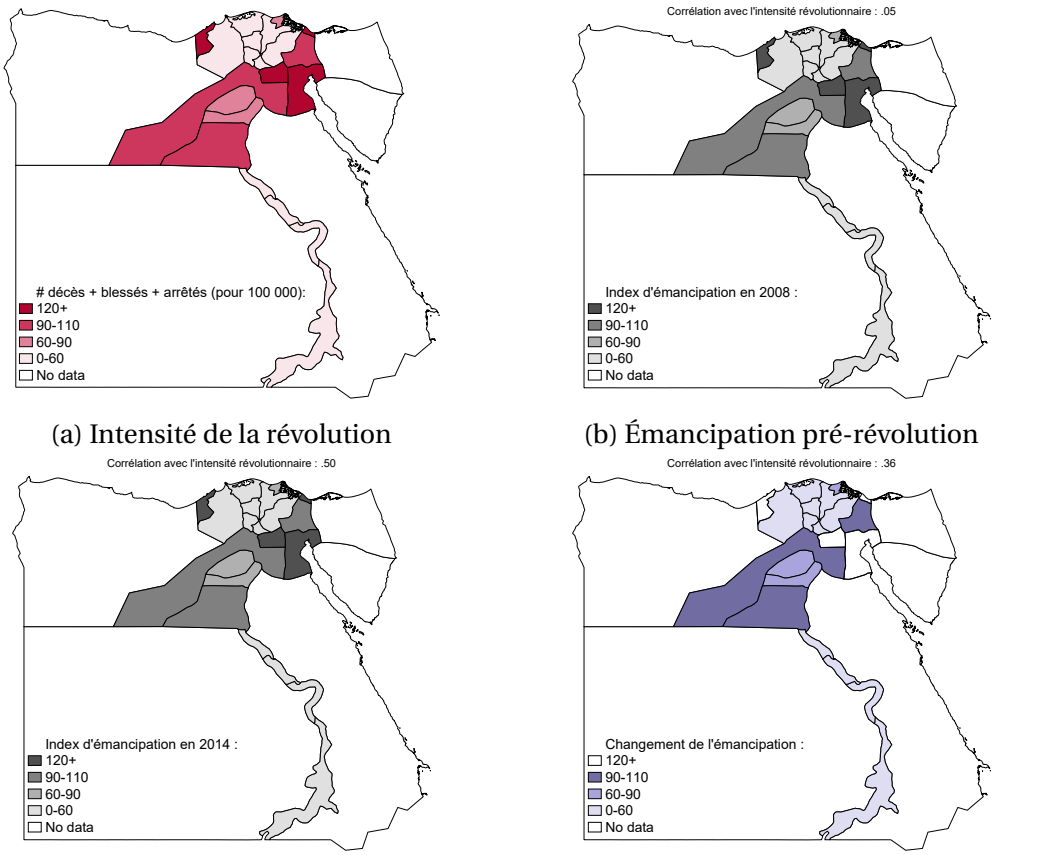
Sous les pavés, l'émancipation : les femmes égyptiennes et le printemps arabe

Dès le départ du soulèvement du Printemps Arabe, les femmes se sont soulevées, marchant dans la rue avec les hommes et se mobilisant sur Internet contre le régime de Moubarak (Shalaby, 2016). En 2013, elles firent partie intégrante de la seconde vague massive de mobilisation contre le régime porté par les Frères Musulmans. Pour une société fondée sur une assise patriarcale, compter des femmes parmi les révolutionnaires devint le point de départ d'une remise en cause des stéréotypes traditionnels de genre. En exploitant l'hétérogénéité géographique dans l'intensité des manifestations et soulèvements, nous montrons dans le Chapitre 3 que l'exposition

et la participation des femmes aux évènements révolutionnaires entre 2011 et 2013 a redéfini leur statut dans le ménage. Dans les régions fortement touchées par les évènements, nous trouvons une augmentation de 12 à 19% dans la prise de décision des femmes. Nous notons aussi une diminution notable de l'acceptation des violences domestiques et une réduction de l'intention d'exciser leurs filles, marqueurs de leur intégrité et de leur émancipation.

Toutes les régions d'Égypte ne se sont pas soulevées avec la même force. Recourant à l'*Egyptian Revolution Database*, nous mesurons une proxy de l'intensité des manifestations par gouvernorat sur la période de 2011 à 2013, en compilant le nombre total de personnes arrêtées, blessées ou tuées lors d'évènements révolutionnaires par rapport à la démographie (Figure 1.5a). Nous lions cette information sur la géographie des manifestations avec l'évolution de l'émancipation des femmes égyptiennes au cours de la période. En utilisant les données des *Egyptian Demographic and Health Surveys* (EDHS), nous établissons cette mesure d'émancipation intra-ménage en combinant les variables relatives à la prise de décision sur leur santé, leur droit à rendre visite à des proches, et sur leur choix concernant les principaux achats du ménage.
La Figure 1.5b montre les niveaux d'émancipation moyen par gouvernorat en 2008. En comparant avec l'intensité des évènements révolutionnaires, nous pouvons voir que les deux éléments ne sont assurément pas corrélés. La Figure 1.5c met en évidence les niveaux d'émancipation après les évènements en 2014. La Figure 1.5d reporte l'évolution de cet indicateur entre 2008 et 2014, pour laquelle nous retrouvons une forte corrélation avec la distribution géographique de l'intensité des manifestations. Étant donné l'absence de corrélation pré-révolution, nous pouvons affirmer que l'augmentation de l'émancipation en 2014 n'est pas liée aux différences intrinsèques de *bargaining power* entre les régions d'Égypte mais pourrait en revanche résulter d'une relation causale avec l'intensité révolutionnaire.

En utilisant une méthode de différence en différence, nous définissons deux groupes de femmes, considérées comme traitées ou non selon leur localisation. Le traitement s'applique pour les femmes situées dans les gouvernorats hautement exposés, définis comme étant au-dessus de l'intensité médiane de la révolution. En comparant deux groupes de femmes en 2008 et en 2014, nous trouvons que l'émancipation intra-ménage dans les gouvernorats hautement exposés s'est accrue de 12 à 19%, relativement aux gouvernorats les moins exposés.
En utilisant le jeu de données de l'EDHS disponible pour 2000, nous nous assurons que les dynamiques pré-révolution (entre 2000 et 2008) sont similaires entre les deux groupes de traitement et de contrôle, validant l'hypothèse de tendances parallèles. Par ailleurs, nos résultats se maintiennent en changeant notre estimation de l'intensité des manifestations, en utilisant le taux par gouvernorat des femmes qui participent aux soulèvements (issu du *Survey of Young People in Egypt*). Nos résultats sont aussi



(a) Intensité de la révolution

(b) Émancipation pré-révolution

(c) Émancipation post-révolution

(d) Évolution des niveaux d'émancipation

Figure 1.5 – Indicateur d'émancipation et intensité de la révolution égyptienne

Note: Calculs des auteurs en utilisant les données EDHS 2008 et 2014 et les données de l'Egyptian Revolution Database issues de Wiki Thrawra qui recense les morts, blessés et arrêtés de la révolution égyptienne (2011-2014).

confirmés lorsqu'on utilise la variation d'intensité des évènements à une échelle désagrégée (niveau municipal).

Nos résultats portent l'idée que la visibilité accrue des femmes auprès des hommes dans les manifestations et évènements politiques peut avoir modifié la représentation de leurs rôles et droits au sein des ménages. Ils s'inscrivent dans la lignée des travaux récents sur les effets des normes importées sur les décisions intra-ménages (Jensen and Oster, 2009; La Ferrara et al., 2012). En outre, ils vont de conserve avec la littérature sur la représentation politique des femmes, qui montre qu'une participation politique accrue de celles-ci affaiblit les stéréotypes de genre (Beaman et al., 2009). Toutefois, nous ne pouvons conclure sur la persistance de cet effet, les développements récents de la représentation politique des femmes en Égypte étant plus que fragiles. Nos résultats - bien qu'incertains à moyen et long terme - portent le message enthousiaste et positif que la situation des femmes, leur

propre perception de leur rôle et de leur statut dans le ménage ou la société, ne sont pas immuables, en aucun contexte.

Intra-ménage et stéréotypes de genre, la question du confinement

L'émancipation peut aussi se lire à l'aune d'une approche plus structurelle des rapports de genre, ancrée dans un mimétisme sociétal et une tradition culturelle qui génère des frustrations ou des aspirations dans lesquelles les acteurs du ménage s'insèrent sans en dévier : les stéréotypes. S'affranchir des stéréotypes de genre, c'est une forme d'émancipation nécessairement complémentaire au *bargaining power* de l'intra-ménage. Il y a les stéréotypes de l'ordre des idées, des valeurs, une certaine idée de la place de la femme dans la société et il y a les stéréotypes relatifs aux structures observées, dans cette thèse : la gestion du temps de travail domestique. Dans ce domaine, les femmes continuent d'assurer la plupart de cette charge au sein du ménage, bien qu'elles ont accru dans le même temps leur participation au marché du travail (voir une revue détaillée *in* Lachance-Grzela and Bouchard, 2010).

Les politiques publiques dîtes de confinement, partout où elles ont été mises en œuvre si tôt la pandémie mondiale de Covid-19 hors de contrôle, ont affecté les relations à l'intérieur du ménage, entre les couples. Le confinement du printemps 2020, de par sa nature et sa temporalité relativement imprévisible et soudaine, a projeté de nombreux couples dans une situation délicate, jonglant entre travail, enfants et partenaire, et entraînant potentiellement bon nombre de tensions autour de la gestion de la vie quotidienne (voir *e.g.* Biroli et al., 2020).[9] Le confinement a ainsi mobilisé les partenaires dans leurs rapports de production domestique, autrement dit : les tâches ménagères, dont la quantité a mécaniquement augmenté avec le temps passé au domicile, et les activités liées aux enfants, dans un contexte particulier de fermeture des écoles et des lieux d'accueil périscolaires (voir *e.g.* Del Boca et al., 2020). Par ailleurs, en France à l'issue du premier confinement, 11% des couples ont déclaré vouloir prendre leur distance (sondage IFOP, mai 2020) et on relève dans de nombreux pays une augmentation des divorces sur la période. Tous les éléments concordent pour souligner que le couple, et celles et ceux qui le composent, furent mis à l'épreuve, à la fois sur son fonctionnement et sur les stéréotypes de genre qui le structurent.

Le Chapitre 4 expose les résultats de nos travaux sur la gestion des tâches et d'occurrence des conflits au sein du couple lors du premier confinement du print-

[9] De nombreuses études suggèrent aussi que le confinement fut un catalyseur de la violence intra-ménage, et particulièrement celle des violences conjugales (voir *e.g.* Arenas-Arroyo et al., 2020; Beland et al., 2020). D'autres auteurs montrent une activité accrue des centres d'appels de signalements de violence conjugale, dans les pays développés (voir *e.g.* Miller et al., 2020) comme dans les pays en développement (voir *e.g.* Agüero, 2021).

emps 2020. Les données utilisées proviennent d'une enquête en ligne réalisée en coordination avec plusieurs universités européennes, qui a eu lieu du 21 Avril au 11 Mai 2020 pour la France.[10] Nous avons recueillis des informations individuelles sur près de 4 616 individus dont 2 844 femmes se déclarant vivre en couple avec un homme. C'est sur ce dernier échantillon que nous regardons les effets du confinement sur la répartition des tâches domestiques entre les partenaires et l'occurrence des conflits intra-ménages. Nous avons aussi collectés des informations précises quant à la localisation du ménage, les niveaux scolaires ou l'activité professionnelle avant et durant le confinement.[11]

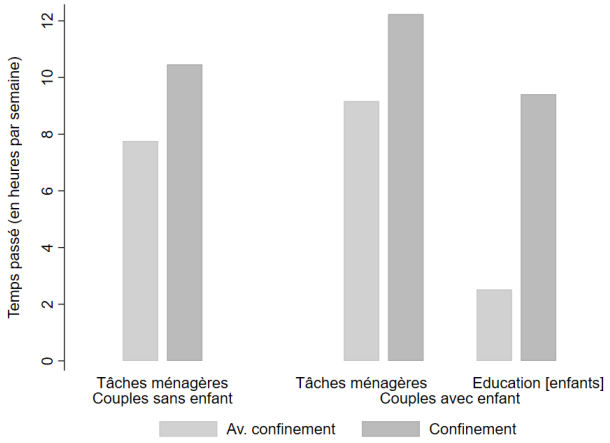


Figure 1.6 – Temps passé aux activités domestiques (tâches ménagères et activités autour des enfants)

Note: Calculs des auteurs sur les données issues de l'enquête en ligne EICM du 21 Avril au 11 mai 2020 auprès de 2844 femmes en couple.

Premièrement, nous notons une augmentation notable de 34% du nombre d'heures consacrées aux activités ménagères (nettoyage, cuisine, blanchisserie) par les femmes, passant en moyenne de 8h20 à 11h15 par semaine. Pour ce qui est du temps consacré aux enfants, celui-ci a quasi quadruplé passant de 2h30 à 9h30 par

[10] Nous sommes à l'initiative de cette enquête pour l'Hexagone, diffusée en ligne à travers nos réseaux professionnels et personnels, ainsi qu'autour d'une stratégie de diffusion massive aux écoles primaires et à travers une publicité sur les réseaux sociaux Facebook et Twitter.

[11] Étant donné le phénomène particulier du confinement et la rapidité d'exécution nécessaire pour mobiliser un échantillon conséquent sur la période, aucune procédure d'échantillonnage fut questionnée en amont sur cette enquête. Pour autant, notre échantillon est relativement bien équilibré géographiquement en France (seule l'Île-de-France est sous-représentée et l'AURA sur-représentée). Nous observons néanmoins une sous-représentation des femmes les moins éduquées dans notre échantillon, pouvant être le fait d'un intérêt particulier des plus éduquées aux questions de gestion du temps domestique ou d'une présence prédominante sur nos réseaux de diffusion. Pour contrecarrer les biais de sélection liés à l'absence d'échantillonnage et au design de l'enquête, tous nos résultats sont pondérés en raison du niveau d'éducation. Il est nécessaire de préciser que nos résultats sont similaires en absence de pondération des estimations.

semaine. On relève une forte hétérogénéité entre les couples avec et sans enfant pour ce qui est du volume total d'heures, arguant d'une charge plus importante pour les femmes qui sont mères dans notre échantillon (Figure 1.6). Parallèlement, la part des tâches domestiques effectuée par les hommes n'a que très peu variée sur la période, les femmes assurant continuellement peu ou prou 70% du temps de travail domestique. Seuls les ménages avec enfants dans lesquels les deux partenaires étaient confinés ou lorsque la femme seulement continuait à travailler en dehors du ménage ont connu une redivision des tâches sur la période. Cette redistribution effective est notamment tirée par deux activités particulières : jouer avec les enfants et faire les courses. Il est intéressant de relever que ces deux activités, essentielles à la vie du ménage, sont deux activités peu genrées et se transforment même en quasi-loisirs durant ce confinement, considéré comme strict où les sorties sont rares et circonscrites à un rayon d'un kilomètre du domicile. Ainsi, si dans certains ménages, les hommes accroissent leur investissement dans les tâches domestiques, cela se fait en raison de leurs préférences et de l'utilité qu'ils s'en recouvrent. Le confinement n'a pas permis de redistribuer de manière structurelle les tâches entre les partenaires, et ce, malgré l'augmentation significative du volume du travail domestique.

Nous montrons aussi dans notre étude que cette situation d'inégalité de répartition de la charge de travail domestique est une source directe d'augmentation des conflits entre les partenaires durant le confinement. Pour les couples sans enfant, c'est le cas lorsque les femmes restent confinées à la maison avec un déséquilibre extrême en leur défaveur dans la répartition des tâches domestiques. Pour les couples avec enfant, peu importe les situations de confinement, nous remarquons que tous les cas de figure sont sujets à une relation significative entre partage des tâches et occurrence des conflits.[12] Tout particulièrement dans les cas où l'homme reste confiné à la maison, un léger déséquilibre débouche sur une augmentation des conflits durant le confinement. En regardant la décomposition des tâches, nous montrons que ce sont les forts déséquilibres de partage du travail sur le nettoyage de la maison, tâche la plus chronophage et genrée, qui sont des vecteurs de conflits et de disputes. Cette démultiplication des conflits illustre la nécessité pour les couples, et surtout pour les femmes, de redéfinir un équilibre juste et équitable de la production domestique entre les partenaires. Si le confinement a échoué à redéfinir les rôles au sein des ménages, c'est une illustration de l'ancrage des stéréotypes de genre définissant nos rapports de couple.

En plus de répondre aux besoins d'appréhender les effets et les mécanismes à l'œuvre en défaveur des femmes durant le confinement, ce travail s'inscrit dans

[12] En raison, nous avons divisé le confinement en quatre situations distinctes : celle où les deux partenaires sont confinés à domicile, celles où un des deux travaille à l'extérieur, et celle pour laquelle les deux partenaires ne sont pas confinés et travaillent à l'extérieur.

la droite lignée des travaux sur l'évolution de la distribution des tâches au sein du couple (voir *e.g.* Leopold et al., 2018) et la ténacité des stéréotypes guidant ce partage (Couprie et al., 2020; Stratton, 2012). Nous contribuons par ailleurs aux travaux sur les relations entre partage du temps domestique et tensions au sein du ménage (voir *e.g.* Ruppanner et al., 2018; Van der Lippe et al., 2014).

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Chapter 2

Marriage Norms and Missionary Activities: Evidence from Togo and Benin

This chapter is currently under the status 'Revise and Resubmit' in *Economic Development and Cultural Change*.

2.1 Introduction

Child marriage still remains prevalent in many developing countries, especially in sub-Saharan Africa, where 38% of young women are first married or in union before age 18.[1] Although the early marriage has continued to decline worldwide over the last decade,[2] this decline has been narrower in this region of Africa (United Nations Children's Fund, 2018). Prevalent in many traditional settings (Field and Ambrus, 2008), early marriage remains a crucial matter for many women, as it can be devastating to their welfare and living conditions. Many studies show a causal effect of marriage age on women's economic empowerment (Yount et al., 2018), educational attainment (Field and Ambrus, 2008; Nguyen and Wodon, 2014), and even on her children's well-being (Chari et al., 2017) and educational performance (Sekhri and Debnath, 2014). Despite the globally high level of child marriage prevalence in this area, we note large heterogeneities between countries, ranging from 7% in Namibia and 76% in Niger. Even when we focus on homogeneous areas, we find many differences. Illustrative cases are Togo (22%) and Benin (26%) compared with Western African countries (41%

[1] These data are from a compiled survey by UNICEF, based on Demographic and Health Surveys (DHS), Multiple Indicator Cluster Surveys (MICS) and other nationally representative surveys.

[2] According to the UNICEF report, there has been a 25% decrease in child marriage of women during the last ten years.

of early marriage of women aged 20 to 24 in 2018). These countries are also the least impacted by the child marriages in the former colonial AOF area,[3] where 46% of young women are married in their childhood in 2018.

In the missionary expansion started in the 19^{th} century, Benin was the first area religiously administrated by the French catholic missionaries from the *Société des Missions Africaines* (SMA) since the establishment of a mission at Ouidah in 1861. These missionaries used their presence in Benin as a springboard for their action, providing many members and founding many religious schools and notably girls' schools (Boucher, 1926).[4] After the partition of the Togoland, French Togo was also religiously administrated in the same vein by the SMA since 1922 (Gayibor et al., 1997).[5] Togolese and Beninese missions are notably considered as a showcase for the religious expansion of French Catholic missionaries (Boucher, 1926).

In this paper, we exploit the influence of missionary activities in both countries to investigate the persistent effect of missions on women's age at first marriage. Using a newly collected dataset on mission locations and schooling investments in the first half of the twentieth century, we find that the proximity of historical missions has a significant and positive impact on the marriage age of young women at the individual level. Interestingly, these results are fully driven by the historical presence of girls' schools adjacent to missions rather than the spread of the religion. More precisely, we show that the legacy from historical missions is linked to the missionary investments in the public good such as education supply. Based on Ashraf et al. (2020)'s and Corno et al. (2017)'s papers, we exploit historical heterogeneity in bride price practices showing that the traditional norms of marriage payments have determined household responses to past and present investments in daughters' education and consequently the age of entry onto the marriage market.

This paper belongs to literature on the economic effect of missionary activities which has recently grown through several studies documenting deep-rooted determinants of development. In the past two decades, an abundant body of literature about paths of development has emerged under the influence of forerunner papers and scholars such as Acemoglu et al. (2001) and summarized in both Nunn (2009) and Spolaore and Wacziarg (2013). This literature rests upon seminal papers that investi-

[3]The French colonial system was denominated *Afrique Occidentale Française* (AOF) and included the following present-day countries: Burkina Faso, Benin, Côte d'Ivoire, Guinea, Mali, Mauritania, Niger, Senegal and Togo.

[4]Protestants in Benin were established since the second half of the 19^{th} century with the Wesleyan Methodist Missionary society but remained less developed. Compared to Benin, most of the other parts of the AOF were under the religious administration of the Catholics *Pères Blancs*.

[5]German Catholic churches previously administrated this area, notably with the *Societas Verbi Divini* (SVD) from the end of the 19^{th} century. Due to the partition, Protestant missions were stopped during a decade from 1918 to 1929 and remained afterward isolated (Gayibor et al., 1997; Jean, 1943).

gate the historical persistence of past events such as slavery on present-day economic development (Nunn, 2008) or mistrust (Nunn and Wantchekon, 2011), colonization on institutions (Acemoglu et al., 2005), infrastructure investments (Huillery, 2009; Jedwab and Moradi, 2016), education (Wantchekon et al., 2014; Wietzke, 2015), agricultural practices on gender roles and norms (Alesina et al., 2011, 2013) and pre-colonial institutions on contemporary development (Gennaioli and Rainer, 2007; Michalopoulos and Papaioannou, 2013).

Our paper relates to a flourishing empirical literature on the historical persistence of the influence of religious institutions on economic development (Barro and McCleary, 2003; McCleary and Barro, 2006), particularly of Protestantism based on the Weberian approach (Becker and Woessmann, 2009, 2010; Boppart et al., 2014; Cantoni, 2015). Following the legacy of Max Weber's approach (1905), Becker and Woessmann (2009, 2010) notably find that the Protestant Reformation led to economic growth by a supply of education.[6]

The religious expansion of Christianity in the late nineteenth century offers an excellent setting to estimate the long-term effects of missionary activities on modern outcomes, particularly in sub-Saharan Africa, where 26% of Christians worldwide are currently concentrated and where they are expected to be made up 42% of the population in 2060 (Pew Research Center, 2017). Woodberry (2004) and Woodberry and Shah (2004) first document a positive effect of Protestant missionaries in fostering and diffusing democracy. In Africa, Nunn (2010) finds that religious conversion is a phenomenon that has deeply affected ethnic groups that were more widely exposed to missionary activities than others. In a recent paper, Cagé and Rueda (2016) show that the proximity to the historical printing presses of Protestant missionaries is associated with the current level of social capital, such as newspaper readership or political participation.

Most of the pursued research on historical persistence surrounding religious missions affirms causal evidence on human capital transmission. Focusing on Catholic missions, Valencia Caicedo (2018) shows that educational attainment remains higher

[6]Weber (1905) suggested that the Protestant Reformation led to economic growth due to the "Protestant ethic". However, Becker and Woessmann (2009, 2010) show that the major driving force was education supply. In the set of principles of the Protestant Reformation, the first comes from the *Sola Scriptura*, meaning that the reading of the Gospel is the unique way to understand the Word of God. Inspired by Luther's quote: "A simple layman armed with Scripture is to be believed above a pope or a council without it", Protestantism has consequently spread mass education and the ideal of universal literacy within their influence areas. Boppart et al. (2014) also find that at the district level Protestants developed a higher level of reading skills than Catholics in Switzerland during the second half of the nineteenth century. While Cantoni (2015) finds no evidence of an effect of Protestantism on economic growth in an urban setting during the pre-industrial age, he does not refute Becker and Woessmann's findings of the importance of Protestantism in the second industrial revolution, especially in the countryside. Linked to literacy, Rubin (2014) finds a strong correlation between the diffusion of the printing press throughout European cities and the Reformation in the sixteenth century.

in municipalities and areas exposed to Jesuit historical missions in Argentina, Brazil and Paraguay. Waldinger (2017) finds that missionaries positively affected long-run development, leading to higher present-day literacy rates and schooling achievements in areas in Mexico influenced by a Catholic presence. In India, Castelló-Climent et al. (2017) use the location of Catholic missionaries to instrument at the local level the effect of post-secondary education on contemporary prosperity. Conversely, recent papers document no causal evidence from historical Catholic missions on human capital transmission (Calvi et al., 2019), or only an effect on men's human capital (Nunn et al., 2014). Protestant missionary activities have been more widely studied, surely because of the particular connection between Protestantism and economic development. Gallego and Woodberry (2010) show a stronger correlation between education and Protestant areas than Catholic areas. Nunn et al. (2014) find that both Catholic and Protestant missionaries have a persistent historical effect on males education, while women's education benefited only from historical Protestant missions. In Uganda, Meier zu Selhausen (2014) finds that missions raised the literacy skills of women exposed to Protestant activities. Outside Africa, Calvi et al. (2019) study the long-term effects of Protestant missions on human capital in India. They show that districts exposed to Protestant missions are associated with higher literacy rates and establish causal evidence between the historical presence of women missionaries and present-day gender equality in education.[7]

Close to our work are two notable studies related to the persistent effect of missionary activities in our areas of interest. Using their own collected dataset on students from the first religious schools in Benin, Wantchekon et al. (2014) find a positive effect of education supply on human capital transmission at the individual level (from the first exposed individuals to their direct and extended descendants) and at the local level (externalities affecting untreated descendants in the treated villages). Cogneau and Moradi (2014) document the persistent effect of the partition of German Togoland after World War I, showing significant differences in the schooling performances across the border. Historically divided between British (contemporary Ghana) and French areas (contemporary Togo), these territories followed divergent trajectories, as a consequence of policies implemented around missionary activities.

We directly contribute to the literature on long-run determinants of the family formation process. Few studies document the link between missionary expansion and changes in marital norms. Fenske (2015) shows that the decrease in the polygamous rates in sub-Saharan Africa is the consequence of the education supply of religious

[7] More broadly, other papers document the role of Protestant missionaries in human capital transmission, such as health behaviors. Using a new dataset on mission locations in Africa, Cage and Rueda (2019) document a long-term relationship between medical missions and HIV prevalence. Calvi and Mantovanelli (2018) find a persistent local effect from historical Protestant medical missions on health outcomes nowadays in India.

missions and colonial governments. In Malawi, Kudo (2017) finds that the proximity to Livingstonia's religious mission influences both early marriage and polygyny, arguing that both Christian values and missionary educational investment are vectors of these changes in marital practices. This paper retains a unique channel with the investment in local public goods by missionaries and shows an absence of linkages between religion and marital practices.

Finally, we also relate directly to the recent literature based on the role and effects of marriage payments. Ashraf et al. (2020) show that traditional bride price practices create an incentive for households to invest in their daughters' education, raising the bride price. Corno et al. (2017) document divergent effects of rainfall shocks on the timing of marriage due to the cultural tradition of bride price. We rely on these seminal models and papers, showing that our effect is driven by respondents praticing marriage payments.

Most of the studies on persistent historical effects of institutions on economic development over time acknowledge confounding factors as a potential driver of long-run effects. In particular, the decision of where to locate a mission was far from random but rather selected in wealthier, urban, safer places (Jedwab et al., 2019; Johnson, 1967; Nunn, 2010). For our case of study, the location of the missionary sites could target areas where traditional marital norms originally differed and prevail nowadays. In other words, a selection problem could be due to unobservables correlated both with the choice of mission location and current marital norms. As a result, we use several strategies to tackle potential bias from omitted variables. First, we select only individuals living within a 50 km buffer zone of each mission, showing that all our results are robust to this restriction. In a second approach, we use a method performed by Cagé and Rueda (2016), using nearest-neighbors matching in order to disentangle the exposure to a mission with a girls' school from the effect of proximity to a mission with similar endowments but without education supply. Despite their similar characteristics, we find that only missions equipped with a girls' school have an effect on the age at first marriage, also increasing the number of years spent in school. Our last strategy is to exploit insights from Altonji et al. (2005) and Oster (2019) to assess the bias from unobserved confounding factors. We document that unobservables are unlikely to drive our estimates.

The paper is structured as follows. Section 2.2 describes our multiple sources of data and our novel dataset of missionary locations as well as contemporary data, descriptive statistics and our empirical strategy. The estimates and robustness checks are presented in Section Section 2.3. We present mechanisms and channels in Section 2.4. Section 2.5 provides additional results. In Section 2.6, we conclude.

2.2 Data and empirical model

In this section, we introduce our data contribution with a novel georeferenced dataset of missionary activities in Togo and Benin up to the first half of the twentieth century. Secondly, we present our contemporary data providing some descriptive statistics. Lastly, we expose our econometric approach.

2.2.1 Mission data

Most of the economic papers related to the study of missionary activities use atlases for recording mission locations in Africa, such as the 1900 Atlas of Protestant Missions (Beach, 1903), the 1924 Ethnographic Survey of Africa (Roome, 1925), or the 1929 Atlas of the Catholic Church (Streit, 1929). Despite their frequent use in academic literature, these documents suffer from missing information, notably for most African countries (Jedwab et al., 2019), including Togo and Benin. In this paper, we use a new dataset related to the main religious missions, mainly collected from national archives of Benin and Senegal.

Combining many historical sources, we create a novel geocoded dataset for Catholic and Protestant missions operating in Benin and Togo up to 1944. First references are documents from religious sources including "*Le Répertoire des Missions Africaines*" (OPM, 2006), which could be seen as a directory of Catholic locations on the continent, the "*Biographie des confrères défunts*" (Société des Missions Africaines, 2018) which draws up an inventory of deceased missionaries, or the Minutes of the Wesleyan Methodist Conference, which contains information about the Protestant mission locations in the region. Other religious documents also come from ecclesiastical authors who created archives, documents and testimonies about a mission's establishment and development (Bonfils, 1999; Boucher, 1926; Dupuis, 1961, 1998; Fassinou et al., 1993). We link religious information to public documents related to the missionary activities as schooling supply.[8]

Finally, to capture missionary expansion and development, we retain two one-year datasets related to religious activities and mission locations. The first wave is

[8] A set of documents come from AOF records collected in Dakar. They were produced by the French colonial administration and government officials at different stages of French colonial expansion. Some of them were classified as security reports documenting unofficial censuses of missionary members. Others were a collection of regular elements from colonial archives such as activity reports that gathered information on the nationalities of missionaries, as well as on their influences on the territory or their situations compared to other missions. Many reports are not exhaustive and only some of them mention the provision of schooling and/or dispensaries. We complete information on schooling with archive reports from academic records and statistics, collecting data on religious school locations and sizes.

obtained compiling data for missions up to 1925 and the second one up to 1945.[9] To locate each mission, we recover the GPS coordinates of historical missions using Latlong.net, an online geographical tool, by matching their names to contemporary locations.[10] Illustrated in Figure 2.1, our collected dataset substantially improves mission location compared to Protestant and Catholic missions recorded from Altases used in the literature (see in the Appendix Figure 2.3). Figure 2.1a and Figure 2.1b represent mission locations in Benin and Togo in 1925 and 1945, respectively. We observe that most of the missions were firstly concentrated in the South, close to the coast. Missions betweens 1925 and 1945 were based in ever-known areas, not far from previously settled missions.

(a) in 1925 (b) in 1939 (Benin) and 1944 (Togo)

Figure 2.1 – Missions in Togo and Benin

[9]We notice many documents related to missionary activity in the early 1940s for Togo while not many for Benin (only one in 1939). For this reason, we define 1939 as our cutoff year for Benin and 1944 for Togo. We consider all these documents in a unique collection, using them as records for religious activities up to 1945.

[10]Some missions locations were not identified due to differences between colonial name designations and current names. As colonial name designations rested on phonetic spelling, we combine different sources of information at the administrative level or refer to mission maps to define a target area, then find a potential phonetical match with a current name to establish the correct location.

2.2.2 Contemporary data

We assembled all publicly-available Demographic and Health Survey (DHS) rounds conducted in the period 1988 to 2014 for Togo and 1996 to 2017 for Benin. Retained data from DHS are standardized, nationally representative, and provide geocoded information for most of the survey clusters. Furthermore in our sample, we only focus on the ever-married women aged from 15 to 49. The age at first union is directly taken from DHS data.

Many studies have noted that retrospective data on marriage age reporting could carry many sources of bias (Gage, 1995; Hertrich et al., 2014; Van De Walle, 1996). DHS data may suffer from a lack of quality around the date of events, age or age at first marriage (Pullum, 2006). Much of this lack is due to faulty memory due to the time lapse from a dated event and thus relates to oldest cohorts. Regarding our issue, time interval between marriage and the interview day is probably larger for these cohorts (Hertrich and Lardoux, 2009). Other mechanisms refer to educational attainment, notably reducing age recall bias in terms of size and frequency in the sample (Pison et al., 2006). In order to capture our potential source of bias, we add age, age squared and birth cohort fixed effects as well as education level, all from DHS data. Many other individual-specific variables are also taken from these data and include localization (urban or rural), household size and religion. We create birth cohorts dummies by 5-year intervals of year of birth, controlling for generational group characteristics, and include dummy variables for ethnic groups.

We directly use cluster latitude and longitude coordinates provided by the geocoded DHS dataset. These GPS-based coordinates allow us to find the nearest mission location and compute the geodetic distance between each cluster survey and a given mission.[11] Taking this value, we compute the natural logarithm to define our main variable of interest.

We also use the geographic location to capture the nearest distance to the ocean coast, controlling for the enclosing degree of the respondent. Other geographic covariates are computed using the mean in a 5-km radius around the location of the cluster. Population densities are taken from the Center for International Earth Science Information Network and are based on population registers in 2000. The elevation measure is directly taken from SRTM data and is constituted by the mean within the buffer around the location. Controlling for local economic activity, we rely on Night Lights data from the Defense Meteorological Satellite Program. We use data from the World Clim database created by Steve Fick and Robert Hijlans to compute the average of rainfall for wet and dry seasons from 1970 to 2000. Using the individual locations

[11] Distance data are computed using the Stata command *geonear*, which computes the shortest curves between two GPS coordinate points.

and Murdock (1959)'s database, we also control with dummies for the former ethnic group located in the respondent area.[12]

Finally we use a geodataset at the administrative level of degree 2 (called "*communes*") from public sources to compute our district fixed effects in the case of Togo. For Benin, we take from K. Houngbeji's website the geodataset at the administrative level of degree 3, providing a narrower division of the territory at a local level (called "*arrondissement*").

2.2.3 Descriptive statistics

The summary statistics related to variables contained in our main analysis are reported in the Table 2.1. First, the average and the median age at first marriage are respectively 18.58 and 18. Moreover, 54.5% of women from our sample were married before the age of 18 (the legal age in Togo and Benin) and 22.4% before the age of 15. Early marriages are current situations for many women in our sample. Polygyny is also a widespread phenomenon and 40.7% of the women in our sample are in a polygamous unions. Traditional religion is followed by 20.5% of our sample while 23.7% declare to be Muslim and 47% Christians. In our sample, approximately the half of the Christians believers are Catholic.

The average distance from the respondent's residence to the nearest mission, measured in geodetic distance, is 70.6 km for missions in 1925 and half of that when we extend the analysis at the 1945 cut-off with a mean of 32.1 km. The average distance to the nearest religious girls' school in 1945 is 72.24 km while the average distance to a mission without a girls' school is 37.4 km.

Most individuals in our sample live in urbanized areas (65.4%). The largest ethnic group are Adja, Ewe or related make up 20.5% of the sample and Fon or related make up 26.1%. There exists a high degree of heterogeneity in terms of population density among our respondents' locations, illustrated by a mean population of 867 people and a median of 114.

2.2.4 Empirical Model

The core of our empirical analysis is to test a potential persistent effect of historical missionary activities on the age at first marriage in Benin and Togo. As previously mentioned, we define two temporal cutoffs in our mission locations, respectively

[12]For robustness, we also include historical data from Huillery (2009), provided on her website, about Benin's population in 1925 and also including total taxpayers and total head taxes in 1939. This information is only available for Benin, which is referred to the dataset by its colonial AOF name the Dahomey.

Table 2.1 – Summary Statistics from DHS and geographical data

	N	Mean	St. Dev.	Median
Outcomes				
Age at first marriage	45482	18.588	4.282	18
Polygamous marriage (=1)	45482	0.407	0.491	0
Catholic respondent (=1)	45482	0.239	0.426	0
Christian respondent (=1)	45482	0.470	0.499	0
Married under 18 (=1)	49019	0.545	0.498	1
Married under 15 (=1)	49689	0.224	0.417	0
Years of schooling	45482	1.919	3.319	0
Distance to religious places				
Distance to mission in 1925 (km)	49689	70.606	86.655	32
Distance to mission in 1945 (km)	45482	32.096	31.021	21
Distance to girls' school in 1945 (km)	49689	72.242	86.925	31
Distance to no girls' school in 1945 (km)	49689	37.409	28.541	32
Distance to low size girls' school in 1945 (km)	49689	82.701	80.908	49
Distance to high size girls' school in 1945 (km)	49689	137.541	151.328	50
Covariates				
Distance to Ouidah (km)	45482	224.944	184.091	134
Urban (=1)	45482	0.654	0.476	1
Age	45482	31.394	8.195	30
Age at squared	45482	1052.764	538.544	900
Number of household's members	45482	7.459	4.634	6
Primary school completed (=1)	45482	0.198	0.399	0
Religion : Others (=1)	45482	0.087	0.282	0
Religion : Christian (=1)	45482	0.470	0.499	0
Religion : Muslim (=1)	45482	0.237	0.425	0
Religion : Traditional (=1)	45482	0.205	0.404	0
Ethnicity group : Adja, Ewe or related (=1)	45482	0.205	0.403	0
Ethnicity group : Akposso or related (=1)	45482	0.010	0.099	0
Ethnicity group : Ana, Ife or related (=1)	45482	0.007	0.085	0
Ethnicity group : Kabje, Tem or related (=1)	45482	0.089	0.284	0
Ethnicity group : Para, Gourra or related (=1)	45482	0.086	0.281	0
Ethnicity group : Bariba or related (=1)	45482	0.071	0.257	0
Ethnicity group : Dendi or related (=1)	45482	0.026	0.160	0
Ethnicity group : Fon or related (=1)	45482	0.261	0.439	0
Ethnicity group : Yoa or related (=1)	45482	0.029	0.167	0
Ethnicity group : Betamaribe or related (=1)	45482	0.047	0.212	0
Ethnicity group : Peulh or related (=1)	45482	0.045	0.208	0
Ethnicity group : Others or related (=1)	45482	0.052	0.223	0
Ethnicity group : Yoruba or related (=1)	45482	0.071	0.257	0
Latitude	45482	8.137	1.743	7
Longitude	45482	1.829	0.767	2
Population in 2000	45482	867.342	2068.173	114
Distance to the coast (degrees)	45482	1.849	1.727	1
Altitude	45482	183.692	152.434	165
Nightlights	45482	7.830	15.125	0
Rainy season (rainfall mean)	45482	140.413	17.117	142
Dry season (rainfall mean)	45482	23.992	13.865	28

Data on ever married woman from 1988, 1998, 2014 Togolese DHS and 1996, 2001, 2011, 2017 Beninese DHS.

1925 and 1945, in order to capture missionary expansion and development. Our baseline specifications apply the same structure for both and follow basic estimated OLS models as:

$$Y_{ibd} = \beta ln(Distance\_Mission)_i + \gamma X_{ibd} + \theta Z_{ibd} + \zeta G_{ibd} + \alpha_b + \alpha_d + \epsilon_{ibd} \quad (2.1)$$

Here, we denote Y_{ibd} as the marriage-related outcome of women i, born in the cohort b, living in the district d. We mainly focus on women's age at first marriage as our main dependent variable.[13]

As variable of interest, we use the natural logarithm of the distance between the GPS-coordinates of the surveyed woman's residence and the closest historical mission site, defined before 1925 and before 1945. Our baseline results present estimates for each temporal cutoff, namely Panel A for estimates related to historical missions established before 1925 and Panel B presenting effects for historical missions established before 1945.

As previously explained, we control for several individual characteristics and geographical covariates influencing both age at marriage, family structures and historical location of missionary activities. X_{ibd} is a vector of individual and household level controls that includes a dummy if the woman's location is in an urban area, the number of household members, her religion (Muslim, Christian, traditional and others), her age and a quadratic term in the woman's age. As an individual covariate, we compute and add as control the natural logarithm of the distance to Ouidah (Benin) for each respondent. The coastal locality of Ouidah is known to have been one of the main slavery ports of departure in the Gold Coast. Founded around a Portuguese fort, Ouidah was the entry point of many generations of European vessels and subsequently, generations of colonial pioneers. For this reason, we expect an effect from Ouidah to our interest area in terms of mission location as well as on cultural influences.[14] Z_{ibd} is a

[13] To investigate mechanisms, we also use the number of years of schooling in the same framework and define dummies related to woman's religious affiliations using Linear Probability Model (LPM). In additional results, two other outcomes are elaborated from the marriage age such as binary variables related to the early marriage (before 18 and before 15). In this section, we use also a dummy related to a polygamous family structure if the individual's spouse has more than one wife.

[14] The first presence of Catholic missionaries was attested to in Ouidah in 1861, long before the second mission site was established in the late 19^{th} century. Before 1861, a Catholic presence in the Portuguese garrison was also attested to but the aim to convert the local population remains unclear or nonexistent, the priests apparently concentrating their efforts on European believers. Most of this

vector of covariates related to the ethnicity of the woman in our sample. Firstly, we include a set of dummies according to the individual ethnic group, directly taken from answers at the DHS interview. Furthermore, we control for historical ethnic groups, adding dummies according to the location of the individual's current residence. We use Murdock's mapping available from Nunn's website to match each woman in the sample to the bygone ethnic groups who lived in the area where she currently resides. The idea is to capture the influence of old territories, ancient kingdoms and former cultural areas which could have instituted different social practices or marriage rules and may continue to affect local populations. G_{ibd} is a set of geographical variables, including absolute latitude and longitude values from each cluster location as well as the distance to the coast (in natural logarithm), population densities, altitudes, nightlights and rainfall data (for the rainy and dry seasons) from a 5km radius.

We also include birth cohorts fixed effects, α_b, to control for unobserved heterogeneity across generations. Combining the age, age squared and birth cohorts fixed effects allows us to minimize the recall bias around the age of woman at first marriage (see the previous section for further discussion). As we are concerned with many confounding factors related to the location of the mission, we particularly raise the issue of local fixed effects α_d. In order to control for invariant unobserved heterogeneity across districts, we use the narrowest available administrative level for each country, which is level 3 for Benin (called "*arrondissements*") and level 2 for Togo (called "*communes*"). These may be considered better than usually used sub-national regions and allow us to substitute this fixed effect for many geographical covariates.

Lastly, each estimation controls for country-round fixed effects. ϵ_{ibd} is the error term. All our standard errors are clustered at the municipality level.

2.3 Results

2.3.1 Baseline Results

Baseline results from the Eq. 2.1 are fully presented in the Appendix, Table 2.9 from the parsimonious to the most complete specification. We only retain the complete specification, presented in Table 2.2, column 1 with the age at first marriage as the outcome variable. The table presents two sections, Panel A and Panel B, respectively, estimate results for the proximity to historical missions before 1925 and historical

presence was in support to foreign military forces stationed on the coast.

missions before 1945.[15] We only report two coefficients. One in front of our main interest variable and the other about the distance to Ouidah, in order to distinguish our effect from an effect due to the distance of the historical entry point of the settlers in this area.[16]

For all our specifications, our results indicate that the closeness to a historical Catholic or Protestant mission has a long-term significant and positive effect on the age at first marriage. In other words, the closer to the historical mission a household is located, the later women get married. Results remain robust to the inclusion of our different covariate vectors and municipality fixed effects. One unit increase in the natural logarithm of the closest missions is associated with a decrease by 0.202 years in the marriage age of women for the panel before 1925 and by 0.176 for missions before 1945. The mean distance to the closest missions is almost 71km in 1925 and 31.5km in 1945. Doubling these distances reduce on average the age at first marriage by 0.202 for women living close to missions established before 1925 and 0.176 for all missions established before 1945.

We do not observe a large difference between our two panels. Taking into account the religious expansion of missionaries with our two temporal cross-sections does not seem to affect our main results. The difference between our two models is led by the relatively greater importance of the oldest missions, which may be considered as pioneer missions. Nevertheless this difference is so slight that we can estimate that the missions created between 1925 and 1945 did not change the long run effect because their location is too close to the pioneers and for most of the sample the closest mission distances mostly remain the same.[17] Despite a couple of outliers, the missionary expansion illustrated by Figure 2.1a and Figure 2.1b suggest some concentric development around the most ancient missions (see the Section 2.2.3). This fact proves the non-random location of the second generation missions and consequently reinforces a suspicion of selection bias regarding mission locations, which may distort estimates.

[15] In the Appendix Table 2.9, both Panels use the same framework where column 1 is the most parsimonious specification (without any controls excepted the country-round fixed effects) and the last column is the most complete with the full set of covariates presented in the data section.

[16] Complete results with coefficients from the entire specification are available upon request.

[17] While we notice that the average distance to the nearest historical mission is reduced by half between 1925 and 1945 (from 71 km to 32 km), we also note that the difference related to the median distances is only 11 km (from 32 km to 21 km).

Table 2.2 – Missionary Influence on the Age of Marriage

	(1)	(2)[a]	(3)[b]	(4)[c]	(5)[d]	(6)[e]
Panel A : Before 1925						
ln(Distance_Mission)	-0.202***	-0.282**	-0.183***	-0.176***		-0.265**
	(0.0613)	(0.122)	(0.0607)	(0.0621)		(0.120)
Dummy_30km					0.340*	
					(0.178)	
ln(Distance_Ouidah)	-0.0910	0.257	0.0428	0.00737	-0.110	0.326
	(0.421)	(0.328)	(0.411)	(0.406)	(0.412)	(0.788)
Observations	49,689	33,402	36,876	31,547	49,584	13,677
R-squared	0.159	0.162	0.151	0.158	0.159	0.181
Panel B : Before 1945						
ln(Distance_Mission)	-0.176***	-0.191*	-0.168***	-0.151***		-0.232**
	(0.0562)	(0.104)	(0.0562)	(0.0560)		(0.115)
Dummy_30km					0.543***	
					(0.209)	
ln(Distance_Ouidah)	-0.0307	0.166	-0.0481	-0.0447	-0.0872	0.370
	(0.417)	(0.333)	(0.415)	(0.416)	(0.412)	(0.753)
Observations	49,584	33,402	47,490	37,328	49,584	13,677
R-squared	0.159	0.162	0.158	0.157	0.159	0.181
Individual Controls	Yes	Yes	Yes	Yes	Yes	Yes
Birth cohorts	Yes	Yes	Yes	Yes	Yes	Yes
Municipalities FE	Yes	Yes	Yes	Yes	Yes	Yes
Ethnicity Covariates	Yes	Yes	Yes	Yes	Yes	Yes
Geographical Covariates	Yes	Yes	Yes	Yes	Yes	Yes

All results were estimated using OLS based on data from 1988, 1998, 2014 Togolese DHS and 1996, 2001, 2011, 2017 Beninese DHS using all GPS coordinates to locate their clusters. Sample selection retains only ever-married women. Distance to a religious mission is computed using the GPS coordinates of the respondent's survey cluster and location of the mission recorded in my own dataset.

All specifications present the covariates of the most advanced specification from the Table 2.9 - column (7). Individual Controls are localisation (dummy urban or rural), age, age squared, household's size, education level and religion dummies. Birth Cohorts are dummies for each generational group. Ethnicity covariates are dummies for the ethnicity of the respondent and the historical ethnic group from Murdock (1964). Geographical Covariates are the distance to the coast, latitude and longitude coordinates, population density, altitude, rainfalls for rainy and dry seasons, and nightlights. Ouidah is the first known place were missionaries implemented their cult in the area (1861).

[a] : Specifications use historical data by colonial circles from Huillery (2009 ; 2010). Panel A contains local population in 1925. Panel B contains local population in 1925, total taxpayers and total head taxes in 1939. Data only available for Dahomey colonial administration. Sample restriction at BDHS.

[b] : Sample restricted to areas within 100km of a mission.

[c] : Sample restricted to areas within 50km of a mission.

[d] : Dummy_30km replaces the continuous distance measure and the mission and equals to one if the respondent's cluster is located within 30km of a religious mission.

[e] : Sample restricted to respondents who declare to live in the same place of residence since their childhood (at least until 14 years old).

Each estimation controls for country-round fixed effects. Standard Errors in parentheses are clustered at municipality level. ***, ** and * indicate significance at the 1%, 5 % and 10% levels respectively.

2.3.2 Robustness and selection issues

Historical covariates

All the previous results rest on the absence from the analysis of omitted variables. As previously shown, the missions created between 1925 and 1945 are highly linked to the pioneer missions, which are also highly suspected to be located where the conditions were most favorable to spread the religious message, notably in terms of historical factors.

Despite the fact that we previously argue for a high quality of our municipality fixed effects, we add one other set of covariates in the full specification from the regression to capture potential omitted variables leading to selection bias. Consequently, we add historical data from Huillery (2009, 2010) on the local population in 1925, including total taxpayers and total head taxes paid in 1939. We restrict our sample to only Beninese respondents because only these data are only available for the Dahomey colonial administration. In the column 2 of the Table 2.2, we show that our estimates remain robust to the inclusion of historical data.

Restricted areas

If we suspect that missionary locations are not chosen at random, our OLS estimates may be biased due to the influence of omitted variables correlated both with missionary location and marital practices. Consequently, we report in Table 2.2 estimates restricting the sample to areas within 100km and within 50km of a mission, respectively, in column 3 and column 4. The idea is to focus on homogeneous areas just around the missions, mitigating the potential differences in characteristics between areas far from and close to a mission. Vicinities of religious missions are quite similar in terms of institutions, geographical endowments or customs, thus our strategy is to concentrate our empirical analysis on comparable sites. Keeping the most complete specification from the Eq. 2.1, the estimates present the results with a significant and negative correlation between the distance to the nearest historical mission and the age of women at first marriage. The estimated coefficient of interest remains quite stable around the same order of magnitude. This result means that our effect is persistent across territories with similar characteristics, reducing the potential bias from an endogenous choice of mission location.

Our results are also robust to alternative specifications such as changing the proximity measures. In Table 2.2 column 5, we replace our continuous measure of distance

with a binary variable, equal to one for respondents located within a 30 km buffer around a historical mission and 0 otherwise. The estimated coefficients of interest are statistically significant and positive, meaning that women closer to a mission get married later than others.

Migration issues

Another selection issue could come from the migration phenomena of individuals. Migration decisions of respondents or households may scramble our effects in two ways. First, we consequently count as influenced some groups who could have migrated since the establishment of the mission and thus in reality may have been less affected by the mission. Put differently, migration decisions can be endogenous to the mission location and may biased our estimates. For example, we could make the assumption that the region of the mission's location is especially singular and attracts economic development (with particular infrastructure, administration or public services), surrounding areas of each mission attracts *de facto* more internal migrants.

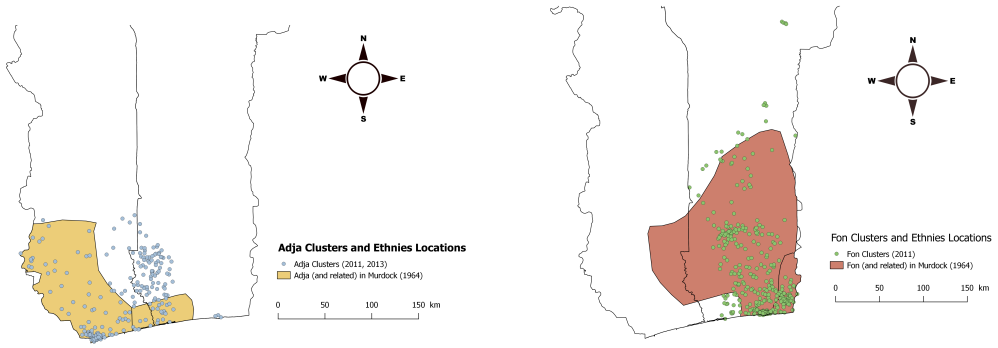
We attempt to address this second issue by trying to focus on non-migrant individuals. From DHS, we extract information related to the number of years that the respondent lived in her place of residence.[18] By restricting the sample to women who declare having had the same place of residence since at least before the age of 14, we control for migration which is not linked to the marriage market. We report our results in Table 2.2, column 6. Our results are robust to the sample restriction on non-migrant individuals, meaning that potential migration does not distort our estimates.[19]

We also illustrate ethnic group displacements to claim no migration counfounding effect. Figure 2.2a and Figure 2.2b represent historical area locations of two major ethnic groups (see the Section 2.2.3 for more information and for detailed location information). Figure 2.2a represents "Adja and related" locations at the cluster level, and Figure 2.2b the "Fon and related" locations. Both figures are based on the histori-

[18]We do not have more clarification about what is meant by the "place of residence". For example, it could mean the respondent's house, the respondent's village or even the respondent's district. For this reason, this information needs to be used with caution and we must keep in mind that migration decision (as we have defined it) is potentially distorted here. In addition, this information exists only for two Togolese DHS (1988 and 1998) and three Beninese DHS (1996, 2001 and 2017).

[19]We also test our result using a more narrow sample restricted to only people who did not move in their childhood, or have never moved. Results remain the same and are available on request.

cal location of ethnic groups from Murdock (1959) and GPS coordinates of respondent clusters from DHS.[20] We observe that there is not a migration pattern at the village level for these ethnic groups. No ethnic displacement over the period does not mean that there is no migration phenomena at all, but the breadth is relatively limited, thus, we also suppose, is its influence.



(a) for Adjas (b) for Fons

Figure 2.2 – Historical locations and present areas of the ethnic groups

Highly exposed ethnic groups

The Adja and Fon groups are unique because of their degrees of exposure to missionary activities. Before 1945, we inventory up to 18 religious missions in areas where the Fons (or related) were located and 23 religious missions where the Adjas (or related) were based. Focusing on exposed groups allows us to perform our analysis on more comparable groups, reducing heterogeneity between individuals. It reduces the share of specific unobserved factors in terms of cultural environment or marriage practices sampling only similar women in the subsequent subgroups according to their ethnic affiliation. Furthermore, with their high level of exposure to missions, individuals from these groups are likely similar in terms of marriage norms and family structure.

Noting relative narrow perimeters in the Fons' and Adjas' historical territories, we use the same framework as previously mentioned. In Table 2.10, we report our results on the restricted sample from these subgroups. Results show a positive and significant impact of being located near the historical missions. Our results are robust when we restrict the sample to respondents living within a 50km perimeter of each

[20] We randomly choose to present cluster locations for 2011 and 2013 in order to make our figures clear, but we note the same layout for the other survey rounds.

mission (Table 2.10, column 2). Taking into account migration, we also retain non-movers, and show that our effect is higher in magnitude in this subsample (Table 2.10, columns 3 and 4).[21]

We presume that missions have locally a high degree of influence, thus we could consider all people from these ethnic groups exposed to quite the same historical effects. In fact, historical missionary activities have likely affected many ancestors of respondents in similar ways, especially when we suppose the numerous migration trajectories of internal groups. Pointing out this high level of exposure to missionaries allows us to consider this whole area as historically homogeneous because all are affected by a high level of religious missionary expansion. Thus, differences between individuals in highly exposed ethnic groups should be close to zero or even non-significant. Although the magnitude of the coefficient is smaller than in our baseline estimates, this effect remains. This result probably shows a local persistent effect of historical missions, acting on present-day marital situation and not confined to norm transmissions from forebears.

2.4 Channels and mechanisms

The results described in the previous section pertaining to highly exposed respondents provide some questions related to a potential local persistent effect rather than a pure long-term impact. In this section, we investigate transmission channels, expecting that missionary activities affect the age at first marriage through two main channels: one related to religious practice modifying people's values and another related to institutions as the provision of public goods *via* educational services.

2.4.1 Religious values channel

We firstly explore the potential channel of the spreading of the religion. As most of the historical missions in our study are Catholic, we presume that the exposure to missionary activities drives religious conversion to the Catholic faith or at least a tendency to embrace Christianity or its practices. Table 2.3 reports linear probability models (LPM) with two dependent variables using dummies equal to one if the re-

[21] "Non-movers" are defined at the ethnic and individual level. We consider as "non-movers" respondents who reside in the historical territory of their ethnic group, following Murdock (1959). At the individual level, we consider their migration pattern.

spondent identifies as either Catholic (columns 1 to 3), or more generally as Christian, i.e. Catholic, Protestant or another Christian faith (columns 4 to 6). We show that the proximity to a historical mission has no effect on the probability of being Catholic or Christian, after controlling for confounding geographical factors. The exposure to missionary activities does not have a long-run effect on the respondent's religiosity. In other words, religion does not seem to be spreading with a mission's historical influence. Consequently, we do not consider religious conversion or religious morality effects as a main driver of our findings. Christian values are not a vector linked to this change in marital norms, i.e. an increase in the marriage age of women.

Despite the absence of a conversion effect, when we restrict our sample to only Christian respondents (47% of the sample), the historical missionary places continue to play a significant role on our dependant variable. In the case where marital norms are influenced by changes in moral values, we presume that Christian believers are uniformly affected by these changes. As it is supposed to be a normative change, the distance to a mission should not have a significant effect or one almost close to zero. In Table 2.4 column 1, we show a negative and significant effect related to the distance to the first historical mission which is slightly higher for Christian believers than for the whole sample.[22] When we try to limit confounding factors by using restriction areas (Table 2.4, column 2), selecting only non-migrants in a restricted area (Table 2.4, column 3), we show that all coefficients are stronger than the robustness estimates in robustness taking into account similar sample restrictions. Eliminating the assumption of religious conversion, this result reinforces the idea of mechanisms supported by a local effect which is persistent through over time depending on missionary activities but not due solely to the practice of the religion.

2.4.2 Education supply

Another mechanism refers to the historical provision by the missionaries of public goods for the local population, notably education services. From the outset of missionary expansion, many missions were associated with the offer of schooling. The necessity to educate in order to spread the doctrine of religion and convert people was clear. As a consequence, many missionary schools were created in Togo and Benin, where religious contingents taught pupils (Cogneau and Moradi, 2014; Wantchekon et al., 2014). Compared to other countries inside the French West Africa, both Benin

[22] Coefficients in front of the interest variable is -0.21 for Panel A and -0.193 for Panel B, compared to -0.202 for Panel A and -0.176 for Panel B in baseline estimates in Table 2.2, column 1.

Table 2.3 – Missionary influence on religion spreading

	to be catholic (dummy)			to be christian (dummy)		
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A : Before 1925						
ln(Distance_Mission)	-0.0108	-0.00445	-0.00446	-0.00748	-0.00642	-0.00624
	(0.00938)	(0.0104)	(0.0104)	(0.00999)	(0.0113)	(0.0113)
ln(Distance_Ouidah)			-0.00660			0.128*
			(0.0530)			(0.0670)
Observations	49,599	49,599	49,599	49,599	49,599	49,599
R-squared	0.189	0.190	0.190	0.366	0.369	0.369
Panel B : Before 1945						
ln(Distance_Mission)	-0.00891	-0.00548	-0.00546	-0.000657	-0.00119	-0.00148
	(0.00710)	(0.00765)	(0.00765)	(0.00835)	(0.00897)	(0.00897)
ln(Distance_Ouidah)			-0.00507			0.129*
			(0.0532)			(0.0675)
Observations	49,599	49,599	49,599	49,599	49,599	49,599
R-squared	0.189	0.191	0.191	0.366	0.368	0.369
Individual Controls	Yes	Yes	Yes	Yes	Yes	Yes
Birth cohorts	Yes	Yes	Yes	Yes	Yes	Yes
Municipalities FE	Yes	Yes	Yes	Yes	Yes	Yes
Ethnicity Covariates	Yes	Yes	Yes	Yes	Yes	Yes
Geographical Covariates	No	Yes	Yes	No	Yes	Yes

All results were estimated using LPM based on data from 1988, 1998, 2014 Togolese DHS and 1996, 2001, 2011, 2017 Beninese DHS using all GPS coordinates to locate their clusters. Sample selection retains only ever-married women. Columns 1 to 3 presents results on the dependent dummy equal to 1 if the respondent is catholic, and 0 otherwise. Columns 4 to 6 presents results on the dependent dummy equal to 1 if the respondent is christian, and 0 otherwise. Distance to a religious mission is computed using the GPS coordinates of the respondent's survey cluster and location of the mission recorded in my own dataset.

Individual Controls are localisation (dummy urban or rural), age, age squared, household's size, education level and religion dummies. Birth Cohorts are dummies for each generational group. Ethnicity covariates are dummies for the ethnicity of the respondent and the historical ethnic group from Murdock (1964). Geographical Covariates are the distance to the coast, latitude and longitude coordinates, population density, altitude, rainfalls for rainy and dry seasons, and nightlights. Ouidah is the first known place were missionaries implemented their cult in the area (1861).

Each estimation controls for country-round fixed effects. Standard Errors in parentheses are clustered at municipality level. ***, ** and * indicate significance at the 1%, 5 % and 10% levels respectively.

Table 2.4 – Age of marriage effect on Christians respondents

	(1)	(2)[a]	(3)[b]
Panel : Before 1925			
ln(Distance_Mission)	-0.210**	-0.199**	-0.360*
	(0.0837)	(0.0849)	(0.200)
ln(Distance_Ouidah)	-0.419	-0.321	-0.666
	(0.501)	(0.482)	(1.079)
Observations	23,778	19,060	4,502
R-squared	0.178	0.173	0.215
Panel : Before 1945			
ln(Distance_Mission)	-0.193***	-0.192***	-0.455**
	(0.0730)	(0.0735)	(0.189)
ln(Distance_Ouidah)	-0.373	-0.243	-0.700
	(0.496)	(0.482)	(1.030)
Observations	23,778	20,917	4,964
R-squared	0.178	0.174	0.218
Individual Controls	Yes	Yes	Yes
Birth cohorts	Yes	Yes	Yes
Municipalities FE	Yes	Yes	Yes
Ethnicity Covariates	Yes	Yes	Yes
Geographical Covariates	Yes	Yes	Yes

All results were estimated using OLS based on catholic respondents from 1988, 1998, 2014 Togolese DHS and 1996, 2001, 2011, 2017 Beninese DHS using all GPS coordinates to locate their clusters. Sample selection retains only ever-married women in highly influenced ethnies. Distance to a religious mission is computed using the GPS coordinates of the respondent's survey cluster and location of the mission recorded in my own dataset.

All specifications use the covariates of the most advanced specification from the Table 2.2 - column (1). Individual Controls are localisation (dummy urban or rural), age, age squared, household's size, education level and religion dummies. Birth Cohorts are dummies for each generational group. Ethnicity covariates are dummies for the ethnicity of the respondent and the historical ethnic group from Murdock (1964) (only for columns (4)-(7)). Geographical Covariates are the distance to the coast, latitude and longitude coordinates, population density, altitude, rainfalls for rainy and dry seasons, and nightlights. Ouidah is the first known place were missionaries implemented their cult in the area (1861).

[a] : Sample restricted to areas within 50km of a mission.

[b] : Sample restricted to respondents who declare to live in the same place of residence since their birth, childhood or at least before their marriage (at least until 14 years old) and in areas within 50km of a mission.

Each estimation controls for country-round fixed effects. Standard Errors in parentheses are clustered at municipality level. ***, ** and * indicate significance at the 1%, 5 % and 10% levels respectively.

and Togo were very particular in terms of schooling investments from missionaries, notably with a high level of enrollment of girls at religious schools. In this section, we mostly explore the transmission channels from the historical presence of religious girls' schools adjacent to missions on present-day marital norms and schooling.

Religious girls schools effects

Using academic and religious reports, we investigate the link between missions and adjacent religious schools. For Togo, most of the existing documents are from around 1945, therefore we concentrate our analysis on the panel before this temporal cutoff. As the enrollement of girls in school was not common at this period, we define as a religious girls' school an establishment where the administration reports at least one female pupil enrolled.

For each survey cluster, we compute the distance to the nearest historical religious girls' school and the distance to the nearest mission without any girls enrolled or adjacent school. These measures replace our main variable of interest in the OLS estimates. First, we use each distance separtely, then both measures in concert. Our results are reported in Table 2.5, using as dependent variables the age at first marriage for columns 1 to 4 and years of schooling for columns 5 to 8.[23] We find that the distance to a historical school plays a significant and negative effect on the marriage age and on the number of years of schooling. In other words, when respondents live farther away, they marry earlier and spend less time enrolled in school. Otherwise, the distance to the nearest historical mission without a school has no effect on marriage structure or schooling, denoting that our changes of family norms have only been influenced where missionaries did their early schooling investment. Our results remain the same when we simultaneously include distance to the first religious girls' school and the distance to the first mission without a girls' school. Observing a similar relationship for both outcomes means that religious girls' schools likely drive our main effect. Furthermore, these results hold when we focus on similar unobserved characteristics, restricting the area to a 50 km buffer for each historical mission site.

The schooling effect on girls is directly linked to the rise of the age at firt marriage channel for our marriage effect. Missionaries were pioneers in education supply in this area and consequently have driven schooling, female enrollment and female school participation since their implementation.

[23] Result tables present estimates using all controls from the complete baseline specification, presented in the Section 2.2.

Table 2.5 – Religious girls' schools effect on marriage and schooling

	Age of Marriage				Years of Schooling			
	(1)	(2)	(3)	(4)[a]	(5)	(6)	(7)	(8)[a]
Panel : Before 1945								
ln(Distance_Girls' Schools)	-0.271***		-0.271***	-0.241***	-0.156**		-0.156**	-0.126*
	(0.0641)		(0.0640)	(0.0640)	(0.0729)		(0.0732)	(0.0730)
ln(Distance_No Girls' Schools)		-0.0560	-0.0569	-0.0675		-0.0877	-0.0882	-0.0683
		(0.0734)	(0.0744)	(0.0732)		(0.0626)	(0.0624)	(0.0637)
ln(Distance_Ouidah)	0.000638	-0.120	-0.0209	-0.0454	0.271	0.180	0.238	0.123
	(0.421)	(0.415)	(0.426)	(0.425)	(0.567)	(0.568)	(0.570)	(0.572)
Observations	49,584	49,584	49,584	39,558	49,577	49,577	49,577	39,552
R-squared	0.159	0.159	0.159	0.158	0.299	0.299	0.299	0.294
Individual Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Birth cohorts	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Municipalities FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Ethnicity Covariates	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Geographical Covariates	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

All results were estimated using OLS based on 1988, 1998, 2014 Togolese DHS and 1996, 2001, 2011, 2017 Beninese DHS using all GPS coordinates to locate their clusters. Sample selection retains only ever-married women. Distance to a religious girls' school is computed using the GPS coordinates of the respondent's survey cluster and location of the girls' school recorded in my own dataset. We retain as historical religions girls' school, missions with at least one female pupil recorded before 1945. Distance to a mission without girls' school is named "Distance_No Girls' Schools" and is computed using the GPS coordinates of the respondent's survey cluster and location of the mission recorded in my own dataset.

All specifications use the covariates of the most advanced specification from the Table 2.2 - column (1). Individual Controls are localisation (dummy urban or rural), age, age squared, household's size, education level and religion dummies. Birth Cohorts are dummies for each generational group. Ethnicity covariates are dummies for the ethnicity of the respondent and the historical ethnic group from Murdock (1964).Geographical Covariates are the distance to the coast, latitude and longitude coordinates, population density, altitude, rainfalls for rainy and dry seasons, and nightlights. Ouidah is the first known place were missionaries implemented their cult in the area (1861).

[a] : Sample restricted to areas within 50km of a mission.

Each estimation controls for country-round fixed effects. Standard Errors in parentheses are clustered at municipality level. ***, ** and * indicate significance at the 1%, 5 % and 10% levels respectively.

Endogenous selection of missionary girls schools

Our last effect rests upon an absence of omitted variables, which drives the missionaries' location choice of girls' schools in the first part of the twentieth century. The correlation that we find could be due to these variables, potentially correlated with both the location choice and the tendency to enroll girls in schools by local populations. To tackle this issue, we adopt the matching method developed by Cagé and Rueda (2016), using the nearest neighbors approach to select similar places.

We first compute each mission's probability of having a girls' school, given covariates related to their geographical environment. As we do not have historical covariates related to the establishment of the missions, we only retain present-day data related to mission locations, making the assumption that covariate differences are mostly due to invariant divergences, highly correlated with past conditions and situations. Balancing tests with all covariates used for the matching are presented in Table 2.11 in the Appendix. Through a Probit model, we obtain a propensity score for each mission. We next match missions retaining nearest neighbor pairs between missions with a girls' school and the missions without. Then, for each cluster survey location, we compute the geodetic distance to the closest mission that actually had either actually a girls' school or all the features to have been potentially selected as a location by missionaries. As in Calvi and Mantovanelli (2018), we present two different models using full controls based on the complete specification. The first extends the baseline model with including the measure of distance to the nearest matched mission as well as a dummy if the closest site actually had a historical religious girls' school. The other is a fully interacted model where all of our covariates are interacted with this dummy, equal to one if the closest mission had a girls' school. Therefore, we distinguish the pure effect of being located near a religious girls' school from the effect of proximity to a religious site with similar geographic endowments but with no pioneer investments in girls' education.

In Table 2.6, we similarly report our estimates on the age of women at first marriage and the number of years spent in school, using both models. Columns 1 and 4 present specifications of the first model, using a unique measure of proximity for nearest matched mission. In contrast, columns 2, 3, 5, 6 present fully interacted models, as previously explained. As expected for the first model, estimated coefficients of interest are negative and significant, meaning that living near a mission with a girls' school or near a mission which has all features for a girls' school increases the age at

Table 2.6 – Matching strategy

	Age of Marriage			Years of Schooling		
	(1)	(2)	(3)[a]	(4)	(5)	(6)[a]
Panel : Before 1945						
ln(Distance from religious schools or likely)	-0.214***			-0.106		
	(0.0563)			(0.0657)		
Religious Schools (Dummy)	-0.0249	3.129	1.083	0.139	6.608	6.065
	(0.151)	(7.798)	(7.882)	(0.159)	(4.847)	(4.939)
Distance from religious schools or likely (ln) x		-0.208***	-0.158**		-0.111***	-0.0816**
Religious Schools (Dummy)		(0.0612)	(0.0626)		(0.0409)	(0.0406)
Distance from religious schools or likely (ln) x		-0.180	-0.174		0.0349	0.0600
No School (Dummy)		(0.141)	(0.137)		(0.185)	(0.185)
Observations	49,584	49,584	32,121	49,577	49,577	32,115
R-squared	0.159	0.160	0.160	0.299	0.689	0.662
Individual Controls	Yes	Yes	Yes	Yes	Yes	Yes
Birth cohorts	Yes	Yes	Yes	Yes	Yes	Yes
Municipalities FE	Yes	Yes	Yes	Yes	Yes	Yes
Ethnicity Covariates	Yes	Yes	Yes	Yes	Yes	Yes
Geographical Covariates	Yes	Yes	Yes	Yes	Yes	Yes

All results were estimated using OLS based on 1988, 1998, 2014 Togolese DHS and 1996, 2001, 2011, 2017 Beninese DHS using all GPS coordinates to locate their clusters. Sample selection retains only ever-married women. Distance to a religious girls' school (or likely) is computed using the GPS coordinates of the respondent's survey cluster and location of the place recorded in my own dataset. We retain as historical religious girls' school, missions with at least one female pupil recorded before 1945. We define as "likely" historical religions girls' school the matched missions according to their similar characteristics. "Religious School" is a dummy equal to one if the nearest "historical religious girls' school or likely" was actually a real girls' school. Columns (2) - (3) for age at first marriage and columns (5) - (6) for years of schooling show estimates for a fully interacted model between our interest variable and covariates with the dummy "Religious School".

All specifications use the covariates of the most advanced specification from the Table 2.2 - column (1). Individual Controls are localisation (dummy urban or rural), age, age squared, household's size, education level and religion dummies. Birth Cohorts are dummies for each generational group. Ethnicity covariates are dummies for the ethnicity of the respondent and the historical ethnic group from Murdock (1964). Geographical Covariates are the distance to the coast, latitude and longitude coordinates, population density, altitude, rainfalls for rainy and dry seasons, and nightlights. Ouidah is the first known place were missionaries implemented their cult in the area (1861).

[a] : Sample restricted to areas within 50km of a mission.

Each estimation controls for country-round fixed effects. Standard Errors in parentheses are clustered at municipality level. ***, ** and * indicate significance at the 1%, 5 % and 10% levels respectively.

first marriage and schooling time of women. In interpreting these findings, increasing the time spent in school raises de facto the age of entry onto the marriage market. In columns 2 and 5, we show that these effects are only driven by missions equipped with a girls' school and which were pioneers in the investment of girls' education. These results hold when we restrict the sample to respondents living within a narrow perimeter around the mission, as we show in columns 3 and 6. To conclude, using the matching strategy does not invalidate our mechanisms and allows us to certify the key role of missionary schools' influence on marriage norms, pushing back the female onto the marriage market.

Selection bias from unobservables

Another strategy to assess the robustness of our channel estimates is to exploit insights from Altonji et al. (2005) and Oster (2019) in order to evaluate the sensitivity of our results to added covariates and the bias from unobservables. Although we previously attempt to control for many selection issues with the inclusion of different vectors of historical confounding factors, restricting the sample to individuals who live just around a mission, and using a matching strategy to avoid selection on observables, the selection on unobservables potentially remains and may still drive our results. We cannot exclude the possibility that unobserved variables related to mission location decisions, long-term economic development, and individual (or collective) settlement choices are correlated with the marriage practices and family structures.

To tackle this issue, we firstly follow Nunn and Wantchekon (2011) and use the strategy developed in Altonji et al. (2005), which aims to evaluate how much stronger the selection on unobservables has to be in order to fully explain the missionary effects on marital outcomes, compared to a selection on observables.[24] We perform several estimates with three different sets of restricted covariates to test the coefficient ratio and report our results in Table 2.7, column 1. First, we only include age and district fixed effects in the restricted specification. Second, we select a sparse set of individual controls such as age, age squared, household size, education level and birth cohort fixed effects in addition to the district fixed effects. Third, we add the respondent's ethnicity to the previous set of covariates. For all of these restricted specifications, we test from our most complete specification the coefficient related to the distance

[24] In this paper, we use Altonji et al. (2005)'s ratios, comparing the coefficient β^R of the interest from a regression including a restricted set of controls to the coefficient β^F from an estimate with the full specification. Extracting coefficients from the regressions, we compute the ratio $\beta^F/(\beta^R - \beta^F)$.

to the nearest religious girls' school. All our coefficient ratios are higher than 10 (in absolute value), meaning that our estimates do not seem to be driven and biased by unobserved determinants.[25]

Table 2.7 – Importance of bias from unobservables

Robustness Test		(1) Coeff. Ratio Test (Altonji et al. 2005)	(2) Minimum Coeff. Lower Bound (Oster, 2016)	(3)	(4)	(5) $\hat{\beta}^F$ -/+ 2.8 SE
Restricted Set	Full Set		$R^2_{Max} = min(1.3\hat{R}^2_F; 1)$	$R^2_{Max} = min(2\hat{R}^F; 1)$	$R^2_{Max} = 1$	
District FE	Set from est. (1) Tab.2	15.54	-0.186	-0.558	-0.267	[-0.39 ; -0.059]
District FE, Birth Cohors FE, Indiv. Covariates	Set from est. (1) Tab.2	-10.35	-0.147	-0.16	-0.163	[-0.326 ; -0.056]
District FE, Birth Cohors FE, Indiv. Covariates, Ethnicity	Set from est. (1) Tab.2	-13.02	-0.151	-0.161	-0.164	[-0.323 ; -0.062]

Each cell report results using data from 1988, 1998, 2014 Togolese DHS and 1996, 2001, 2011, 2017 Beninese DHS using all GPS coordinates to locate their clusters. Sample selection retains only ever-married women in highly influenced ethnies. All tests are based on specification from Table 2.5, Column 3 with age at first marriage as dependent variable and distance to the nearest girls' school, distance to the nearest missions without girls' school as variables of interest. Covariates are same as those used in the complete baseline regression.
Column 1 reports ratios using the method presented in Altonji et al. (2005). Following Nunn and Wantchekon (2011), we show several ratios depending on the form of the restricted regression.
Columns 2 to 4 report bias-adjusted coefficients lower bounds using the method presented in Oster (2019). All tests used $\delta = 1$ and several maximal R-squared : 1.3 times the R-squared of the full specification (named R^2_F), 2 times and equal to one, the maximum.
Column 5 reports the bounds of the 99.5% confidence interval of the fully controlled estimate of the coefficient of interest.

Our second strategy is to exploit the insight from Oster (2019), derived from the previous method. As in Altonji et al. (2005), Oster (2019) exploits the coefficient variabilities after the inclusion of covariates (between our restricted and complete specification models) but also take into account that R-squared are moving.[26] Table 2.7 presents our lower bound estimates, with all restricted specifications for each maximal R^2, named R^2_{max}.[27] In our results, all estimated bias-adjusted β hold their sign and

[25] Our large ratios mean concretely that selection on unobservables needs to be at least 10 times greater than selection on observables to drive our estimates. Furthermore, negative ratios mean that additional controls increase the magnitude of the coefficient (Fenske, 2015). We doubt that our results are actually due to unobserved variables with an influence 10 times greater than the observed covariates included in the regression.

[26] This method allows us to compute lower bounds related to our coefficient of interest. The estimator excluding the bias due to unobservables is computed following $\beta^* = \frac{\beta^F - \delta(\beta^R - \beta^F)(R^2_{max} - R^2_F)}{R^2_F - R^2_R}$. We export β^F and R^2_F from the regression presented in Table 2.5, column 3, with β^F the coefficient of interest from the distance to the nearest girls' school. β^R and R^2_R are from the estimates of the restricted specification. Following Oster (2019), all lower bound results assume that δ, the ratio between the explanatory powers of the restricted and the full controlled equations, is equal to one, suggesting that the unobservables have the same importance relative to observables to explain away the results.

[27] We first follow Oster (2019), defining the R^2_{max} at 1.3 times of the R^2 from the full specification (R^2_F), then 2 times of the $R2$ from the full specification, and finally 1, the maximal potential value of R^2. We only present in Table 2.8 results for values of R^2_{max} at these values. Further results are available upon request, with a R^2_{max} defined at 0.6 times following Cagé and Rueda (2016), or at 1.5 times.

significance, meaning that the entire treatment effect is not driven by unobserved variance.

The heterogeneity of marriage payments

In this subsection, we study whether a consistent mechanism underlies the education channel, explaining both the rise of the time spent in school and the age at first marriage. By using historical information on ethnic groups, we examine heterogeneity in the effects of proximity to historical missions and religious schools for girls. Our favorite mechanism is supported by heterogenous marriage norms in terms of marriage payments.

Bride price custom

Recent papers document different adaptation strategies related to marriage behavior from households exposed to exogenous shocks on bride price. In both sub-Saharan Africa and India, Corno et al. (2017) document that droughts have differential effects on age at first marriage depending on the historical ethnic customs of marriage payments. They find that the women's age at first marriage is directly linked to short-term changes in economic conditions, such as household income. They also show that the association between child marriage and drought is significant in areas where bride pride is the prevailing custom in sub-Saharan Africa. In Indonesia and Zambia, Ashraf et al. (2020) show that education has a positive and significant effect on bride price amounts. Consequently, they also show that marriage norms influence household responses to education policies. For households with bride price customs, parents are more likely to invest in the education of their daughters, thus raising the price of the bride.

Drawn from both papers, our theory is based on differential effects of investment in education by religious pioneers due to the heterogeneity in bride price practices in Togo and Benin. First, the supply of public goods from missionaries has led to the development of schooling and the promotion of education in areas where missionaries operated. In Table 2.12 of the Appendix, we show that missionary investment is directly linked with the present-day female enrollment in primary school. Women located in these areas still benefit from a persistent effect due to a local inclination to educate girls. Second, because of the marriage payments norms, schooling has an effect on the bride price's value that delays the marriage. Corno et al. (2017) show that in sub-Saharan Africa during drought low-educated women are more likely to marry, as it is

easier to hasten their entry onto the marriage market when economic conditions are changing. The idea behind is that there are less barrier for matching a suitor when the bride price is low. Inspired by Ashraf et al. (2020), we argue that better-educated women are also more likely to have a high bride price. For parents, having an educated daughter creates an incentive to delay her entry onto the marriage market and to wait for the best suitor who can pay the highest bride price. This mechanism is thus conditional to the household's bride price practice.

To examine the heterogeneous effects on the marriage market, we use the *Ethnographic Atlas* (Murdock et al., 1967), and divide ethnic groups between groups that practice monetary transfers (bride price) and groups that practice bride service or female relative exchange.[28] We combine information related to traditional marriage customs at the local level using ethnicity data from the DHS, creating a dummy equal to one if the respondent declares herself from an ethnic group that employs bride price practices and is located into a historical territory where the originated ethnic group has the same practice.[29] We consider these individuals not affected by other cultural norms, because the cultural homogeneity between their own norms and their areas of residence allows the continuity of their practices. By contrast, individuals from ethnic groups which do not historically practice bride price and are located in areas with bride-price customs are more likely to abandon their norms, adopting other customs or coming under social pressure to educate girls in areas where education is promoted by cultural values.

[28]We find four different traditional marriage customs in our sample : bride service, female relative exchange, bride price and token bride price. Using the definition of the different customs from *Atlas of the World* (Murdock, 1981, pp. 92-93), we combine bride price and token bride price. Although the latter is traditionally a small payment, we consider that the spread of women's education could change the amount of the bride price.

[29]We match the historical areas of ethnic groups from (Murdock, 1959) with information on marriage customs in the *Ethnographic Atlas* (Murdock et al., 1967) in order to identify local local areas where non-bride price customes were likely to be practiced.

Estimates in this section extend the baseline model using an interacted variable between the measure of the distance to the nearest girls' school and dummies related to the bride price customs as interest variables:

$$\begin{aligned} Y_{ibd} = {} & \beta_1 ln(Dis.GirlsSchool)_i \cdot NBridePr_i^1 + \\ & \beta_2 ln(Dis.GirlsSchool)_i \cdot NBridePr_i^0 + \alpha NBridePr_i^1 + \\ & \zeta ln(Dis.Mis.NoSchool) + \gamma X_{ibd} + \epsilon_{ibd} \end{aligned} \tag{2.2}$$

where $NBridePr$ is a dummy variable equal to one if the respondent does not practice a bride price custom. All other variables are defined as in Eq. 2.1. In Table 2.8, we present estimates on age at first marriage and years of schooling, respectively, in columns 1 and 3. Regarding the age at first marriage, the estimate shows that the effect of proximity to a pioneer girls' school is conditional to traditional marriage customs. The effect is negative and significant coefficient for respondents with bride price customs and is non-significant for the others. We find similar results using years of schooling as the outcome variable. If traditional marriage norms seem to play a crucial role in terms of changes in the age at first marriage, non-bride price customs also explain weak investment in girls' education and consequently earlier marriages.

All our analysis present a specification using a dummy for girls' school equal to one if at least one enrolled girl is reported in the administrative records. As mentioned, we consider this measure as a sign of past inclination of locals to educate girls. However, we recognize that this measure may suffer from limitations, notably gathering many different places with different school sizes. Because of that limitation, we divide our sample of religious girls' schools between two groups, one including missions with minor female pupil headcount (less than 50) and another including missions with much more girls (more than 50). For each survey cluster, we compute a distance to the closest site for each group of girls' schools. In order to capture heterogeneity from the size of girls' schools, we interact these distances with the dummy related to the bride price customs of the respondent. As we previously do not find an effect for women who practice non-bride price customs, we keep the same variable of interest for this group. Estimates are presented in Table 2.8, columns 2 and 4 for age at first marriage and years of schooling, respectively. We show similar heterogeneous effects, with a stronger effect for the larger girls' schools of bride price respondents and note that the coefficient in front of the distance to the nearest religious girls' school remains

Table 2.8 – Heterogeneity from Bride Price norms

	Age of Marriage		Years of Schooling	
	(1)	(2)	(3)	(4)
Distance to the girls' school (ln) ×	-0.274***		-0.159**	
Bride Price Customs (Dummy=0)	(0.0640)		(0.0732)	
Distance to the girls' school (ln) ×	0.214	0.179	0.371	0.310
Non-bride Price Customs (Dummy=1)	(0.309)	(0.316)	(0.298)	(0.302)
Non-bride Price Customs (Dummy=1)	-2.414*	-3.459**	-2.506*	-3.303**
	(1.424)	(1.464)	(1.332)	(1.380)
Distance to non-girls' school (ln)	-0.0564	-0.0567	-0.0878	-0.0882
	(0.0745)	(0.0749)	(0.0625)	(0.0621)
Distance to the high size girls' school (ln) ×		-0.255***		-0.189**
Bride Price Customs (Dummy=0)		(0.0714)		(0.0909)
Distance to the low size girls' school (ln) ×		-0.222***		-0.159**
Bride Price Customs (Dummy=0)		(0.0948)		(0.0880)
Observations	49,584	49,584	49,577	49,577
R-squared	0.159	0.159	0.299	0.299
Individual Controls	Yes	Yes	Yes	Yes
Birth cohorts	Yes	Yes	Yes	Yes
Municipalities FE	Yes	Yes	Yes	Yes
Ethnicity Covariates	Yes	Yes	Yes	Yes
Geographical Covariates	Yes	Yes	Yes	Yes

All results were estimated using OLS based on 1988, 1998, 2014 Togolese DHS and 1996, 2001, 2011, 2017 Beninese DHS using all GPS coordinates to locate their clusters. Sample selection retains only ever-married women. Distance to a religious girls' school (low or high size) is computed using the GPS coordinates of the respondent's survey cluster and location of the place recorded in my own dataset. We retain as historical religions girls' school, missions with at least one female pupil recorded before 1945. We define as low size the missions with a weak female pupils headcount (less than 50) and as high size the missions with enough girls to have a great impact on pioneer infrastructures (more than 50). Distance to a mission without girls' school is named "Distance to non-girls' school" and is computed using the GPS coordinates of the respondent's survey cluster and location of the mission recorded in my own dataset. Bride Price Customs is a dummy equal to one if the respondent declares an ethnic group with non-bride price practices and is located into a historical territory with same practices. Tradition of marriage payments are defined using information from Murdock et al. (1967) as in Ashraf et al. (2020).

All specifications use the covariates of the most advanced specification from the Table 2.2 - column (1). Individual Controls are localisation (dummy urban or rural), age, age squared, household's size, education level and religion dummies. Birth Cohorts are dummies for each generational group. Ethnicity covariates are dummies for the ethnicity of the respondent and the historical ethnic group from Murdock (1964). Geographical Covariates are the distance to the coast, latitude and longitude coordinates, population density, altitude, rainfalls for rainy and dry seasons, and nightlights and the distance to Ouidah.

Each estimation controls for country-round fixed effects. Standard Errors in parentheses are clustered at municipality level. ***, ** and * indicate significance at the 1%, 5 % and 10% levels respectively.

non-significant for individuals who do not practice bride price customs, as well as for the distance to missions without girls' school. Conditionally to traditional marriage norms, we obtain heterogeneous effects due to the size of the missionary girls' school both for the age at first marriage and number of years of schooling. The past investment in girls schooling by missionaries has driven the propensity to educate girls at the local level. For households, this investment in girls' education is motivated by a monetary incentive due to the increase of the daughters' bride prices, as found in Ashraf et al. (2020).

Other potential mechanisms

We test and exclude other mechanisms linked to the increase in years of education and the change of marriage timing. The first mechanism is related to a purely mechanical effect due to the time spent in school. Increasing the number of schooling years could directly delay the entry onto the marriage market because households would be expected to wait until the end of their daughters' studies before marrying them off. We test this assumption using several specifications. We find no effect of proximity to a pioneer girls' school on the girl's probability to complete primary, secondary or university studies. We also find no relationship between missionaries education activities and schooling infrastructures (i.e. number of schools built) at local level for secondary or university. Therefore, our effect could not be due to a delay onto the entry in the marriage market due to the end of the schooling period.

Another mechanism could be linked to the participation in the formal workforce or job market due to an higher educational endowment. Using the job market information from DHS, we do not find any effect of missionary presence on labor market participation, time spent at work or wages earned. In addition, using data from the 2014 *Enquêtes sur la Transition vers la Vie Active* (ETVA) provided by the International Labour Organization (ILO), informal employment is 92.7% in Benin and 94.4% in Togo for young women under 24. This high percentage of informal employment among women cannot support a mechanism based on a tradeoff between the marriage market and job opportunities to explain our effect.

2.5 Additional results

In this section, we widen the scope related to marriage norms, in order to investigate other outcomes and present results on the early marriage and family polygyny

practices.

2.5.1 Early Marriage

Because we show that the proximity of religious missions increases the mean age at first marriage, we expect a potential effect on early marriage and child marriage. We define two binary variables related to early marriage, the first equal to one if the respondent is married before the age of 18 and another if she is married before 15.

Using a LPM, we estimate the effect of the proximity to missions, controlling for all covariates presented for the baseline specification. The results are presented in Table 2.13 for our two temporal cut-offs: 1925 and 1945 (Panel A and Panel B, respectively). Independently of these cutoffs, we show that being far away from a mission increases the probability to an early marriage before the age of 18 or 15.

2.5.2 Polygamous family structure

The mission effect on polygyny is widespread in the literature, notably in Fenske (2015) and Kudo (2017). As we do not previously notice a religious conversion mechanism, we do not expect that the proximity to a mission changes the traditional norms in terms of social practices, apart from elements related to the entry age of women onto the marriage market. Consequently, we may expect a continuity in the traditional family structure such as polygamous marriage, regardless of the family's location. To investigate an effect on family structure, we use as dependent variable a dummy equal to one for each respondent who is married to a husband who has at least another wife.

Estimates for both of our panels reported in Table 2.13 indicate no significant effects of the proximity to a mission, arguing for the fact that the morality discourse linked to the religion has failed to regulate traditional marriage structures.

2.6 Conclusion

This paper studies the long-run effect of missionary activities in Benin and Togo on marital practices, particularly early marriage. Aware of potential bias related to missing missions (Jedwab et al., 2019), we rely upon our own collected dataset of missionary expansion including the main mission locations and detailed information such as the supply of local public goods and schooling headcounts. Using these new data, we decide not to impose arbitrary cutoffs related to missionary expansion

by making two temporal cross-sections in order to capture the spatial dynamic of missionary activities. This also allows us to capture potential divergent effects or potential confounding factors due to the location of pioneer missions.

Our results point to a positive and significant effect of the proximity of historical missions to the age at first marriage of women. To assess the robustness of our results, we provide several robustness checks and alternative models. Exploiting plausible mechanisms, we first document an absence of effect of the religious conversion, meaning that religious values do not seem to drive the long-term relationship between our marital outcome and the distance to the closest mission. Furthermore, we show that missions have heterogeneous effects according to their past investment in human capital, notably in girls' education. Assessing that unobservables cannot drive our effect, we show that only the proximity to historical missions equipped with a girls' school raises a woman's age at first marriage as well as the number of years spent in school. We explain this relationship as a consequence of bride price customs, showing that originated missionaries led public good investments in women's education and that only respondents who practice bride price are affected by this exposure to missionary activities.

While there is a growing research on a historical persistent effect from institutions particularly related to missionary activities, few studies address the question of a long-run effect on marriage. The analysis presented in this chapter suggests that traditional marital norms in Benin and Togo are directly affected by historical infrastructure investments linked with missionary activities. Schooling supply by missionaries has deeply altered the contemporary timing of marriage of women, claiming education as a powerful game changer of social norms.

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Appendix

Appendix A. Estimates

Table 2.9 – Impact of religious missions on the age at first marriage

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Panel A : Before 1925							
ln(Distance_Mission)	-0.542***	-0.336***	-0.330***	-0.184***	-0.205***	-0.202***	-0.202***
	(0.0190)	(0.0602)	(0.0604)	(0.0559)	(0.0591)	(0.0613)	(0.0613)
ln(Distance_Ouidah)							-0.0910
							(0.421)
Observations	49,689	49,689	49,689	49,673	49,584	49,584	49,584
R-squared	0.048	0.091	0.128	0.157	0.159	0.159	0.159
Panel B : Before 1945							
ln(Distance_Mission)	-0.585***	-0.315***	-0.304***	-0.139***	-0.179***	-0.176***	-0.176***
	(0.0231)	(0.0457)	(0.0454)	(0.0463)	(0.0531)	(0.0563)	(0.0562)
ln(Distance_Ouidah)							-0.0307
							(0.417)
Observations	49,689	49,689	49,689	49,673	49,584	49,584	49,584
R-squared	0.042	0.091	0.128	0.157	0.159	0.159	0.159
Individual Controls	No	No	No	Yes	Yes	Yes	Yes
Birth cohorts	No	No	Yes	Yes	Yes	Yes	Yes
Municipalities FE	No	Yes	Yes	Yes	Yes	Yes	Yes
Ethnicity Covariates	No	No	No	No	Yes	Yes	Yes
Geographical Covariates	No	No	No	No	No	Yes	Yes

All results were estimated using OLS based on 1988, 1998, 2014 Togolese DHS and 1996, 2001, 2011, 2017 Beninese DHS using all GPS coordinates to locate their clusters. Sample selection retains only ever-married women. Distance to a religious mission is computed using the GPS coordinates of the respondent's survey cluster and location of the mission recorded in my own dataset.

Individual Controls are localisation (dummy urban or rural), age, age squared, household's size, education level and religion dummies. Birth Cohorts are dummies for each generational group. Ethnicity covariates are dummies for the ethnicity of the respondent and the historical ethnic group from Murdock (1964). Geographical Covariates are the distance to the coast, latitude and longitude coordinates, population density, altitude, rainfalls for rainy and dry seasons, and nightlights. Ouidah is the first known place were missionaries implemented their cult in the area (1861).

Each estimation controls for country-round fixed effects. Standard Errors in parentheses are clustered at municipality level. ***, ** and * indicate significance at the 1%, 5 % and 10% levels respectively.

Table 2.10 – Age of marriage effect on highly influenced ethnic groups

	(1)	(2)[a]	(3)[b]	(4)[c]
Panel : Before 1925				
ln(Distance_Mission)	–0.175**	-0.166**	-0.185**	-0.389**
	(0.0768)	(0.0775)	(0.0838)	(0.177)
ln(Distance_Ouidah)	0.267	0.305	-0.00178	-1.257
	(0.431)	(0.430)	(1.082)	(2.257)
Observations	23,301	22,337	18,126	4,807
R-squared	0.166	0.163	0.167	0.193
Panel : Before 1945				
ln(Distance_Mission)	-0.115*	-0.115*	-0.152**	-0.380**
	(0.0698)	(0.0698)	(0.0741)	(0.159)
ln(Distance_Ouidah)	0.264	0.275	0.225	-0.828
	(0.428)	(0.427)	(1.053)	(2.217)
Observations	23,301	22,935	18,381	4,869
R-squared	0.166	0.164	0.167	0.194
Individual Controls	Yes	Yes	Yes	
Birth cohorts	Yes	Yes	Yes	
Municipalities FE	Yes	Yes	Yes	
Geographical Covariates	Yes	Yes	Yes	

All results were estimated using OLS based on data highly influenced ethnies (Adja - or related - and Fons -or related) from 1988, 1998, 2014 Togolese DHS and 1996, 2001, 2011, 2017 Beninese DHS using all GPS coordinates to locate their clusters. Sample selection retains only ever-married women in highly influenced ethnies. Distance to a religious mission is computed using the GPS coordinates of the respondent's survey cluster and location of the mission recorded in my own dataset. Individual Controls are localisation (dummy urban or rural), age, age squared, household's size, education level and religion dummies. Birth Cohorts are dummies for each generational group. Geographical Covariates are the distance to the coast, latitude and longitude coordinates, population density, altitude, rainfalls for rainy and dry seasons, and night-lights. Ouidah is the first known place were missionaries implemented their cult in the area (1861).

[a]: Sample restricted to areas within 50km of a mission.

[b]: Sample restricted to "no-moovers" respondents, *i.e.* respondents located in the old territory of their ethnic groups and in areas within 50km of a mission.

[c]: Sample restricted to "no-moovers" respondents who also declare to live in the same place of residence since their birth, childhood or at least before their marriage (at least until 14 years old) and in areas within 50km of a mission.

Each estimation controls for country-round fixed effects. Standard Errors in parentheses are clustered at municipality level. ***, ** and * indicate significance at the 1%, 5 % and 10% levels respectively.

Table 2.11 – Balancing tests with covariates for matching

	Missions		Difference
	Without School	With School	
Coast Distance	1.913	0.771	1.141***
	(0.302)	(0.144)	
Land Cover	115.556	100.968	14.588
	(10.666)	(13.226)	
Pop Density	355.021	467.439	-112.418
	(154.003)	(175.102)	
Night Lights	3.377	4.326	-0.950
	(1.415)	(1.482)	
Rainy Season	145.185	145.141	0.043
	(3.943)	(5.004)	
Dry Season	25.738	39.930	-14.192***
	(2.902)	(1.832)	
Elevation	50.564	48.763	1.801
N	27	31	58

This table reports differences of means between missions with a girls' school and missions without. All data are extracted in 10km buffer around the missions locations. Population densities (2000) are taken from the Center for International Earth Science Information Network. Altitude is taken from SRTM data. Land cover is created by the GlobCover project processed by the European Space Agency (ESA). Night Lights data are from the Defense Meteorological Satellite Program . Dry and wet seasons are rainfall data for both seasons from 1970 to 2000, created by Steve Fick and Robert Hijlans in the World Clim data. Coast Distance is the distance between the mission and the nearest Atlantic coast (in degree). ***, ** and * indicate significance at the 1%, 5 % and 10% levels respectively.

Table 2.12 – Female present-day schooling and missionaries activities

	(1)	(2)	(3)	(4)
Missionaries activities in 1945:				
Female pupils headcounts (ln)	1,095**			
	(508.4)			
Female pupils headcounts		19.92**		
		(9.919)		
Nb. religious girls' schools			2.555**	
			(1,033)	
Religious girls' school (Dummy=1)				4,293**
				(1,931)
Observations	107	107	107	107
R-squared	0.905	0.907	0.903	0.902
Controls	Yes	Yes	Yes	Yes
Contry Fixed Effect	Yes	Yes	Yes	Yes

This table reports OLS estimates of missionaries activities on female participation at school (primary). The unit of observation is the *Communes* (for Benin) and *Préfectures* (for Togo). Data used for female presence at school are from national institutes and are collected at administrative level 2 (called *Préfectures* for Togo and *Communes* for Benin) in 2013 (Togo) and 2014 (Benin). Missionaries activities are gathered for 1945 at local level. "Religious girls' school" is a dummy equal to one if there is at least one religious girls' school in 1945 at this geographical level. All specifications contains following controls (mostly mean at local level): total and density population in 2010, fertility rate per women (from the latest DHS), night lights data, roads and rails lengths, the proportion of land areas used as cropland (land used for the cultivation of food) in the year 2000.

Each estimation controls for country fixed effects. Standard Errors in parentheses are clustered at administrative 2 level. ***, ** and * indicate significance at the 1%, 5 % and 10% levels respectively.

Table 2.13 – Additional results

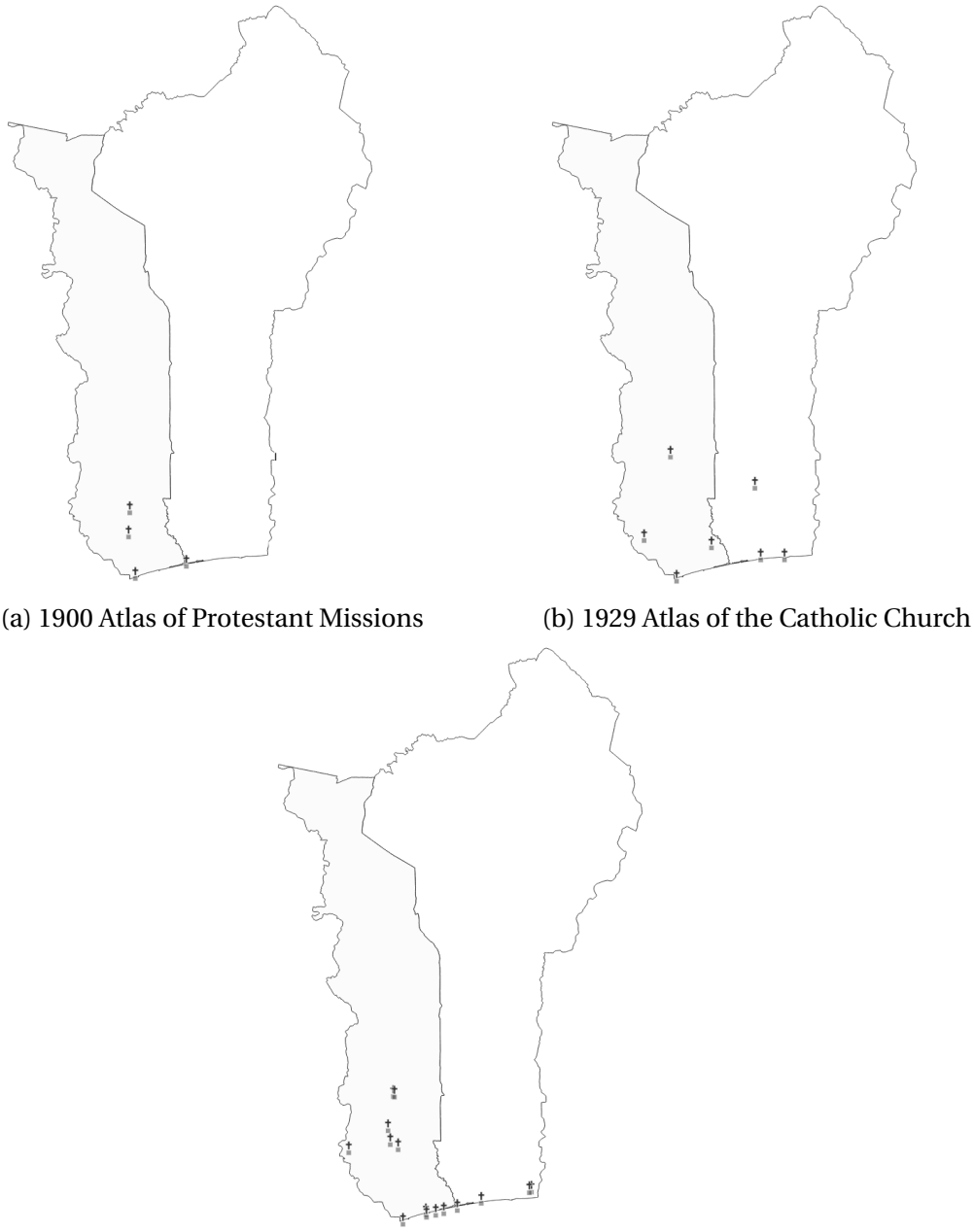
	Married below 18[a]			Married below 15[b]			Polygyny		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Panel A : Before 1925									
ln(Distance_Mission)	0.0225***	0.0235***	0.0209***	0.0119***	0.0135***	0.0145***	-0.000691	-0.00313	-0.00929
	(0.00594)	(0.00626)	(0.00657)	(0.00413)	(0.00419)	(0.00436)	(0.00730)	(0.00747)	(0.00782)
ln(Distance_Ouidah)			-0.000765			0.0222			-0.0793
			(0.0362)			(0.0273)			(0.0581)
Observations	55,742	55,742	55,742	62,026	62,026	62,026	45,488	45,488	45,488
R-squared	0.135	0.137	0.137	0.077	0.079	0.079	0.183	0.185	0.185
Panel B : Before 1945									
ln(Distance_Mission)	0.0197***	0.0203***	0.0175***	0.00984**	0.0126***	0.0128**	0.00637	0.00271	-0.00116
	(0.00482)	(0.00518)	(0.00553)	(0.00428)	(0.00481)	(0.00507)	(0.00576)	(0.00608)	(0.00653)
ln(Distance_Ouidah)			0.0131			0.0196			-0.0787
			(0.0357)			(0.0270)			(0.0583)
Observations	55,742	55,742	55,742	62,026	62,026	62,026	45,488	45,488	45,488
R-squared	0.135	0.137	0.137	0.077	0.079	0.079	0.183	0.185	0.185
Individual Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Birth cohorts	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Municipalities FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Ethnicity Covariates	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Geographical Covariates	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes

All results were estimated using LPM based on data from 1988, 1998, 2014 Togolese DHS and 1996, 2001, 2011, 2017 Beninese DHS using all GPS coordinates to locate their clusters. Sample selection retains only ever-married women for all specifications (thus married women before and after $18^a/15^b$) and women unmarried after $18^a/15^b$. Distance to a religious mission is computed using the GPS coordinates of the respondent's survey cluster and location of the mission recorded in my own dataset. Columns "Married below 18/15" present estimates from LPM with a dependent variable taking the value one if the respondent is married below 18/15 and 0 otherwise. Columns "Polygny" present estimates from LPM with a dependent variable taking the value one if the respondent is in a polygamous household, i.e. with at least another wife married to her husband.

Individual Controls are localisation (dummy urban or rural), age, age squared, household's size, education level and religion dummies. Birth Cohorts are dummies for each generational group. Ethnicity covariates are dummies for the ethnicity of the respondent and the historical ethnic group from Murdock (1964). Geographical Covariates are the distance to the coast, latitude and longitude coordinates, population density, altitude, rainfalls for rainy and dry seasons, and nightlights. Ouidah is the first known place were missionaries implemented their cult in the area (1861).

Each estimation controls for country-round fixed effects. Standard Errors in parentheses are clustered at municipality level. ***, ** and * indicate significance at the 1%, 5 % and 10% levels respectively.

Appendix B. Figures



(a) 1900 Atlas of Protestant Missions

(b) 1929 Atlas of the Catholic Church

(c) 1924 Ethnographic Survey of Africa

Figure 2.3 – Missions locations from Atlases in Togo and Benin

Note: These figures show the missions locations in Togo and Benin according to the different atlases used in the literature. The Atlas from Beach (1903) only reports Protestant missions. The Atlas from Streit (1929) only locates Catholic missions. The Atlas from Roome (1925) combines both Catholic and Protestant missions locations.

Chapter 3

Women's political participation and intrahousehold empowerment: Evidence from the Egyptian Arab Spring

This chapter is co-authored and has been published in the *Journal of Development Economics* in the 2019 Automn, vol. 141.

3.1 Introduction

The "Arab Spring" democratic movement born in Tunisia quickly spread to Egypt. Demonstrations against Mubarak's autocratic regime started in January 2011. They were accompanied by a strong repression causing the death of many demonstrators and feeding popular outrage all over the country. From the very beginning, Egyptian women have played an unprecedented role in these events, marching with men during the uprisings or lobbying actively in the social media (Shalaby, 2016). For both men and women, "bread, liberty and social justice" were the main grievances underlying the 2011 protests, not women's rights specifically (Costello et al., 2015). Yet, the visibility of women amidst the revolutionaries started to challenge the historical stereotypes of a male-dominated public space (Khamis, 2011). The fall of Mubarak in February 2011 was followed by military rule until June 2012, when the Islamist Mohammed Morsi became president. Massive demonstrations through June and July

2013 saw the high mobilization of women against Muslim Brotherhood's rules. This time, the fight was not only for civic and political freedom but also to defend what had been gained in terms of gender equality. A new gender discourse had began to emerge in Egypt, used by El-Sissi during his rise to power (Zaki, 2015).

The present paper questions whether the exposure to the Arab Spring events has also led to a change in women's situation within Egyptian homes. Women's participation to the protest may have altered perceptions about their traditional roles, not only in the public sphere but also within households. We conjecture that these changes, if any, must have been heterogeneous and depended on the intensity of the movement locally. We exploit geographical heterogeneity in protest intensity and women's involvement to conduct a difference-in-difference analysis on various measures of women's empowerment. We draw from the 2008 and 2014 Egyptian Demographic and Health Surveys (DHS). These datasets contain direct empowerment measures, notably women's say regarding decisions on household expenditure, health and socialization.[1] We focus on these outcomes, as well as on a composite index of power and on questions regarding women's tolerance towards domestic violence and the intention to circumcise daughters. We combine the DHS with information on protest intensity at governorate level, proxied by the local proportion of fatalities, injuries and arrests over the period. Our baseline estimation captures the relative time variation in empowerment measures in governorates experiencing a high level of protest intensity. We also suggest estimations using demonstration intensity at a more spatially disaggregated level and a treatment variable directly pertaining to women's participation in the protests.

We find a significant increase in women's final say in the regions most affected by the Arab Spring events. Empowerment has increased by a magnitude of 12% – 19% (depending on modelling choices). We also point to a decline in women's acceptance of domestic violence (by around 6% – 12%) and a reduction in the intention to excise their daughters (by around 8% – 12%). We explore the sensitivity of our results to alternative sets of controls and specifications, accounting for possibly changing structures of the population, propensity score reweighting and fixed effects in a pseudo-panel approach. We show that the intensity of protests was not correlated with the initial

[1] Similar direct measures of intrahousehold bargaining power, often drawn from DHS surveys, have been used to elicit the key determinants of women's empowerment or its impact on child health (Lépine and Strobl, 2013), maternal health care (Bloom et al., 2001) or child labor (Reggio, 2011). Several studies have used them in the case of Egypt, for instance Sadania (2016).

empowerment levels nor with the trend in empowerment prior to the events. Triple difference estimations based on marriage duration reinforce these results. Finally, using discrete groups of increasing intensities of treatment conforms to the intuition of a monotonic relationship between the empowerment effect and the degree of exposure to the protests.

Our favorite interpretation recognizes that women's visibility in the street protests had a strong impact on those who took part or witnessed them in the locality, possibly pervading the private sphere by changing women's (and men's) perception about their role and rights. Nonetheless, we also consider alternative interpretations of our findings that pertain to potential changes in labor market participation, to policy reforms and to demographic changes (migration, sex ratios). We suggest that they are, at best, minor mediating effects. We end the paper by discussing the implications of our results, their limits and possible extensions for future research.

3.2 Literature and contribution

This paper relates to recent studies on the way women's political representation can weaken stereotypes about gender roles. Mechanisms leading to these changes may pertain to an increasing number of women entering male-dominated areas, hence reducing statistical discrimination against women – or to just a few iconic women playing a role model that may change behavior. This literature shows that increased political representation of women improves voters' opinion about female leaders (Beaman et al., 2009), aspirations regarding girls' education and participation to household chores (Beaman et al., 2012), inspiration for women entrepreneurs (Ghani et al., 2014) or women's confidence to report sex crimes (Iyer et al., 2012). Noticeably, the bulk of this literature focuses on electoral quotas (reserved seats in parliament or more decentralized councils), which may be specific and sometimes ineffective,[2] while few studies look at the impact of women's electoral victory on women's subsequent political participation (Bhalotra et al., 2017). In the present paper, we exploit the increased visibility of Egyptian women following an unprecedent surge in political participation at every stages of the Arab Spring revolution (we will show that geographical variation in women's activism is not driven by omitted variables

[2] Affirmative action may have disruptive effects (Deininger et al., 2015), may backlash against women (Gagliarducci and Paserman, 2011), or may just not eliminate negative stereotypes (Coate and Loury, 1993).

that would explain an otherwise change in intrahousehold empowerment).

This literature on female political participation rarely considers the impact of political activism on the domestic sphere. Noteworthy, a parallel literature focuses on how 'imported norms' and counterstereotypes affect intrahousehold decisions. Jensen and Oster (2009) shows for example that the exposure to strong women characters on television increases Indian women's decision power and intolerance for domestic violence. La Ferrara et al. (2012) also demonstrate that exposure to soap operas, where the majority of female characters have no or one child, have influenced fertility choice in Brazil. Our contribution lies at the interface between these literatures, as we document how the sudden participation of women to a male-dominated public space affects gender norms in the household. Few quantitative studies have examined the relationship between women's socioeconomic or household empowerment and political outcomes. They point to a positive association - and a likely mutually reinforcing process - between women's political participation and various measures of empowerment like the ability to leave the home and to socialize with friends (Chhibber, 2002), the access to economic networks (Prillaman, 2016) and household agency (Bleck and Michelitch, 2018).

More generally, this paper contributes to the understanding of women's autonomy and its determinants in the context of developing countries (Duflo, 2012) and more particularly of MENA countries (OECD, 2017; Suad and Slyomovics, 2001). Using direct empowerment measures as we do, several studies have shed light on key determinants of women's position in the household, including women's labor market status (Anderson and Eswaran, 2009), gender norms (Mabsout and van Staveren, 2010), household structure (Debnath, 2015) or asset ownership (Allendorf, 2007; Mishra and Sam, 2016). Particularly in the case of Egypt, recent studies have focused on the impact of educational programs on women in conservative regions (Elsayed and Roushdy, 2017; Sieverding and Elbadawy, 2016). Sadania (2016) connects women's labor market participation and their say within Egyptian households, showing that the empowering effect of employment depends on the type of occupation. A recent study is especially relevant to us: El-Mallakh et al. (2018) point to the effect of the Arab Spring on women's employment using variation in protest intensity. We will liaise with their results hereafter.

3.3 Data and Empirical approach

3.3.1 Individual data and empowerment

The Egyptian DHS. Our main empirical analysis is performed using the Egyptian Demographic and Health Surveys (DHS).[3] DHS are cross-sectional surveys containing a wealth of information about household characteristics, health and living conditions as well as specific questions about decision-making in the family. We focus on the 2008 and 2014 waves, two years surrounding the Arab Spring events. In 2008, and up until 2011, the political situation in Egypt was stable and no major event or change in the social or political context could have affected women's empowerment. For the end period, the DHS was collected in April-May 2014, which corresponds to the end of the Arab Spring (election of El-Sissi in May 2014).

Selection. We restrict our sample to married women aged 15 to 49 years old in monogamous households. For our main analysis, we exclude households from border governorates (Red Sea, Matrouh, New Valley, North Sinai and South Sinai). Our final sample is composed of 27,783 women over 2008 and 2014. In order to check the parallel trend assumption of our difference-in-difference approach, we will make use of the 2000 wave: placebo estimations will rely on the pooled 2000 and 2008 waves (21,897 observations after applying the same selection criteria).[4]

Empowerment. Our main outcome consists of direct empowerment measures drawn from the DHS. We select variables about intrahousehold decision-making regarding the woman's health, her ability to visit relatives and important household expenditure.[5] After normalization to positive values, each index gives a ternary outcome: 2 if

[3] Note that we will also rely on several other datasets for the sake of analyzing the robustness of our results or the underlying mechanisms: the Survey of Young People in Egypt (SYPE), the Egypt Labor Market Panel Survey (ELMPS), the Egyptian Labor Force Survey (LFS) and the Egypt Household International Migration Survey (Egypt-HIMS). They will be described as we go through.

[4] EDHS is also available in 2005 but we use 2000-2008 to obtain longer past trends. Note also that 2005 was a singular year because of the presidential election, social unrest and Mubarak's repression against the Kefaya movement (Sika, 2012) (which included specific violence against women in public places in order to intimidate women from participating in the protests). The year 2000 was stable from a political and societal point of view, hence the choice of this non-event year for parallel trend verifications.

[5] In the light of the Egyptian patriarchy context, these dimensions seem relevant and have been used in previous studies (see for instance Sadania 2016). This is less the case of other aspects such as decisions upon daily purchase and cooking, which do not really capture women's autonomy as they could simply reflect delegation of responsibility on these specific tasks. Women's control over their own

the woman alone makes the decision, 1 if the decision is joint and 0 if the husband alone has the final say. We focus on a summary index of empowerment based on these questions. To aggregate the three dimensions, we rely on a Burt Multiple Correspondence Analysis (MCA), in a similar way as in Lépine and Strobl (2013). This index is normalized on a scale from 0 (no decision power) to 100 (full decision power). In robustness checks, we will consider a composite index including women's work as a fourth dimension, as well as each dimension separately (ternary or binary versions of the indices). Statistics for all these power measures are reported in Table 3.6 in the Appendix. We also consider two additional outcomes related to women's attitude towards gender roles, autonomy and well-being. The first one is drawn from a question on whether a husband is right to hit or beat his wife in diverse situations.[6] We construct a dummy equal to 1 if the women's attitude shows tolerance towards at least one of these situations and 0 otherwise. The other is a dummy taking the value 1 if the wife intends to circumcise her daughters and 0 otherwise.

3.3.2 Arab Spring Exposure: data and treatment

Summary of the Events. To locate the following discussion on protest intensity, we first review the four phases of the Egyptian Arab Spring. The first one corresponds to the 18 days of the revolutionary movement that overthrew Hosni Mubarak (January 25 2011 to February 11 2011) but also caused many casualties. This event followed the demonstrations in Tunisia in December 2010, which created an unpredictable shock wave across MENA countries. Mubarak's fall was followed by a period of military rule: the Supreme Council of the Armed Forces was supposed to ensure the democratic transition but was also responsible for many misdemeanors on protesters. In June 30 2012, the candidate of the islamist Muslim Brotherhood movement, Mohammed Morsi, was elected president. Governmental actions were complicated by the international situation and electors urged government to resolve economic and security problems. At the end of June 2013, a massive movement called for Morsi's resignation, leading to his arrest and to the violent repression of islamists and Morsi's partisans under the second military regime, led by Interim President Adly Mansour. The militaries stayed in power until the election of president El-Sissi in June 2014, followed by

earnings, available in some years, is of limited information given the low labor market participation rate. Instead, we simply include women's work directly as a fourth dimension in our composite index in robustness checks.

[6] Unfortunately, the 2008 DHS wave does not contain any information regarding the actual experience of domestic violence.

a period of economic and social stability until today.

Incidents Data. Our main source of variation is the intensity of protests at local levels, proxied by the proportion of incidents during the Arab Spring events. We draw this measure from the Egyptian Revolution Database, collected by the Egyptian Center for Economic and Social Rights over the period January 2011 - December 2014. This dataset gathers information on the number of people arrested, injured and killed over the period.[7] We assume that our potential effect is driven by the conflicts occurring over the whole period. This includes the 18 days of the revolution (January 25 2011 to February 11 2011), the first military council (February 11 2011 to June 30 2012), the islamist regime of Morsi (June 30 2012 to July 3 2013) and the second military regime (4 July 2013 to El-Sissi's election).[8] We will check the sensitivity of our results to the timing, focusing alternatively on incidents occurring only during the first phases of the revolution. The total number of casualties (injuries, arrests) between 2011 and 2014 reaches 5,221 (44,453, 45,885) cases.

Treatment based on Incidents. We sum these incidents at governorate levels (baseline) and divide the aggregate by the population size of the governorate using Census information to obtain a measure of incidents per inhabitant. This incidents proportion can be seen as a proxy for the local conflict intensity and for the proportion of people, notably women, involved in the local demonstrations – recall that the participation of women was historically high at every stage of the process.[9] Using the ranking of governorates along this measure, we define our treatment group as the set of governorates with above-median protest intensity. We will address the sensitivity of our results to alternative assumptions. The choice of governorates as the baseline perimeter is motivated by the fact that people did not necessarily demonstrate in their district. This is especially the case for the citizens of large cities (like those of

[7] It was recorded as comprehensively as possible on the basis of press releases, human rights sources, the Student Observatory and the Freedom of Thought and Expression Foundation. It can be retrieved from Wiki Thawra, an independent website dedicated to documenting all the incidents since the onset of the Egyptian Arab Spring (see https://wikithawra.wordpress.com, in Arabic).

[8] In a similar vein, El-Mallakh et al. (2018) use the number of fatalities as a proxy for protest intensity, yet they focus on the first phase of the revolution including the early demonstrations and the first military regime (2011-12). In a recent paper, Giesing and Musić (2019) also exploit the same database to measure the impact of protests intensity on education, health expenditures and savings.

[9] Simple calculations based on the SYPE data (described hereafter) show that 1.5% of interviewed women have participated to the protest versus 13.2% of the men, i.e. one woman for 9 men on average. This may seem modest but this is far more than in previous eras during which women were never (or very marginally) seen in demonstrations.

Cairo, who converged to Tahrir square). However, we will provide sensitivity analysis using more disaggregated perimeters. Note that aggregating incidents as different as fatalities, injuries and arrests in one score seems an arbitrary way to grasp the extent of the demonstrations. In fact, Figure 3.1 actually shows that using each measure separately leads to a very similar grouping of treated and controls.[10]

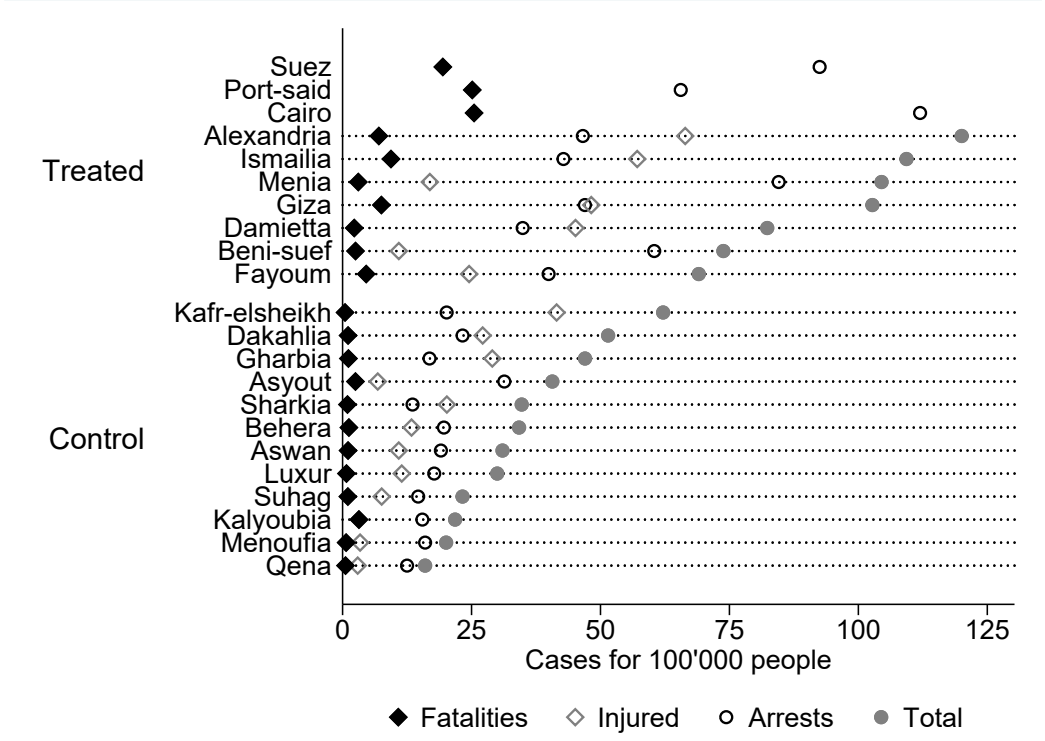


Figure 3.1 – Protest Intensity: incidents rates by governorate
Note: Authors' calculations using the Egyptian Revolution Database from Wiki Thrawa. Governorates ranked according to Total # incidents. Injured and Total are above 125 for the top 3 governorates.

Alternative Treatment based on Women's Participation. Our measure of protest intensity is based on a comprehensive recording of all incidents. Yet, this is only a proxy for the magnitude of the protests in general and of women's participation in particular. As an alternative treatment, we construct a governorate-level measure of women's participation in the Arab Spring protests. We make use of the 2014 Survey of Young People in Egypt (SYPE), which contains information about 10,000 individuals

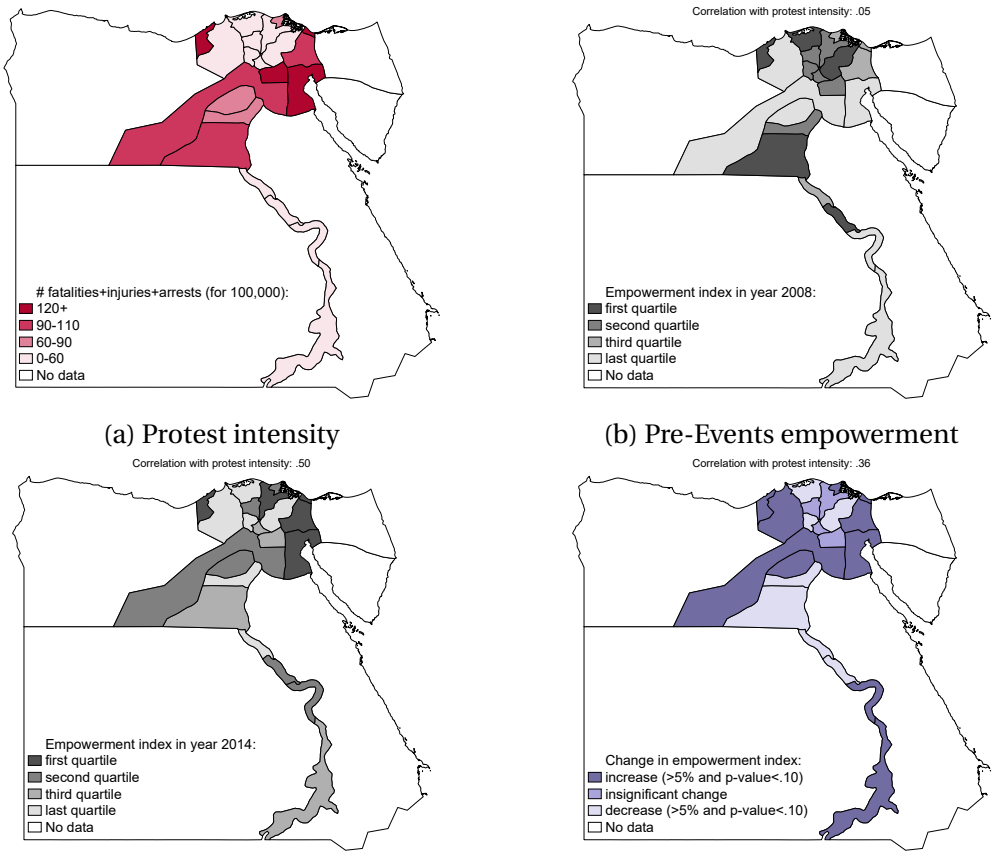
[10] Arrests alone lead exactly to the same group of treated governorates, while this is almost the case for fatalities and injuries (reranking concerns only one and two governorates respectively).

aged 18-35 and living in non-border governorates. Individuals were retrospectively asked about their personal experience of taking part in the Arab Spring events. We construct a variable equal to 1 for women who participated in at least one of the relevant political activities (provision of support to protesters and participation in any kind of protest or strikes) and 0 otherwise. We use answers by female respondents and the respondent's mother in order to account for a broader population than the youth (note however that the 18-35 represent 70% of the total population according to Census data). We calculate an average score by governorate, deflated by the governorate population, and take the above-median threshold to defined treated regions. This approach has its own drawbacks, notably the fact that it relies on survey data (which is less representative) and possibly suffers from recall bias.[11] Nonetheless, this is an interesting alternative measure to check the sensitivity of our result. The most important fact is that it correlates much with our incidents measure: the treated regions overlap at 70% across the two rankings.

The Geography of Protests and Empowerment. We use regional variation in protest intensity as a potential variation in the exposure to women's involvement in the revolution. For this reason, it is interesting to provide descriptive statistics in the form of the geographical dispersion of the treatment intensity, as can be found in the first graph of Figure 3.2. We distinguish four groups: three different intensities of treatment among the 10 most exposed governorates (60-90, 90-120 and 120+) and the low-incident group (0-60). The second graph shows the spatial dispersion in our main empowerment measure prior to the Arab Spring events (the composite index based on decision power regarding health, socialization and purchases, drawn from the DHS and averaged at governorate level). We check whether strong protests took place in the most advanced locations in terms of gender equity. We actually do not observe any particular association of that sort: the cross-governorate correlation between protest intensity (Figure 3.2a) and the 2008 empowerment score (Figure 3.2b) is only .05. Hence, a rise in women's empowerment in regions most affected by the events may not be interpreted just as reflecting a fundamental heterogeneity in the initial position of women across regions of Egypt.

Arguably, there is a correlation between protest intensity and other dimensions in-

[11] There could be reverse causality between self-reported protest participation and final say if we directly used this micro data. This is less of a problem here since we aggregate this information to construct and impute governorate-level treatment intensity in the DHS.



(a) Protest intensity

(b) Pre-Events empowerment

(c) Post-Events empowerment

(d) Change in empowerment

Figure 3.2 – Geography of Arab Spring Protests and women's empowerment in Egypt
Note: Authors' calculations using the Egyptian Revolution Database from Wiki Thrawa and the 2008/2014 Egyptians DHS. Empowerment measure is built from MCA procedure as explained in the Section 3.3.1.

cluding urbanization and education. Yet it does not necessarily contradict the lack of correlation with pre-event empowerment. First, being urban is not a marker of women's empowerment in the Egyptian context. Urbanization has led to the existence of huge urban or suburban areas populated by low-educated households, which are not necessarily different from rural households in terms of gender norms.[12] Moreover, only 60% of the treated are urban. The rest lives in rural zones close to the urban areas where the action was taking place - they have possibly taken part to local protests in nearby cities or been influenced by them.[13] Second, the educational gap between treated and control groups appears to be relevant only at the extreme education levels

[12]The coefficient of a urban dummy is not significant in our empowerment estimations, whatever the specification.

[13]Heterogeneous effects will actually show a significant impact of the protests for both urban and rural households.

('no education' and 'higher education' levels, see Table 3.6). This means that higher schooling in treated regions coincides with (i) a higher rate of people escaping from illiteracy, which is not per se a guarantee of significant moves toward gender balance, and (ii) more people holding a higher degree, which is anyway a too small group to embody the effect that we characterize in our estimations.[14] Finally, and more generally, there is a great diversity of norms even within conservative regions of Upper Egypt (Ibrahim and Wassef, 2001). Several studies explain that concerns for democracy and gender equity are relatively uncorrelated from one another (Kostenko et al., 2016).

The Figure 3.2c depicts the situation in 2014, i.e. after the events. The correlation between protest intensity and empowerment shifts goes up to .50. The last graph shows the change in empowerment over the period. The improvement in women's bargaining position following the Arab Spring was not generalized: the change in empowerment is insignificant overall (p-value of .69) and shows a significant increase in only 10 of the governorates (Alexandria, Aswan, Behera, Damietta, Fayoum, Giza, Ismailia, Post Said, Qena and Suez). We observe a .36 correlation between protest intensity (Figure 3.2a) and empowerment variation (Figure 3.2d). There is no one-to-one correspondence in ranks between treated regions and regions experiencing improvements in women's empowerment, but out of the 10 governorates with a high-protest intensity, 8 were subject to an increase in empowerment (7 of them with a rise larger than > 5% and significant according to a t-test). The rest of the paper will attempt to check if this result holds when controlling for households' characteristics in micro regressions.

Raw Difference-in-Difference. Before moving to the empirical approach, we provide a few additional descriptive elements. As we saw, empowerment has remained stable on average. Using our main composite index, we find a score of 32.86 in 2008 and 32.71 in 2014 (a change of -0.4%, not statistically different from zero). Using protest intensity, we see that empowerment has dramatically increased in the treated group (from 32.39 to 34.75, i.e. +7.3%) while it has decreased in the control group (from 33.22 to 31.00, i.e. -6.7%). These trends by treatment group are reported in the Figure 3.3a. The empowerment decline in the untreated population could reflect the regressive influence of conservative forces which reemerged over the period and

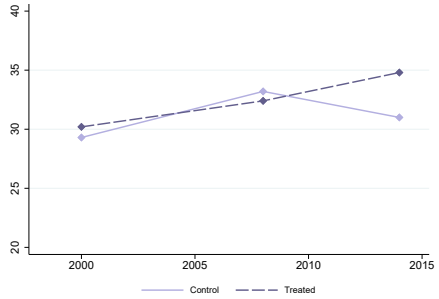
[14] The coefficient of higher education in empowerment estimations multiplied by the gap in higher education rates (Table 3.6) gives a contribution of only 0.5% of the average empowerment index in the pre-Arab Spring period.

implied a backlash against women (notably during the period of Islamist leadership, cf. Manea (2014)). The raw difference-in-difference calculation yields an increase of 4.59 points. We obtain a consistently similar estimate when using our alternative treatment variable based on women's participation to protests. If we compare these effects to the base-period control group average, we conclude that households located in the most exposed governorates have seen women's empowerment increase by around 14% relatively to the other regions before the Arab Spring. We will see that this magnitude is very close to what we obtain using micro regressions.

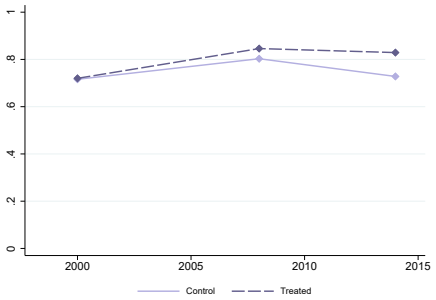
The rest of Figure 3.3 shows empowerment trends for other measures including the specific 'final say' questions (health, social life, main household purchases) and women's views about domestic violence and girls' excision. All are binary outcomes for the ease of interpretation (final say outcomes are coded as 1 if the woman decides alone or with her husband, 0 if the husband decides alone). A first observation is that the overall decline in empowerment for the control group is observed in some measures, typically the final say indices with a high initial level (health, social life), but not all. In particular, decision power regarding household purchases started at a lower level in 2008 and has increased in both treated and untreated regions, yet faster among the former (+34% versus +13%). Tolerance for domestic violence has actually declined in both groups but the decline was more pronounced among the treated (-27% versus -10%). Hence, the pattern of what has happened overall during the Arab Spring era – as captured by the control group – is relatively composite and it is difficult to conclude about an overall regression in gender rights for those not exposed to the protests. Most importantly, Figure 3.3 shows that all the indices go in the same direction in terms of *relative* trends between treated and control groups. Compared to the gap between groups in 2008 – which was quasi null for final say indices and at the advantage of the treated for violence and excision outcomes – the situation in 2014 corresponds to a relative gain of around 10 percentage points for the treated. Given different initial outcome levels, the relative gain has been larger for the final say over purchases (+19%) than for health or socialization (+10% and +7%). Double difference estimations shall refine these raw measures.

3.3.3 Empirical approach

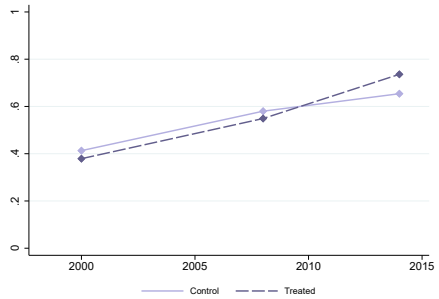
Difference-in-Difference Estimations. We denote Y_i the main outcome, namely the index of empowerment for a woman in household i, $TREAT_i$ the treatment variable



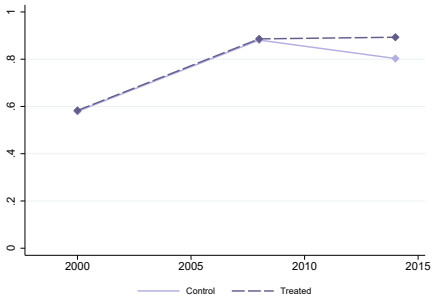
(a) Final say: composite index (MCA on ternary answers, scale 0-100)



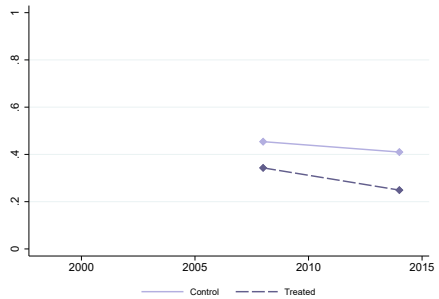
(b) Final say: Social Life (binary)



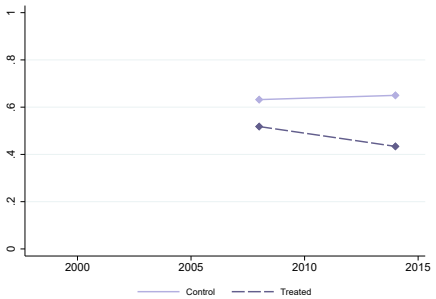
(c) Final say: Main Purchases (binary)



(d) Final say: Health (binary)



(e) Tolerate domestic violence (binary)



(f) Agree with daughters' excision (binary)

Figure 3.3 – Trends in empowerment measures

Note: These graphs are based on empowerment measures drawn from the Egyptian DHS for the years 2000, 2008 and 2014 (see Section 3.3.1). Data on domestic violence and excision are not available for 2000. The binary 'final say' questions are coded as 1 if the woman decides or both spouses decide, 0 if the man decides alone.

equal to 1 if the household is located in a highly exposed governorate and 0 otherwise, $POST_i$ the time dummy equal to 1 for the post-Arab Spring period (year 2014) and 0 for the base period (2008). Pooling the 2008 and 2014 waves of the Egyptian DHS, we estimate our main difference-in-difference model as follows:

$$Y_i = \alpha + \beta POST_i \cdot TREAT_i + \gamma POST_i + \delta TREAT_i + \eta X_i + \phi X_i \cdot POST_i + \epsilon_i. \quad (3.1)$$

The coefficient β on the interaction term is the difference-in-difference estimator, representing the effect of living in a highly exposed governorate after the events. The coefficient γ on $POST_i$ captures the time trend in the outcome, including the overall effect of the Arab Spring that is common to all the governorates, as identified on the non-treated. The coefficient δ on the treatment variable alone picks the average (time-invariant) difference between the two groups of governorates. Covariates X_i may improve the precision of the model but also control for the difference in observables between treated and control groups. They include individual characteristics (women's and men's age and education, husband employment status) as well as household information (wealth, urban dummy, number of children and religion, i.e. a dummy equal to 1 for Christian, 0 for Muslim) . In sensitivity checks, we add birth cohorts and municipality dummies, as well as interactions of $POST_i$ and X_i.

Identification Issues. In the context of a double difference analysis, treated and control groups are not randomly chosen, and may be very different. Table 3.6 in the Appendix indeed shows that the most exposed governorates are significantly richer, more urban and more educated than other governorates. However, we have explained above that initial conditions do little to explain pre-existing differences in women's conditions. Moreover, we control for structural differences with the set of variables X_i and, since controlling for these characteristics in a linear way may be too restrictive, we also suggest augmenting estimations with propensity score reweighting. To guarantee that the control group represents a valid counterfactual for the trend in empowerment over the few years under study, we additionally control for group-specific trends in observables. Indeed, diverging trends in empowerment between groups in the absence of treatment may be due to different trends in observables characteristics, which we account for with the interaction $POST_i \times X_i$.

We must also assume that there is no time-varying unobservables that would affect the outcome trends of the two groups differently. A minimum requirement in this respect will consist in checking whether the outcomes of the two groups show parallel trend prior to the period under study, namely between 2000 and 2008. This point also relates to the central question of a potential endogeneity of the treatment (Bertrand

et al., 2004; Besley and Case, 2000). In our case, it would be on account of omitted variables that codeterminate a high intensity of protest and a rise in women's empowerment. While we cannot completely rule out the possibility of counfounding geographical heterogeneity of that sort, we will provide numerous checks that tend to indicate that the intensity of protest is relatively random - or at least uncorrelated with unobservable drivers of female empowerment during the events. We assemble four pieces of suggestive evidence. First, when comparing theFigure 3.2a and Figure 3.2b, we have concluded that fierce conflicts did not specifically occur in places where initial empowerment levels were particularly high (i.e. places with a higher capacity of change) or low (places with a higher margin of improvement). Previous discussions convey that observed households in treated regions are not necessarily the young, urban and educated couples that might have triggered the protests. Second, a successful test of the parallel trends will indicate that the treated regions were not necessarily having different empowerment trajectories compared to more other regions in the years prior to the events. Third, we will carry out a triple-difference analysis using the duration in marriage to define an extra control group. Finally, we provide an extensive sensitivity analysis showing that the effect is stable when using alternative spatial variation or when focusing on the early events, i.e. those for which the protests were not specifically directed towards women's rights.

3.4 Results

3.4.1 Main Results

Main Estimations. In Table 3.1, we present our main results based on the difference-in-difference estimator using the composite index of empowerment based on ternary final say questions.[15] The upper panel shows baseline estimates of the treatment effect β, i.e. the coefficient of $Post \times Treat$. We obtain a very significant effect of around 4-5 points across the different models presented in columns 1-7. This is a substantial effect. In relative terms (indicated as 'relative effect'), it represents an increase of 12%-15% in empowerment for women in the exposed governorates relatively to other regions prior to the Arab Spring. Another way to interpret this magnitude is to compare

[15]Detailed estimation results are available from the authors. The main significant effects go as follows: education has a clear positive effect on empowerment, increasing with education categories; age and the intermediate/older birth cohorts also have positive effects as well as the husband employment status.

it to the estimate of other relevant correlates of empowerment. In particular, exposure to the protest has an effect of the same order as holding a higher education degree (relative to having no education) or 1.5 times the effect of having secondary education (relative to no education).

An important observation of Table 3.1 is that estimates are remarkably stable throughout the different models. Model 1 is a minimalist version controlling for the basic set of variables X_i only. Model 2 adds birth cohorts, which would capture specific cohort effects in addition to age. Results are hardly changed. Model 3 controls for municipality fixed effects, which leads to slightly (but not significantly) larger estimates. In model 4, we introduce time trends in observables characteristics: again, we do not see much variation in the size of the effect.

Table 3.1 – Effect of Arab Spring Events on women's empowerment: Baseline

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Period of interest: 2008-2014							
$Post \times Treat$	4.578***	4.550***	4.947***	4.181***	4.208***	3.999***	4.181**
	(0.997)	(0.996)	(1.034)	(1.058)	(0.995)	(0.988)	(1.989)
Relative effect[a]	**0.138**	**0.137**	**0.149**	**0.126**	**0.127**	**0.120**	**0.126**
Observations	27,783	27,782	27,782	27,782	27,782	27,782	27,782
R-squared	0.016	0.017	0.050	0.051	0.052	0.053	0.051
Placebo: 2000-2008							
$Post \times Treat$	-1.015	-1.014	-1.237	-0.333	-0.788	-0.437	-0.333
	(0.985)	(0.985)	(1.019)	(0.997)	(0.998)	(1.006)	(1.930)
Relative effect[a]	0.035	0.035	0.042	0.011	0.027	0.015	0.011
Observations	21,897	21,897	21,897	21,897	21,897	21,897	21,897
R-squared	0.022	0.022	0.080	0.083	0.082	0.085	0.083
Individual Controls X_i	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Birth cohorts	No	Yes	Yes	Yes	Yes	Yes	Yes
Municipalities	No	No	Yes	Yes	Yes	Yes	Yes
$POST_i \times X_i$	No	No	No	Yes	No	Yes	Yes
PS reweighting	No	No	No	No	Yes	Yes	No
Cluster	Municip.	Municip.	Municip.	Municip.	Municip.	Municip.	Govern.

Linear estimations based on 2000, 2008 and 2014 DHS. Estimation of woman's empowerment (ternary composite index) on the treatment, i.e. above-median protest intensity (based on the Egyptian Revolution database and defined as the governorate-level proportion of fatalities, injuries and arrests). We use different specifications: 1- baseline covariates including wealth, urban, education of the wife, age of wife and husband, husband in work, religion; 2-adding birth cohorts; 3-adding municipality dummies; 4-adding interactions between POST and the controls; 5 & 6- using propensity score reweighting. Standard errors in parentheses are clustered at municipality level. ***, ** and * indicate significance at the 1%, 5% and 10% levels respectively.
[a] Effect relative to the pre-event control group mean empowerment (33.2 in 2008, 29.3 in 2000), in %.

We have accounted for observed differences between more or less exposed governorates using a linear specification of characteristics X. It is nonetheless possible to use matching techniques to relax the linearity assumption and to verify (or impose)

common support. With a binary treatment variable, the simplest approach consists in estimating the propensity of being treated and using the inverse propensity score (PS) to reweight the data (Hirano et al., 2003). Denoting $p_i = P(TREAT_i = 1)$ as the estimated probability of being in a region of high protest intensity for observation i, based on the set of variables X, we use the weights $\frac{1}{1-p_i}$ and $\frac{1}{p_i}$ for non-treated and treated observations respectively.[16] According to model 5, results appears to be robust to the addition of these weights. The same is true in model 6 when time trends in X_i are also included. This means that a linear form of X_i already managed to control relatively well for differences in characteristics between treated and control groups.

Regional Effects and Standard Error Clustering. In models 1-6, we cluster standard errors at the municipality level. In model 7, we alternatively cluster at governorate level using a 'wild bootstrap' approach. The standard error increases as expected but the effect is still significant at the 5% level. More sensitivity checks are provided in Table 3.7 in the Appendix. We compare our baseline (column 1) to a similar regression including governorate fixed effect (column 2): the effect decreases a little (-10%) but is still significant at the 1% level. Then, we cluster at governorate level directly (column 3) or, because the small number of governorates (22) is likely to create a high variability in the estimates, using bootstrapped standard errors. Results show little sensitivity to the number of replications, namely 800 or 1000 replications (columns 4 and 5). The main check based on 'wild bootstrap' is suggested by Cameron et al. (2008) and relies on the implementation procedure by Roodman et al. 2018.

Placebo Checks. Our placebo estimations aim at checking whether the parallel trend assumption holds, i.e. whether treated and control governorates had similar empowerment trends before the Arab Spring. We do so by replicating our estimations on the 2000 and 2008 DHS waves, as explained in the data section.[17] Thus, $POST_i$ takes a value 1 for women observed in 2008 and 0 for those of 2000. The lower panel in Table 3.1 reports the placebo estimates of β for all the specifications. None of them are statistically different from zero: living in the areas that would later be highly exposed to the Arab Spring protests did not imply a specific trend in terms of woman's intra-household bargaining power.

[16] We have checked that the mean of each covariate in X, as well as the mean propensity score, is approximately equal across the treatment and control groups once these weights are used.

[17] Note that religion is not included in this estimation since it was not available in the 2000 DHS.

3.4.2 Sensitivity analyses

We now proceed with a series of robustness checks for our difference-in-difference estimations. They are based on the most complete linear model (4th model of Table 3.1). Yet, the following results barely change when using other specifications (including PS reweighting).

Alternative Sample Selections. Ideally, we would like to follow the same women over time to ensure the stability of the sample and account for individual effects. In the absence of panel data, we first suggest an artificial 'aging' of the sample aimed to focus on the same cohort distribution. We simply retain married women aged 15-43 years old in 2008 and 21-49 years old in 2014. The final sample is only 10% smaller compared to our baseline selection. Results in Table 3.2 indicate that the magnitude of the effect (column 1) is similar to the main estimation, only slightly but not significantly larger. In the same vein, a second check explicitly addresses the question of marital separation. It may well be the case that the empowerment effect highlighted in this paper also caused an increase in divorce and separation. Using the Egyptian Labor Force Survey (LFS), we find that marriage rates have decreased regularly over the 2011-14 period, from 64.18% to 63.80%, and more so in highly exposed governorates (a raw difference-in-difference on marriage rates gives an insignificant $-.78$). This change is probably too small to affect our results. Nonetheless, we replicate our estimations on a sample with women married for at least 4 years, so that those who potentially divorced and remarried during the Arab Spring are ignored. The effect is a little smaller but very close to the baseline (column 2). Combining both adjustments again leads to similar results (column 3). Our conclusion are also unaffected by outliers related to age, as shown by the estimate obtained when trimming the age selection (i.e. selecting women aged 20-40, column 4).

Pseudo-Panel. We also suggest a pseudo-panel approach following Devereux (2004). To some extent, this approach averages up individual unobservables that may act as confounders. We define cells based on 22 governorates, 3 birth cohorts and 2 locations (urban/rural).[18] We replicate our estimations using the mean values of all the variables in the model, weighting estimations by cell size and including a cell fixed effect. The

[18]We impose a minimum number of observations (at least 50 per cell) which leads us to discard some cells, i.e. we retain 114 out of the 136 initial cells.

pseudo-panel difference-in-difference estimate is close to the baseline, slightly larger but not significantly so (column 5).

Interview Conditions. As noted by Lépine and Strobl (2013), the main issue when using direct proxies for empowerment is the measurement error in women's bargaining power that could result from an attenuation bias due to the presence of husbands or other men during the interview. We have performed several checks and did not find very large differences in this respect. In particular, we have replicated our estimations on a subsample excluding women interviewed in the presence of their husbands. The estimate hardly changes compared to the baseline (column 6).[19] We also exclude women interviewed in the presence of any relative: the empowerment effect increases a little but not significantly (column 7).[20]

Table 3.2 – Effect of Arab Spring Events on women's empowerment: Alternative samples

	Same cohort[b]	No divorce[c]	Same cohort & No divorce[b,c]	20-40 years[d]	Pseudo-panel[e]	Interview: no Husband[f]	Interview: alone[g]	Including border governorates[h]
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
$Post \times Treat$	4.513***	3.895***	4.234***	4.660***	4.965***	4.179***	4.468***	4.652***
	(1.055)	(1.080)	(1.082)	(1.092)	(1.209)	(1.085)	(1.158)	(1.039)
Relative effect[a]	**0.136**	**0.117**	**0.127**	**0.146**	**0.149**	**0.126**	**0.133**	**0.145**
Observations	25,095	24,261	22,157	20,311	228	26,018	20,909	29,509
R-squared	0.050	0.049	0.049	0.056	0.208	0.052	0.061	0.058

Linear estimations based on 2008 and 2014 DHS. Estimation of woman's empowerment (ternary composite index) on the treatment, i.e. above-median protest intensity (based on the Egyptian Revolution database and defined as the governorate-level proportion of fatalities, injuries and arrests). We use the specification of model 4 in Table 3.1 (controls include wealth, urban, education of the wife, age of wife and husband, husband in work, religion, birth cohort, municipality dummies, interactions between POST and the controls). Standard errors in parentheses are clustered at the municipality level. ***, ** and * indicate significance at the 1%, 5% and 10% levels respectively.
[a] Effect relative to the pre-event control group mean empowerment, in %.
[b] Same cohort: women aged 15-43 in 2008 and aged 21-49 in 2014.
[c] No Divorce: women married for at least 4 years to avoid divorces or new marriages during 2011-14 .
[d] Sub-sample: woman aged between 20 and 40 years old.
[e] Pseudo-panel: estimations on 114 cells x 2 year (3 cohort x 22 governorate x 2 urban, excluding quasi-empty cells).
[f] Interview without men being present, including the husband.
[g] Interview without anyone else being present.
[h] Including border governorates (Red Sea, Matrouh, New Valley, North Sinai and South Sinai).

Border governorates. We have excluded border governorates from our baseline regressions for several reasons. First, we aimed to focus on a relatively homogenous

[19] In additional estimations, we find that the presence of the husband during interviews is negatively correlated with the degree of autonomy of the wife, especially regarding the final say question on social life. Further work should attempt to disentangle the underlying mechanisms, namely self-censorship and household heterogeneity. Note also that double difference estimations using the presence of husbands as the outcome show no significant effect of the treatment.

[20] Note that the presence of other people during the interview is recorded specifically for the question on domestic violence, which comes just after final say questions.

population (border regions are inhabited by Bedouins tribes with nomadic traditions, whose reactions to the Arab Spring events may be very different from that of the population around the Nile Valley). Second, these regions are not densely populated (2% of the Egyptian population lived in these areas according to the last Census). Third, given the geographical size of these regions, and its small nomadic population, we have some doubts on the representativeness of the DHS surveys for these governorates. Finally, these governorates are close to others types of conflicts (for instance the Sinai Peninsula and the nearby Gaza Strip conflict). Nonetheless, we perform some sensitivity analyses with the inclusion of frontier governorates. The relative contribution of these governorates seems marginal as the average effect is barely affected (column 8).[21]

Time Variation in Treatment. We check the sensitivity of our analysis to the time and spatial definition of the treatment group. We start with alternative timings: results hold when focusing on the treatment generated by the early phases of the revolution. In particular, results are consistently close if we exclude from our aggregated measure the incidents that occurred under Mansour's regime (i.e. starting July 2013), as a majority corresponds to the repression against islamists.[22] Results are also consistent if we exclude the protests of June 2013 against Islamist President Morsi, as this period is the beginning of explicit claims in favor of women's right. That is, estimates on the earlier period focus on political movements that, even if correlated with geographical confounders, are not simultaneously related to deep changes in terms of gender equality. As recalled in the introduction, the main grievances at the onset of the Arab Spring were about living standards, civil/political freedom and social justice, not women's rights specifically.

Spatial Variation in Treatment. We consider spatial variation in protest intensity. First, we compare our baseline results to an estimation where we classify regions within governorates as urban or rural (while Cairo and Alexandria are completely urban, for instance, other governorates contain both urban and rural regions). For obvious reasons of visibility and coordination, people have gathered in cities or large

[21] This is consistent with results found in El-Mallakh et al. (2018) and Giesing and Musić (2019), who found little variation due to the exclusion of these governorates.

[22] As a matter of fact, these events are equally interesting as they show the intensity of rejection against the Muslim Brotherhood movement, which had never disapproved the violence experienced by female protesters (and beyond) and had even attempted, under Morsi's regime, to decriminalise female genital mutilation.

towns to demonstrate, yet, as previously discussed, only 60%of the treated in our data are urban. In Table 3.3, heterogeneous effects are compared to the baseline (column 1). These effects are very similar for both urban households (column 2) and rural households (column 3), which indicates that the empowering influence of protests is not a pure urban phenomenon. Next, we suggest a more disaggregated perimeter. We have argued that a person's strict locality is too narrow to capture her potential participation to the events. While this has motivated the choice of governorates, the latter are sometimes very large. The above definitions of urban (or rural) parts of governorates was a first step in this direction. We suggest a more disaggregated spatial variation in treatment by considering a person's municipalitiy (so-called Markaz/Kism) and her relevant border municipalities.[23] The treatment group is defined as households living in extended municipalities that experience above-median protest intensity. Table 3.3 points to a significant effect, yet smaller in magnitude (column 4). The relative effect, i.e. the response relative to control group municipalities prior to the events, is around 8%. Consistently with the analysis at governorate level, it is slightly smaller if we focus on urban households, i.e. 7% (colum 5).

Table 3.3 – Effect of the Arab Spring Events on women's empowerment: Alternative geographic definition of treatment

	Governorate level[b], baseline	Governorate level[b], urban	Governorate level[b], rural	Extended municipality level[c]	Extended municipality level[c], urban
	(1)	(2)	(3)	(4)	(5)
$Post \times Treat$	4.181***	4.064***	4.363***	2.656**	2.276**
	(1.058)	(1.074)	(1.544)	(1.202)	(1.151)
Relative effect [a]	**0.126**	**0.123**	**0.131**	**0.080**	**0.069**
Observations	27,782	11,920	15,888	27,782	27,782
R-squared	0.051	0.060	0.044	0.050	0.049

Linear estimations based on 2008 and 2014 DHS. Estimation of woman's empowerment (ternary composite index) on the treatment, i.e. above-median protest intensity. This intensity is based on the Egyptian Revolution database and defined as the governorate-level (columns 1-3) or municipality-level (column 4) proportion of incidents (fatalities, injuries and arrests). We use the specification of model 4 in Table 3.1 (controls include wealth, urban, education of the wife, age of wife and husband, husband in work, religion, birth cohort, municipality dummies, interactions between POST and the controls). Standard errors in parentheses are clustered at the municipality level. ***, ** and * indicate significance at the 1%, 5% and 10% levels respectively.
[a] Effect relative to the pre-event control group average empowerment, in %.
[b] 22 governorates of Egypt, i.e. excluding border governorates.
[c] Local municipality, i.e. markaz (for rural areas) or kism/aqsam (for urban areas), and relevant border municipalities.

[23] Precisely, to exclude low-populated subdivisions corresponding to vast desert areas, we do not include border Markaz/Kism whose centroid is located at more than a 100km.

3.4.3 Women's political engagement and empowerment in the home

Before considering alternative channels, we develop here the discussion about the most likely mechanism at work: the intensity of protests is associated with women's political activism and a subsequent change in women's empowerment in the home. We complete our analysis with a triple difference analysis and attempt to validate our treatment variable against a more specific measure of women's engagement in the democratic movement.

Interpretation. The variation in protest intensity, and of women's participation to the events, possibly entails different degrees of awareness about gender rights and their pervasive consequences at home. The effect may not even be driven by women alone. Exposure to members of another group creates empathy that can alter social norms (Boisjoly et al., 2006), which might have happened for men and women standing alongside in the demonstrations.[24] Arguably, not all women were on the street, so it may well be the increased consciousness about women's fight, in more exposed regions, that had been able to trigger some progress at home. This mechanism relates to the social psychology literature, which points to the role of such an emotional climate on social sharing (Rimé et al., 2017) as well as on the idea that repression galvanizes action and increases identification with the movement (Ayanian and Tausch, 2016). It also connects to the literature on role models, as extensively discussed in the Section 3.2. Finally, our results support the view that actual demonstrations were what matters for the outcomes under study. Acemoglu et al. (2014) point to the fact that other platforms of exchange like the social media served essentially as a mobilization and coordination device of the protests – yet it was street protests that had the strongest impact on those who took part or witnessed them in the locality, as they were concrete materializations of the conflict.

Heterogeneity and Triple Differences. We have checked that exposed regions did not exhibit specific empowerment levels or trends prior to the events. Still, we cannot completely exclude the role of some unobserved geographical heterogeneity in the upwards empowerment trends of the treated regions (Besley and Case, 2000). We suggest an additional check based on triple difference estimations. While there is no perfect control group for that purpose, we suggest using couples' duration as a

[24] Exposure to conflicts may also increase cooperative behavior (Beekman et al., 2017), egalitarianism (Bauer et al., 2014) or altruism (Voors et al., 2012).

gradual filter in terms of exposure to the protests.[25] Older couples comprise women of 49 years old at most, hence they are not necessarily of an older generation that would be insensitive to cultural changes. We actually check that empowerment is not fixed in this group.[26] This means that these couples could well be affected by unobserved geographical factors that are not controlled for and that could change empowerment during the Arab Spring period. At the same time, we argue that these couples may be less directly involved – or exposed to – local street protests because of familiy duties, a lower internet usage and/or a weaker identification to young female leaders. Thus, the double difference coefficient should capture the role of the region-specific confounding factors while the triple difference should grasp the specific effect of protest exposure. We denote Z a dummy for younger couples. Results are reported in Table 3.4 using alternative thresholds at 20 and 25 years of marriage for sensitivity checks (columns 2 and 4 respectively). $POST \times TREAT$ captures the treatment effect for those less exposed to the protests (older couples Z=0). It is insignificant in both cases. $POST \times TREAT \times Z$ captures the additional treatment effect on those most exposed (younger couples Z=1): we find a significant effect of a similar magnitude as our baseline double-difference estimate.

We provide two additional checks. First, we ask whether we do not reject the validity test for a triple difference, i.e. an insignificant coefficient on $POST \times TREAT$, because of imprecise estimates. In column 1, we report a triple-difference estimation using a pseudo-control group defined as couples married for more than 15 years. This group is partly treated so that the validity check is rejected, but the important observation is that the $POST \times TREAT$ coefficient is not much more precisely estimated than when using the 20-year threshold. Hence, not rejecting the validity test in the latter case is mainly due to a smaller $POST \times TREAT$ coefficient rather than imprecise estimations. Second, we suggest a triple difference estimation where the additional control and treated groups are more balanced (columns 3 and 5). We simply select the younger Z=1 in a proportion very similar to that of the older couples Z=0 (the balance is not perfect due to age indivisibility). The estimated effect is stronger (as expected

[25] Other, possibly more exogenous variation might be used, such as prominent cases of violence against women or of internet interventions of female activists/bloggers. Yet, using precise time variation requires more specific data, and knowledge of the underlying, possibly complex dynamics. Moreover, cyberactivism has been very specific in Egypt, often described as a coordination device for street mobilizations more than a driver of change per se (e.g. Acemoglu et al., 2017).

[26] We find the same upward trends in empowerment as in shorter marriages prior to the events. Note also that no difference in empowerment trends across marriage durations prior to the Arab Spring is a placebo check for the triple difference approach.

given the more contrasted groups) and the precision slightly lower (given the smaller sample), but the precision relative to total sample size is higher due to more balanced groups, and these estimations confirm previous results.

Table 3.4 – Triple Differences of exposure to Arab Spring (T) and younger couples (Z) on women's empowerment

Stronger exposure to treatment Z=1 defined as being a couple of:	Less than 15 years of marriage	Less than 20 years of marriage		Less than 25 years of marriage	
	(1)	(2)	(3)	(4)	(5)
$Post \times Treat \times Z$	3.429***	3.917***	4.715***	3.728**	4.803**
	(0.946)	(1.109)	(1.318)	(1.510)	(1.891)
$Post \times Treat$	2.956**	2.096	1.846	1.751	1.383
	(1.295)	(1.400)	(1.410)	(1.674)	(1.698)
Relative effect [a]	0.103	0.118	0.144	0.112	0.150
% of the sample with Z=0:	0.41	0.26	0.49	0.13	0.47
# obs. with Z=0:	11,507	7,284	7,284	3,659	3,658
Observations	27,782	27,782	14,939	27,782	7,831
R-squared	0.051	0.051	0.060	0.051	0.073

Linear estimations based on 2008 and 2014 DHS. Estimation of woman's empowerment (ternary composite index) on the treatment, i.e. above-median protest intensity (based on the Egyptian Revolution database and defined as the governorate-level proportion of fatalities, injuries and arrests). We use the specification of model 4 in Table 3.1 (controls include wealth, urban, education of the wife, age of wife and husband, husband in work, religion, birth cohort, municipality dummies, interactions between POST and the controls). Z is a dummy variable for younger couple, as indicated. The triple difference estimator $Post \times Treat \times Z$ is the specific effect for those more sensitive to treatment in exposed governorates. Post x Treat is the effect for those less sensitive to treatment in exposed governorates. Standard errors in parentheses are clustered at the municipality level. ***, ** and * indicate significance at the 1%, 5% and 10% levels respectively.

[a] Triple diff. effect relative to the pre-event control group average empowerment, in %.

(1): Pseudo assignment group, because 15 years is to low to characterize only older, less exposed couples among the Z=0.

(3): Similar to (2) but more balanced sample between Z=1 (marriage duration < 6 years) and Z=0 (>20 years).

(5): Similar to (4) but more balanced sample between Z=1 (marriage duration < 3 years) and Z=0 (>25 years).

Alternative Treatment Variable: Women's Protest Participation. The previous results about a demonstration effect on female empowerment have relied on a measure of protests visibility proxied by the local proportion of dramatic incidents. Yet, it is imperfectly correlated with the proportion of demonstrators and, in particular, with that of women. Alternatively, we must use a more direct measure of women's engagement in the protests. In the data section, we have described another survey (SYPE) and the calculation of a population-adjusted measure of women's protests participation. Based on survey data and individual declaration, this measure is more fragile and less representative than the Revolution Database, which offers a comprehensive account of protest intensity around Egypt. At the same time, the former relates more directly to

the mechanism invoked above and hence provides an interesting verification. Table 3.5 compares our baseline (in column 1) with using women's participation in protests as a treatment (in column 2). It turns out that both estimates are of the same order of magnitude. In relative terms, the effect based on women's participation as treatment points to a slightly smaller increase in empowerment (+10.4%) compared to that based on protest intensity (+12.6%). While both treatment measures have their own caveats, their congruence is reassuring and may indicate that they capture closely related dimensions of the relevant exposure/treatment. The effect hardly changes due to the presence of male relatives during the interview (relative effect of +10.2%).

Table 3.5 – Effect of the Arab Spring Events on women's empowerment: Alternative treatments

	Binary Treatment		Rank[b]		Discrete Treatment[c]		Combined
	Protest intensity	Women's participation	Protest intensity	Women's participation	Protest intensity	Women's participation	Treatment[d]
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Post × *Treat*	4.181***	3.498***	0.171**	0.204***			
	(1.058)	(0.965)	(0.0735)	(0.0740)			
Post× *High Treat*					5.772***	5.903***	
					(1.139)	(1.064)	
Post× *Interm. Treat*					4.005***	3.283**	
					(1.283)	(1.316)	
Post×*Low Treat*					3.125*	1.347	
					(1.741)	(1.089)	
Post× *Treated (Protest Intensity)* × *Treated (Women participation)*							6.019***
							(0.913)
Post× *Treated (Protest Intensity)* × *Untreated (Women participation)*							1.250
							(1.584)
Relative effect (a)	0.126	0.104	n.a.	n.a.	0.131	0.107	0.111
Observations	27,782	27,782	27,782	27,782	27,782	27,782	27,782
R-squared	0.052	0.052	0.049	0.050	0.051	0.051	0.052

Linear estimations based on 2008 and 2014 DHS. Estimation of woman's empowerment (ternary composite index) on the treatment, i.e. above-median protest intensity (based on the Egyptian Revolution database and defined as the governorate-level proportion of fatalities, injuries and arrests) or above-median women's participation (based on the 2014 SYPE survey and defined as the proportion of women engaged in Arab Spring demonstrations). We use the specification of model 4 in Table 3.1 (controls include wealth, urban, education of the wife, age of wife and husband, husband in work, religion, birth cohort, municipality dummies, interactions between POST and the controls). Standard errors in parentheses are clustered at the municipality level. *** indicates significance at the 1% level, ** at the 5% level and * at the 10% level.

[a] Effect relative to the pre-event control group average empowerment, in %. With discrete treatment: average effect over the 3 groups. With combined treatment: average effect over the 2 groups.

[b] Rank from the scores of protest intensity / women's participation (coefficients not comparable to binary/discrete treatment).

[c] Discrete treatment groups: governorates ranked 1-3 (high), 4-6 (interm.), 7-10 (low), the reference being the control group.

[d] Discrete groups combining both treatment variables: Post × Protest intensity above median × Women participation above the median and Post × Protest intensity above the median × Women participation below median.

Alternative Treatment Variable: Ranks and Discrete Treatment Intensity. We pursue this comparison for other types of treatment variables. In the baseline, the threshold applied to determine treated governorates was arbitrarily set to the median. In

columns 3-4 of Table 3.5, we now report additional results based on a continuous measure of treatment: it is simply calculated as the governorate ranks in the intensity of treatment. We obtain again very similar results for both protest intensity and women's participation: they show a significant and positive effect of the governorate's ranks for both measures.

In columns 5-6, we study possibly nonlinear treatment effects. We split governorates in 4 groups of increasing intensity: high intensity (top 3 governorates), medium (next 3), low (next 4) and the control group. If we suspect that some of the governorates drive our results, then other groups should show insignificant effects. If, on the contrary, our measures really carry some information on a relevant intensity of treatment, we expect the effect to monotonically increase with our measures. This is indeed what we observe in Table 3.5. With protest intensity, all three groups of treatment show significant effects of gradually increasing magnitudes. Note however that the three effects are not significantly different.[27] The pattern is similar with women's participation: only the low-intensity group is insignificant (which means that it could have been classified as part of the control group) and high and medium groups show increasing responses. In both columns 5 and 6, the relative effect calculated as the mean impact over the three treated groups yields a response that is close to what we obtained with binary treatments (13.1% and 10.7% respectively).

Finally, we can combine both sources of variation (protest intensity and women participation). A simple way of doing so consists in introducing heterogeneity within our main treatment variable (protest intensity) between governorates with high versus low women participation. Results in column 7 show that our main effect is driven by regions combining above-median protest intensity and above-median women participation. This is simply explained by the fact that among exposed governorates, women have been the most active in those with the highest protest intensity. The magnitude of the effect is actually similar to the estimate obtained in the three governorates with the highest protest intensity (the 'high treatment' of column 5).

[27] F-tests cannot reject the null hypothesis of equality of the effects (the p-value is 0.21 for all three effect and 0.14 when testing the equality of the top and low intensity effects). If we cluster standard errors at governorate rather than municipality level, top and medium intensity effects are highly significant but again the equality of the different effect is not rejected.

3.4.4 Alternative mechanisms

We now consider several alternative interpretations of our central findings. We ask whether protest intensity may capture other channels through which intrahousehold decision making could have been changed. While there is no definitive answer to this question, most of the plausible mediating factors seem unlikely to dominate our hypothesis about women's participation to the Arab Spring events.

Labor Markets. The first interpretation pertains to the increased labor market participation of women in places affected by higher degrees of conflicts and, hence, more damaged local economies. This is related to the 'added worker' effect characterized in El-Mallakh et al. (2018). The first stage of this analysis questions whether treated governorates have experienced a relative increase in female labor market participation. With our initial treatment variable – protest intensity – the effect of the Arab Spring events on female labor supply is insignificant.[28] Notwithstanding, our results align to El-Mallakh et al. (2018)'s when we use women's protest participation as treatment variable. In this case, we find a significantly positive impact of the Arab Spring on female labor market participation.[29]

Then, the easiest way to check the potential role of labor markets is to introduce the women's employment dummy in the empowerment estimation. The mediating effect should be measured by the subsequent decrease in our double difference coefficient. When using protest intensity to define treated governorates, the coefficient is hardly affected. This result reflects the aforementioned absence of labor market effects when using protest intensity as the source of variation. When using the variation in women's protest participation, the coefficient on $POST \times TREAT$ decreases by around 4% – 5% depending on the specification.[30] Thus, it seems that female

[28] This result is not necessarily at odd with El-Mallakh et al. (2018) who focus on a different period of treatment (2011-12) and, most importantly, point to an increase in married women's labor force participation *relative* to their husband's. Also, they find an employment effect mostly in low-paid informal work. The DHS does not allow us to replicate these results in detail as it does not contain information on husbands' employment or on women's employment type.

[29] Results are reported with other outcomes, which are discussed later, in Appendix Table 3.8 and Table 3.10. We distinguish overall work and paid work (last two columns of the lower panels in these tables).

[30] We reach the same conclusions when adding both the work dummy and its interaction with $POST$. Note also that our estimations control for household wealth. Results also hold when imputing regional relative economic opportunities of men and women, as proxied by their relative unemployment rates, taken from the LFS, at the governorate level.

employment is not a strong explanatory factor overall.[31] Nonetheless, these results do not preclude women's employment from playing an important role in general. The female employment dummy has a very significant and relatively large effect on empowerment (for a comparison, its magnitude is about two-third that of the Arab Spring effect).

El-Sissi's Political Reforms. A second determinant could be found in policy changes. In particular, equal rights and protections for women were enshrined in the newest Egyptian constitution of January 2014, with the affirmation of "state's commitment to protect women against all forms of violence". Laws forbidding discrimination based on gender were included while women were officially given access to higher judiciary positions for the first time. Quotas were also introduced ('one quarter of the seats' for women) in the elected local councils. Yet, the gains made in legal rights are too recent to plausibly empower women in such a short-term period, all the more so as their enforcement remains to be seen. The gender discourse and policy reforms in the El-Sissi era can be viewed as a consequence of the massive mobilization of women, not something causing the empowerment effect under study. An alternative definition of our treated governorates that excludes the 2014 events leads to the same governorate classification as in the baseline. This means that the few events of the last phase of the revolution did not change the geography of treatment in a way that would have triggered more local enforcement of the new laws.

Migration. A third mediating effect could be the role of migration. There are limited chances that more empowered women did self-select into more exposed regions (which would bias our estimate upward). Yet it is possible that out-migration from highly exposed governorates created selective attrition – for instance if those who left were specifically against pro-gender equity ideas. Ideally, we would like to compare baseline results to the estimates obtained from a subsample of geographically stable people. Unfortunately, the DHS is not a panel and has no information on mobility. Hence, we suggest an additional check based on the Egypt Labor Market Panel Survey (ELMPS), a nationally representative panel used by El-Mallakh et al. (2018). We focus

[31] Notice that women's employment is an important aspect of the gender question, yet not without ambiguity. Indeed, an added worker effect does not necessarily improves women's say if it simply corresponds to intra-household risk sharing in households with long-term commitment (La Mattina, 2017). Some studies even show that increased female participation among poor households may increase the risk of domestic violence if husbands seek to reassert control after a woman enters the labor force (Heath, 2014).

on the 2012 data (49,186 observations) and follow our baseline selection (married couples, aged 15-49, excluding border governorates). We use retrospective information on the dates of previous geographical moves to define a dummy equal to 1 in case of a move to another governorates or abroad in the years 2011 or 2012. A simple regression of this dummy on standard controls and $TREAT_i$ yields an insignificant effect (p-value=.532).[32] This check is reassuring but does not cover the last year of our studied period. Hence, we also rely on the Egypt Household International Migration Survey (Egypt-HIMS). This study was conducted in 2013 by the Central Agency for Public Mobilization and Statistics (CAPMAS) as part of the MED-HIMS program, which explicitly focuses on migration in a set of mediterranean countries.[33] The sample (83,269 households) allows calculating the net migration rate by governorate between the previous census (2006) and 2013. We regress it on $TREAT_i$, which yields again an insignificant effect (p-value=.329): there is no evidence of differentiated migration patterns that could drive our results.

Sex Ratio. Finally, a last channel connects our study to the recent literature on conflicts and gender empowerment. La Mattina (2017) finds increased domestic violence and reduced decision-making power among women who married after the genocide in Rwanda and lived in regions where many men died. The explanatory channel, i.e. a substantial change in the sex ratio in these localities, does not apply to Egypt. Indeed, we have checked that the number of casualties from the Arab Spring events, even if large, cannot have significantly affected the sex ratio in Egypt (both at governorate and municipality levels).

3.4.5 Other outcomes

Alternative Empowerment Measures. We extend our results to variants of the empowerment composite index used in previous estimations. Appendix Table 3.8 (upper panel) reproduces the baseline results using a MCA-composite index based on ternary answers on health, socialization and purchase decisions (column 1). It is compared to a similar composite index adding a fourth dimension, namely whether the woman

[32]The proportion of movers among highly exposed governorates was 1.58%, indeed not much larger than among control governorates (1.49%).

[33]We are grateful to Ragui Assaad for information about the data and Ihab Mahmoud Gad and the CAPMAS for access to the Egyptian module of the MED-HIMS. This program is a joint initiative of the European Commission, the World Bank, UNFPA, UNHCR, ILO, IOM and the League of Arab States, see: http://ec.europa.eu/eurostat/web/european-neighbourhood-policy/enp-south/med-hims

works (column 2). The effect is in the same order of magnitude. We also isolate each of the three decision-making variables as dependent variables with ternary outcomes (0 if the husband decides, 1 for joint decision and 2 if the wife decides). The effects are all significant (columns 3-5) but vary in magnitude, with larger impacts on decisions pertaining to the wife's health and family purchases. Alternatively, we can construct binary indices by pooling answers. We may argue that some decisions could reflect autonomy when being made alone (health, social life) while other require coordination (large expenditures). More generally, the meaning of joint decision for empowerment is ambiguous (Acosta et al., 2019), so we try both approaches in Table 3.9: women's autonomy excludes joint decision (upper panel) or includes it (lower panel). We obtain significant effects in most cases. Relative effects are in the same order of magnitude when autonomy includes joint decision (they are slightly lower due to a lower effect on health) and much larger when autonomy excludes joint decision (especially due to a more than doubled effect on health). We have also replicated results with ternary answers when treated governorates are identified using women's protest participation. Empowerment effects reported in Table 3.10 (upper panel) are much in line with the results discussed above.

Domestic Violence. We focus on other questions related to women's perception about their integrity and well-being. The first one addresses women's tolerance of domestic violence (a dummy equal to 1 if she disagrees with any justification for the use of violence). Results from a linear probability model are presented in Table 3.8 (lower panel) and point to a negative effect of higher protest intensity on the acceptation of violence (column 1), which becomes significant when we restrict our sample to those interviewed without the presence of other people listening (column 2). These results somehow temper the improvement in final say found previously, if women are not free to express their opinions in front of their husband or other males. Yet, this may be only a selection effect if women interviewed in the presence of their husband are also less empowered women. When using women's protest participation to define treated governorates, we find insignificant effects whatever the conditions of interview (Table 3.10, lower panel).

Girls' Circumcision. Another serious aspect of the discussion about women empowerment in Egypt pertains to female genital mutilation (FGM). This ritual involves the partial or full removal of the external female genitalia. It is rooted in gender inequality

and attempts to control women's sexuality. Despite the severe health and psychological consequences of this practice, it is usually initiated and carried out by women, who see it as a source of honor, and who fear that failing to have their daughters cut will expose them to social exclusion.[34] We replicate our estimations on a dummy equal to 1 if the mother intends to circumcise her daughters and 0 otherwise. Results in Table 3.8 (lower panel) show a significant decrease in the choice to circumcise girls in treated governorates, whether the woman is alone during the interview or not. The relative effect of the protests on FGM is of a similar magnitude as for decision-making (a reduction of around 10%). These results convey that an exposure to the protests may have entailed an improvement in women's perception about their integrity, autonomy and well-being as well as aspirations for their daughters. Note that when using women's participation for treatment, we also find significant and large effects on the attitude towards daughters' FGM (Table 3.10, lower panel).

3.5 Conclusion

This paper studies the heterogeneous change in women's empowerment during the Egyptian Arab Spring. We rely on geographical variation in the intensity of protests during which female demonstrators and women's cause have gained a huge amount of visibility. Results point to a substantial increase in women's autonomy in highly exposed governorates. This effect is robust to alternative modelling strategies and broadly consistent across different empowerment measures based on the final say in health, expenditure and socialization choices or on attitudes regarding domestic violence and girls excision. It was shown not to be mediated by changes in female labor supply, by migration or most recent reforms.

In our double difference estimations, the treatment group was defined as households living in regions experiencing the highest proportions of fatalities, injuries and arrests. These measures based on comprehensive media reports were assumed to proxy the local proportion of demonstrators, including women, as well as the conflict intensity that may have raised awareness about the women's cause. We have also obtained very similar results when using an alternative definition of treated regions based on women's rate of protest participation. Future work could nonetheless attempt to elicit more specific information about women's activism during these events and the way it

[34] In Egypt, despite being punishable by the law, FGM remains a common practice among Muslim and Coptic populations. More than 90% of women in our sample have been circumcised.

may have affected the diffusion of social norms, ideas and attitudes regarding gender rights both in the public and private spheres.

Also, while there is a growing research on women's political representation and on the impact of the media on social changes and family decisions (Jensen and Oster, 2009; La Ferrara et al., 2012), few studies address the intersection of these literatures. Further research should address how women's spontaneous activism during the Arab Spring has gained visibility through classic and social media to pervade in turn the private sphere. Our empirical approach has focused on the role of street protests and women's participation. At the same time, the role of internet activism in the Arab Spring has been highly publicized. Some authors like Acemoglu et al. (2014) argue that while social media helped coordinate street mobilization, the discontent expressed in popular protests was much more influential because demonstrations were a lot more visible and spectacular, providing important information to participants and others in society. Nonetheless, further work should compare these different factors and study the possibly reinforcing effects of demonstrations and e-activism.

Finally, attempts to check whether the empowerment effect elicited in this study is temporary are also expected. The appraisal of the 'Arab Awakening' in terms of women's political representation is still uncertain - and so is the enforcement of the 2014-15 policy reforms. Moreover, we cannot conclude about how persistent the empowerment effect found in this study could be. The pessimistic view would touch upon the risk that women who witnessed or took part in political movements may be re-subordinated with a return to normalcy, i.e. a patriarchal backlash (Alison, 2009). A positive tone would see our results as indicating that women's perception about their role in conservative societies is not immutable and that this idea may pass on to the next generation.

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Appendix

Appendix A: Descriptive Statistics

Table 3.6 – EDHS Descriptive statistics: 2000-2008-2014

	Control			Treated			Raw Diff-in-Diff 2008-2014		
	2000	2008	2014	2000	2008	2014	Abs. DD	Relative DD	Signif.
Alternative Dependent Variables (Empowerment)									
Composite index: ternary[a]	29.32	33.22	31.00	30.19	32.39	34.75	4.59	0.14	***
Composite index: ternary + work[b]	28.35	31.29	29.18	29.53	30.65	32.53	3.99	0.13	***
Decide on her health[c]	0.88	1.17	0.95	0.95	1.12	1.09	0.19	0.16	***
Decide on her social life[c]	0.86	0.90	0.84	0.85	0.94	0.97	0.09	0.10	***
Decide on main purchases[c]	0.47	0.63	0.72	0.43	0.60	0.81	0.12	0.19	***
Decide on her health[d]	0.58	0.88	0.80	0.58	0.89	0.89	0.09	0.10	***
Decide on her social life[d]	0.72	0.80	0.73	0.72	0.85	0.83	0.06	0.07	***
Decide on main purchases[d]	0.41	0.58	0.65	0.38	0.55	0.74	0.11	0.19	***
Tolerate domestic violence (0/1)	-	0.45	0.41	-	0.34	0.25	-0.05	-0.11	***
Agree with daughters' excision (0/1)	-	0.63	0.65	-	0.52	0.43	-0.10	-0.16	***
Explanatory Variables									
Wealth[e]	3.33	2.93	2.86	3.70	3.38	3.66	0.357	0.12	***
Urban (0/1)	0.37	0.29	0.29	0.64	0.60	0.60	0.00	-0.01	
# kids	0.97	0.84	0.91	0.89	0.81	0.88	0.00	0.00	
Educ.: None	0.48	0.33	0.23	0.31	0.30	0.20	0.00	0.00	
Educ.: Primary	0.19	0.12	0.10	0.19	0.13	0.09	-0.01	-0.08	
Educ.: Secondary	0.27	0.45	0.54	0.37	0.43	0.53	0.01	0.03	
Educ.: Higher	0.06	0.10	0.13	0.13	0.14	0.17	0.00	-0.02	
Wife's age	34.4	34.0	33.3	34.7	34.3	33.5	-0.19	-0.01	
Husband's age	41.9	41.2	40.0	42.1	41.4	40.0	-0.26	-0.01	
Marital duration (years)	16.3	14.8	13.6	15.6	14.8	13.4	-0.15	-0.01	

Statistics based on 2000, 2008 and 2014 DHS. Treated: households living in governorates with above-median protest intensity (based on the Egyptian Revolution database and defined as governorate-level proportion of fatalities, injuries and arrests). Last columns: Abs. DD = absolute difference-in-difference, Relative DD = DD relative to the pre-event control group outcome, Signif.: t-test of the raw double differences with ***, ** and * indicating significance at 1%, 5% and 10% levels respectively.

[a] MCA procedure over health, socialization and purchase decision questions (ternary answers).

[b] MCA procedure over health, socialization and purchase decision questions (ternary answers) & female labor market participation.

[c] Ternary answers : 0 (husband decides), 1 (joint decision), 2 (wife decides).

[d] Binary answers : 0 (husband decides), 1 (she decides alone or with husbands).

[e] Average over quintiles of wealth.

Appendix B: Sensitivity to Standard Error Clustering

Table 3.7 – Effect of the Arab Spring on women's empowerment: Alternative standard error clustering

	(1)	(2)	(3)	(4)	(5)	(6)
$Post \times Treat$	4.181***	3.765***	4.181**	4.181**	4.181**	4.181**
	(1.058)	(1.007)	(1.989)	(2.086)	(2.077)	(1.989)
Observations	27,782	27,782	27,782	27,782	27,782	27,782
R-squared	0.051	0.033	0.051	0.051	0.051	0.051
Cluster	Municip.	Municip.	Govern.	Govern.	Govern.	Govern.
Fixed effect	Municip.	Govern.	Municip.	Municip.	Municip.	Municip.
Bootstrap	No	No	No	800 rep.	1000 rep.	Wild BS

Linear estimations based on 2008 and 2014 DHS. Estimation of woman's empowerment (ternary composite index) on the treatment, i.e. above-median protest intensity (based on the Egyptian Revolution database and defined as the governorate-level proportion of fatalities, injuries and arrests). We use a specification including the following controls: wealth, urban, education of the wife, age of wife and husband, husband in work, religion, birth cohort, interactions between POST and the controls. Fixed effects: we additionally control for municipality dummies ('Municip.') or governorate dummies ('Govern.'). Cluster: standard errors in parentheses are clustered at the municipality level ('Municip.') or governorate level ('Govern'). Clustering based on standard bootstrap (800 or 1000 replications) or wild bootstrap. ***, ** and * indicate significance at the 1%, 5% and 10% levels respectively.

Appendix C: Alternative Empowerment Measures

Table 3.8 – Effect of the Arab Spring Events: Alternative outcomes (using Protest Intensity for treatment definition)

	Final say: Ternary indices				
	Composite index (ternary), BASELINE	Composite index (ternary + work)	Decide on her health	Decide on her social life	Decide on main purchases
$Post \times Treat$	4.181***	3.667***	0.207***	0.0494*	0.114***
	(1.058)	(1.069)	(0.0353)	(0.0268)	(0.0389)
Relative effect [a]	**0.126**	**0.117**	**0.177**	**0.055**	**0.180**
Observations	27,782	27,782	27,782	27,782	27,782
R-squared	0.051	0.058	0.074	0.057	0.079

	Perception about women's integrity and well-being				Labor market participation	
	Tolerate domestic violence	Tolerate domestic violence [b]	Agree with daughters' excision	Agree with daughters' excision [b]	Overall work	Paid work
$Post \times Treat$	-0.0269	-0.0486*	-0.0647**	-0.0623**	-0.0180	-0.0207
	(0.0266)	(0.0285)	(0.0273)	(0.0292)	(0.0144)	(0.0129)
Relative effect [a]	**-0.059**	**-0.107**	**-0.102**	**-0.099**	**-0.115**	**-0.146**
Observations	27,782	20,909	11,893	8,691	27,781	27,782
R-squared	0.236	0.242	0.384	0.395	0.154	0.171

Linear estimations based on 2008 and 2014 DHS. Estimation of woman's empowerment (ternary composite index) on the treatment, i.e. above-median protest intensity (based on the Egyptian Revolution database and defined as the governorate-level proportion of fatalities, injuries and arrests). We use the specification of model 4 in Table 3.1 (controls include wealth, urban, education of the wife, age of wife and husband, husband in work, religion, birth cohort, municipality dummies, interactions between POST and the controls). Standard errors in parentheses are clustered at the municipality level. ***, ** and * indicate significance at the 1%, 5% and 10% levels respectively.

[a] Effect relative to the control group pre-period average empowerment, in %.

[b] Interview without others being present including the husband.

Table 3.9 – Effect of the Arab Spring Events: Alternative final say measures based on binary answers (using Protest Intensity for treatment definition)

	Final say: binary measure, empowerment = she decides[b]				
	Composite index	Composite index (+ work)	Decide on her health	Decide on her social life	Decide on main purchases
$Post \times Treat$	3.636**	3.321**	0.118***	0.00859	0.0126
	(1.618)	(1.532)	(0.0334)	(0.0178)	(0.0122)
Relative effect[a]	**0.293**	**0.216**	**0.407**	**0.089**	**0.237**
Observations	27,782	27,782	27,782	27,782	27,782
R-squared	0.061	0.061	0.084	0.051	0.038
	Final say: binary measure, empowerment = she decides alone or with husband[c]				
	Composite index	Composite index (+ work)	Decide on her health	Decide on her social life	Decide on main purchases
$Post \times Treat$	7.628***	5.482***	0.0890***	0.0408*	0.101**
	(2.151)	(1.602)	(0.0181)	(0.0210)	(0.0390)
Relative effect[a]	**0.100**	**0.074**	**0.101**	**0.051**	**0.174**
Observations	27,782	27,782	27,782	27,782	27,782
R-squared	0.128	0.144	0.091	0.097	0.110

Linear estimations based on 2008 and 2014 DHS. Estimation of woman's empowerment (ternary composite index) on the treatment, i.e. above-median protest intensity (based on the Egyptian Revolution database and defined as the governorate-level proportion of fatalities, injuries and arrests). We use the specification of model 4 in Table 3.1 (controls include wealth, urban, education of the wife, age of wife and husband, husband in work, religion, birth cohort, municipality dummies, interactions between POST and the controls). Standard errors in parentheses are clustered at the municipality level. ***, ** and * indicate significance at the 1%, 5% and 10% levels respectively.

[a] Effect relative to the control group pre-period average empowerment, in %.

[b] Binary variable 1= wife decides alone, 0= joint decision or husband decides alone.

[c] Binary variable 1= wife decides alone or joint decision, 0= husband decides alone.

Table 3.10 – Effect of the Arab Spring Events: Alternative outcomes (using women's participation for treatment definition)

	Final say: Ternary indices				
	Composite index (ternary), BASELINE	Composite index (ternary + work)	Decide on her health	Decide on her social life	Decide on main purchases
$Post \times Treat$	3.498***	3.716***	0.122***	0.0274	0.0443
	(0.965)	(0.943)	(0.0330)	(0.0264)	(0.0406)
Relative effect[a]	**0.104**	**0.123**	**0.106**	**0.031**	**0.077**
Observations	27,782	27,782	27,782	27,782	27,782
R-squared	0.052	0.058	0.070	0.057	0.078

	Perception about women's integrity and well-being				Labor market participation	
	Tolerate domestic violence	Tolerate domestic violence [b]	Agree with daughters' excision	Agree with daughters' excision [b]	Overall work	Paid work
$Post \times Treat$	0.0335	0.0328	-0.0704***	-0.0481*	0.0385***	0.0305**
	(0.0265)	(0.0284)	(0.0256)	(0.0285)	(0.0124)	(0.0124)
Relative effect[a]	**0.067**	**0.069**	**-0.121**	**-0.085**	**0.226**	**0.202**
Observations	20,909	11,893	8,691	27,781	27,781	27,782
R-squared	0.241	0.384	0.395	0.154	0.154	0.171

Linear estimations based on 2008 and 2014 DHS. Estimation of woman's empowerment (ternary composite index) on the treatment, i.e. above-median women's participation intensity based on the 2014 SYPE survey (defined as governorate-level proportion of women engaged in Arab Spring demonstrations). We use the specification of model 4 in Table 3.1 (controls include wealth, urban, education of the wife, age of wife and husband, husband in work, religion, birth cohort, municipality dummies, interactions between POST and the controls). Standard errors in parentheses are clustered at the municipality level. ***, ** and * indicate significance at the 1%, 5% and 10% levels respectively.

[a] Effect relative to the control group pre-period average empowerment, in %.

[b] Interview without others being present including the husband.

Chapter 4

Couples in lockdown, “La vie en rose” ? Evidence from France

This chapter is a joint work with Francesca Marchetta (CERDI, Université Clermont Auvergne) and has been published in *Covid Economics, Vetted and Real-Time Papers*, Issue 73, 2021.

4.1 Introduction

In France and all over the world where stay-at-home policies were implemented, the first lockdown of the Spring 2020 harshly affected and challenged partners in their households. The effects of this sudden forced coexistence impacted the household on the amount of housework and childcare (Del Boca et al., 2020; Farré et al., 2020), the occurrence of domestic tensions (Biroli et al., 2020) or even intimate partner violence (Arenas-Arroyo et al., 2020; Beland et al., 2020; Hsu and Henke, 2020; Morgan and Boxall, 2020; Ravindran and Shah, 2020). Witnesses of the domestic violence, the helplines also knew a dramatic rise of the distress calls in western countries (Bullinger et al., 2020; Leslie and Wilson, 2020; Miller et al., 2020) as well as in developing countries (Agüero, 2020; Perez-Vincent and Carreras, 2020). For France, we notice a rise by 44% of police interventions for family disputes while the calls to the helplines for domestic violence doubled.[1] Futhermore, 49% of the french couples reported intrahousehold conflicts due to the housework distribution during the lockdown, and one-third of the

[1] This information comes from France Inter’s website, "Violences faites aux femmes : que s’est-il vraiment passé pendant le confinement ?", published on May 15 2020.

women who reported these frequent disputes suffered from verbal abuse.[2] From the 2020 Insee report on family and social inequality, we also note that 13% of the french couples (16% of the parents) reported more frequent disputes during the lockdown while women continued to do the lion's share of the housework (Barhoumi et al., 2020).

In this paper, we aim to investigate the link between household tasks distribution and intrahousehold conflict, addressing two intertwined research questions. (i) Has the lockdown induced a (re)distribution of household chores between the two partners? If yes, do men increase their participation in tasks that are perceived to have a female connotation? (ii) Does a more equal burden sharing reduce the likelihood that a woman reports that a conflict has occurred? Is there a relationship between the type of the task in which men participate and the incidence of conflicts? As the stay-at-home policies did not homogeneously affect workers, we explore the heterogeneities in the results according to the confinement status of the couple.[3]

We use original data, own-collected via an on-line survey between April 21 and May 10, 2020 on 2,907 partnered women.[4] The survey collected fine-grained information on the housework and childcare contribution of the two partners as well as on the occurrence of conflicts in the couple before and during the lockdown.[5]
We show that only couples with kids where both partners stayed at home or where the woman was working outside during the lockdown significantly reduced the gender gap in both housework and childcare. Interestingly, for the totally confined parents, this change is particularly driven by the male participation in shopping and in playing

[2]These data are from an Ifop's survey "Enquête sur les conditions de logement des Français confinés et les tensions au sein des foyers" on a representative sample of 3 011 respondents, published on April 7 2020. Ifop also provided a similar study in 2019, where 45% of the french couples reported conflicts due to the division of the housework.

[3]Four types of confinement status are defined during the lockdown: (1) when both partners were confined at home, it is the basic situation in the stay-at-home policies; (2) when the woman was the only to work outside; (3) when the man was the only to work outside; (4) when both partners worked outside. Being an "essential worker" was a reason why some people continue to commute to their workplace in this period, as for instance in the construction industry, in supermarkets or in personal care services.

[4]The French president Emmanuel Macron announced the closure of kinder-gardens, schools and universities for an unspecified time in the speech he delivered on March 12, 2020, and he then imposed the total lockdown on March 16, 2020; going out of home was limited to essential tasks, such as food shopping and working (in cases in which working from home was unfeasible), plus the opportunity to walk or doing physical activities for at most one hour per day within a one kilometer radius from home.

[5]In the paper, we alternative name household tasks, household activities or household chores to indicate both housework (i.e. cleaning, laundry, shopping and cooking) and childcare (i.e. homework and playing).

with kids, the less female-connoted activities considered in this study. These two tasks could also be considered as a quasi-leisure in period of lockdown. This result claims the null-effect or, at most, the feeble impact of the lockdown on the household chores distribution. For most of the confinement statuses, we also find that conflictual situations arised when the gender gap of the household chores distribution increased during the lockdown. This result means that redistributing the burden of household tasks during the lockdown is likely to limit the disputes between partners. We notably document that the tensions mostly appeared when the gender imbalance increased in cleaning, the most time consuming and female-connoted household chore.

Our paper first contributes to the literature on the gendered division of household chores, and in particular to the relationship between gender preferences and the within-couple variation of household tasks allocation over time. The asymmetric allocation of the housework between partners has been largely lighted by seminal theoretical papers as in Becker (1965) or in Gronau (1977). Despite a large reduction of the gender gap in the labor market, women continue to do the lion's share of the housework (see the recent literature review by Lachance-Grzela and Bouchard (2010)), even if researchers notice that the division of the housework became more balanced and the gender gap converges over the life span (Lam et al., 2012; Leopold et al., 2018). Exploiting changes in the labor market participation in the couple, some authors document some within-couple variation of the housework division. Killewald and Gough (2010) and Foster and Stratton (2018) show that the new-unemployed men increase the share of housework, but to just around half of the time devoted by women to them. Álvarez and Miles-Touya (2019) exploit a specific feature of the Spanish Time Use Survey to provide the evidence that men increase their contribution to housework in their non-working days, but to a lesser extent than women. Therefore, many unobservables factors as the social norms, stereotypes or preferences remain and are shaping the constant gender gap across cohorts. Using an experiment, Couprie et al. (2020) investigate the influence of the stereotypes and find that partners overspecialize their housework in accordance with their gender roles. As observed by Kahneman et al. (2004), household chores also differ in terms of pleasantness and physical effort. If Auspurg et al. (2017) do not find any little evidence of any systematic gender differences in preferences, Stratton (2012) show that men's preferences drive their commitment in housework.[6] In this paper, we claim that men contribute more

[6]To our knowledge, the (economic) literature exploring heterogeneity of preferences for type of housework activities among partners is limited. Van der Lippe et al. (2013) suggest that gender pref-

to chores that became a "quasi-leisure" in the lockdown period, showing that the gendered nature of a task seems to respond to its changing attractiveness rather than being a stable feature. This finding illustrates a possible change of men's preferences due to the constraints during the pandemic, modifying the division of the housework.

We also relate to the literature analyzing how the occurrence of conflicts within the couple is linked to the allocation of tasks between partners. The economic and sociological literature has addressed the question whether the men's participation in household activities stabilizes marriage and reduces the risk of separation. According to the Becker's theory of specialization, we could expect the separation risk to decrease with partner's specialization because the partners' mutual dependence increases, e.g. women take care of household chores, men taking the role of breadwinner (Becker, 1981, 1985; Cooke, 2006). On the other hand, the separation risk could increase because of the dissatisfaction of the women who have to carry most of the burden at home. The risk could be higher for the couples where the woman has more bargaining power, because of her high education level or her high part of the total family income. Cooke (2006), Sigle-Rushton (2010) or Ruppanner et al. (2018) empirically show that the risk of separation is lower in couples where the man is more involved in housework (and childcare, where there are children). Conversely, Norman et al. (2018) found that father's involvement in childcare in the first year after the birth is associated with couple stability, but this is not always the case for his involvement in other tasks. According to Altintas and Sullivan (2016) and Van der Lippe et al. (2014), frictions about the allocation of the housework among partners is one of the main sources of marital conflict.[7] In the context of the Covid19 pandemic, Beland et al. (2020), Biroli et al. (2020) and Hsu and Henke (2020) have documented an increase, respectively, in domestic violence and family tensions during the lockdown. This paper is directly linked to this literature, showing that an increase in the unbalanced division of the housework during a stressful situation as the lockdown rise the likelihood of conflicts

erences for housework matters for outsourcing. More interestingly, Van Berkel and De Graaf (1999) show that cooking and shopping are considered as enjoyable housework activities by men and women, while cleaning is disliked by both partners. This is in line with the work by Shaw (1988), who indicated that cooking was among the preferred housework tasks. Empirical work on housework, often uses the distinction between "female-typed housework", that includes laundry, housecleaning, washing dishes, and cooking and "total housework". Shopping is included in the second category, together with gardening, pets care and other tasks that can be considered as semi-leisure (Kahneman et al., 2004)

[7] Related to this, some evidence exists on a negative association between the psychological distress and a more equal distribution of housework among partners (Harryson et al., 2012; Kalmijn and Monden, 2012; Lennon and Rosenfield, 1994). Carlson et al. (2016) show that a more egalitarian division of housework matters for sexual relations.

among partners.

Finally, we contribute to the emerging literature on the effects of the stay-at-home policies during the Covid-19 pandemic, and notably the multifaceted implications of the lockdown on couples and households. Several papers have documented the quantitative increase of hours allocated to the household chores and childcare, and the change of couples' behaviour. For Spain, Farré et al. (2020) show an slight increase in the male partner's share of housework and childcare, but also that women still take the lion's share.[8] In Italy, Del Boca et al. (2020) find that men increase the time they spend in gratifying tasks, as children related activities, rather than the time doing chores. Using data from England, Andrew et al. (2020) show that during the lockdown mother spent more time in housework and childcare than their partners. Using panel data on German families, Hank and Steinbach (2020) document that there is no fundamental changes in established patterns of couples' division of labor during the lockdown. In Italy and the US, Biroli et al. (2020) document that families experienced an increase of intra-household tensions, even if men increased their share of childcare and grocery shopping duties. To the best of our knowledge, our paper is the first exploring the link between the household chores division and the occurrence of conflicts between partners at the confinement period. Moreover, the issues related to family, couples and household during the pandemic still remain overlooked in the literature for France.

The rest of the paper is structured as follows: Section 4.2 describes our original dataset. The effect of the lockdown on the division of the housework and childcare related activities are presented in Section 4.3. We discuss the relationship between tasks distribution and the occurrence of the conflicts in Section 4.4. Then, Section 4.5 concludes.

4.2 EICM Survey and Data

In order to investigate specific issues on the changes due to the pandemic and the lockdown in France, we conducted a real time survey using an on-line software from April 21 to May 10 2020.[9] The survey was spread using different ways: (i) through

[8] Our data are particularly close to their dataset, who also have information on the time spent by respondents and partners on each type of task. They also showed that the increase in men's contribution to housework was mostly concentrated on the shopping activity.

[9] A first version of the survey was developed by Lidia Farré (Universitat de Barcelona) and Libertad Gonzales (Universitat Pompeu Fabra) with the aim of collecting early data on the labor market conse-

the personal and professional networks of the authors, (ii) through a mass-emailing strategy that targeted metropolitan French kindergartens and primary schools and (iii) through a 5 days marketing campaign on Facebook and Twitter. Using social networks allowed us to increase our audience and balance our sample as they have randomly distributed the survey among the targeted population. The raw dataset was collected on 4,616 individuals under the name of *Enquête sur l'Impact Economique et social du COVID-19 sur les Ménages* (EICM). Although we did not explicitly target them in the distribution of the survey, most of our respondents were women.
This might be explained by the fact that women felt more concerned by the topics raised by the survey. The low number of male respondents prevents us to study the male perceptions on the intra-household relationships. Therefore, we only restrict our sample on the partnered women respondents with fully information since we are interested on intra-household relationships in this paper. We finally rely on a sample of 2,844 women, reporting basic information including location, education, civil status and working status before and during the lockdown. Each respondent reports the same information for her partner. The survey also provides information on the division of housework and childcare tasks before and during the lockdown.
As respondent intentionally participated to our survey and the data were not collected using a sampling design, our dataset is not representative of French women population. Table 4.3 reports comparisons between EICM dataset and INSEE data. Thanks to the great efforts in the distribution of the questionnaire, we observe that our sample is relatively well balanced at geographical level, except for an over-representation of women from AURA region and an under-representation of women from Ile de France region.[10]

We also find that our sample under-represents women without an university degree (59.85% in EICM compared to 75.4% in INSEE data). This selection bias could also be linked to the author's networks and the individual's preferences who lead the interest to participate at this survey. We thus weighted our estimates in order to correct for the under representativeness of lower educated women.[11]

quences as well as the intrahousehold relationships during the lockdown. Similar surveys were then spread in France, Italy, Germany and Austria. The French and the Italian versions included detailed questions on children time use, when respondents lived with their kids. The French version also added some questions on the conflicts between partners during the lockdown. The questionnaire is available from the authors upon request.

[10]The high number of respondents from the AURA region can be explained by the residence location of the authors, who spread in their own networks the survey.

[11]All of our results remain stable when we do not reweight the estimates. These results are available

Table 4.4 presents the descriptive statistics on the outcome variables and on the covariates for the sample of women, both before and during the lockdown. More details on the described variables are given in the next sections.

4.3 Intrahousehold division of the household chores during the lockdown

4.3.1 Time-use and division of household chores

This section explores the changes in the partners' contribution to housework and childcare activities during the Spring 2020 lockdown in France. The EICM survey collected information on all domestic chores and children related activities shared by the partners in the daily life. We focus on the main household chores (i.e. cleaning, cooking, laundry and shopping) and on two activities related to kids, helping with homework and playing.

Figure 4.1 graphically presents average hours spent in household tasks for women with and without children for the periods before and during the pandemic.[12] Unsurprisingly, the reported time spent in household chores was more important for women with children at home than for women without, both before and during lock-down. During the lockdown, we find a similar increase in the number of hours consecrated to the housework for the two groups of women. Moreover, the time spent by mothers in the educational activities with their kids considerably increased during the lockdown, from an average of 2 to more than 8 hours per week.

from the authors upon request.

[12]We asked women the total number of weekly hours they devoted before and during the lockdown to the three following chores: cleaning, cooking and laundry. The time spent on shopping was not asked here because this activity can be reasonably assumed to be constant across the two periods. Using the *Enquête Emploi du Temps* from INSEE in 2010, we also find that this activity counts for less than 15% of the total of time spent in the major housework activities mentioned in our survey.

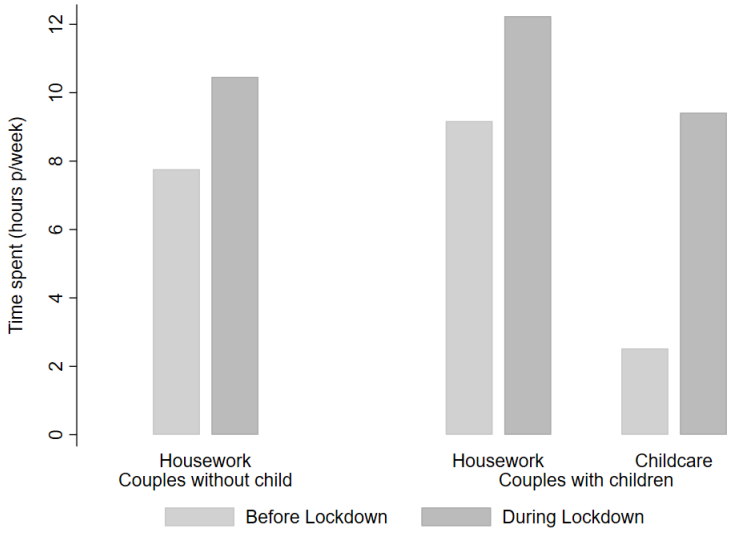


Figure 4.1 – Time spent by women into household tasks

Respondents also reported the division of time between partners for each household chore before and during the lockdown. We draw this information using a Likert scale on woman participation in household chores, from which we created an index for the women’s share of household chores.[13] This index is obtained by computing the mean of women participation in all tasks and ranges between 0 and 1. Correspondingly, we defined the men’s share as the reversed women’s involvement, i.e. 1 minus the women’s share.

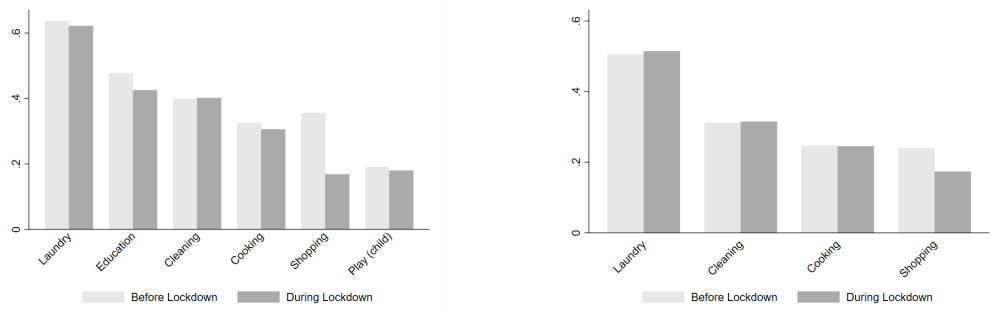
Using the kernel density of this index of the housework division between the partners, we show that, on average, couples with children experience a more unequal household tasks’ distribution (Figure 4.9). We also note that the two types of couples do not diverge in terms of distribution of the index for the situations where male partner assume most of the housework burden.

Figure 4.2 shows for each task the gender gap in the division of the housework.[14]

[13] For each task, we asked the question "Who is doing the activity in the considered period ?". Respondents had the following choices: "always me"; "me most of the time"; "my partner and me equally"; "my partner most of the time"; "always my partner"; "another person". We attribute the values 1, 0.75, 0.5, 0.25 and 0 respectively to the first five previous options. Only a minority of respondents replied that another person took care of some tasks before the lockdown (less than 1%, except for the cleaning who was carried out by 4.4% by another person), while during the lockdown, all tasks were assumed at 99% by the respondent or partner. We attribute the value of 0.5 in the case where another person was doing the task.

[14] We computed the gender gap as the difference between the women’s share and the men’s share. When the gender gap is zero, the task is equally distributed among partners, while a negative gap means that men take care for most of the burden.

First of all, we notice that women continue to do the lion's share of the housework even during the pandemic as the tasks gap between partners remains positive. This finding is consistent with national data provided from the French national statistics institute, Insee, in Barhoumi et al. (2020). Second, we also observe that gender gaps before the lockdown are systematically higher for couples with children, indicating that the additional burden due to the presence of kids is mostly taken by women. Couples with children knew on average a strong reduction of the gap in shopping activities, while fathers also increased their participation in all activities except cleaning. Conversely in couples without children, men did not rise their share for most of the tasks, except for shopping which presents the highest redistribution. This is similar to results found in the literature by Mangiavacchi et al. (2020) in Italy and by Farré et al. (2020) in Spain, where the gender gap on shopping became negative during the lockdown.

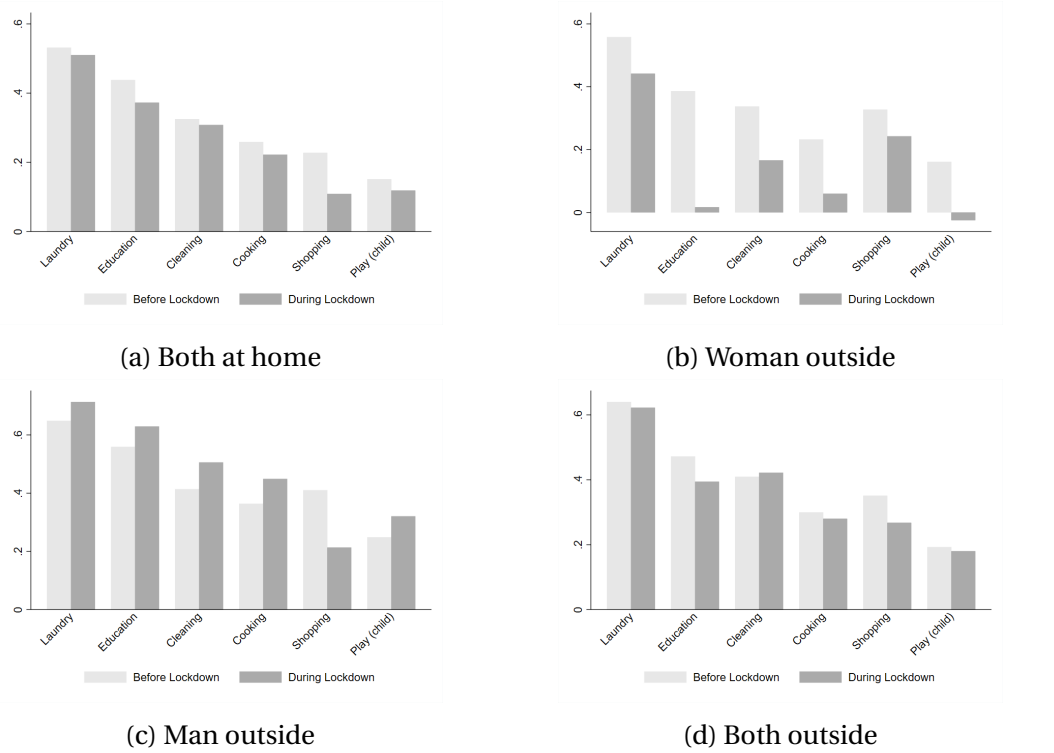


(a) With children (b) Without children

Figure 4.2 – Tasks gap between partners into the household

The lockdown in France was accompanied by government statements promoting teleworking when it was possible. We consequently differentiate in our survey four types of confinement status for couples: those where both partners worked outside during lock-down (1), those where only one out of the two partners worked outside, either the woman (2) or the man (3), and couples where both partners stayed at home (4). Figure 4.3 illustrates the evolution of the gender gap in housework and childcare across the four groups, computed on both couples with and without kids (except for children related activities). We observe a higher reduction in the gender gap when the woman only worked outside during the lockdown. Conversely, when men was the only one who worked outside, we observe an increase in the gender gap for all activities, except for shopping. Descriptives also indicate a very low reduction in the gender gap when both partners were working outside and when both were at home. These findings denote the high heterogeneity in the intrahousehold division of housework

and childcare due to the confinement status of the partners.



(a) Both at home

(b) Woman outside

(c) Man outside

(d) Both outside

Figure 4.3 – Tasks gap between partners into the household (couple types)

We also explored the heterogeneity of the gender gap reduction across women education level. Our result indicates that the gender gap in housework and childcare before the lockdown is lower in couples for which woman has an education level above high school diploma.[15] During the lockdown, we observe an higher reduction of this gap on education activities with kids for women having an university degree, while there is no other difference across women's level of education for the other tasks.

4.3.2 Model and results

Model

In this section, we question if the lockdown challenged the intrahousehold equilibrium of the couple. Our specification applies a basic panel fixed effects model with two

[15] We do not present the figures for this heterogeneity in this paper. Descriptives are available from the authors upon request.

time periods, before and during the pandemic, estimated as following:

$$Share_{its} = \theta_0 Lockdown_t + \theta_s Lockdown_t \times Status_s + \gamma X_{it} + u_i + \epsilon_{its} \quad (4.1)$$

Here, we denote with $Share_{it}$ the share of the housework done by the woman i in the period t and in the confinement status s. As described in the Section 4.3.1, our outcome is the simple average of the women's shares on each domestic task. We obtain a global index for the housework distribution taking values from 0 when all tasks were made by the partner to 1 when all tasks were made by the woman. This outcome does not include childcare related activities. For couples with kids, we also use an alternative outcome which computes both the average shares of the childcare and the housework done by the women.

As variables of interest, we simultaneously use the temporal dummy, called $Lockdown_t$, equal to 1 when the period is the lockdown, and its interactions with the different confinement status of the couple $Status_s$. Dummies related to the three couple situations for which one partner is working outside during the pandemic, $Status_s$, are described in the previous Section 4.3.1. The coefficient θ_0 consequently captures the effect of the lockdown on the tasks distribution when both partners stayed at home and θ_s are coefficients capturing the conditional effect to each s situation: (1) when the woman was working outside, (2) when the man was working outside, (3) when both partners were working outside. Therefore, we need to interpret total effects as $\theta_0 + \theta_s$ for each s situation. We also control for the labor market participation of the respondent and her partner: vector X includes a dummy equal to one if the respondent is working at the considered period and a similar dummy for her partner. These time-variant covariates allow us to take into account the change in the labor market which was heavily affected during the pandemic. u_i captures time-invariant characteristics for each respondent and household. ϵ_{its} is the error term.

Results

Main results are presented in Table 4.1. Column 1 presents the results of the specification in Eq. 4.1 on the full sample of respondents. These first results show that the effects of the lockdown on the housework sharing are heterogeneous across the confinement status. We add in column 2 an interactive term between the lockdown variable and a dummy equal to one for couples with kids. The coefficient in front of this interactive term is significant and positive, meaning that the effects for couples where both partners stay home (i.e. the reference category) are different according to

the parent status. We consequently provide subsample analysis on couples without and with kids at home during the lockdown. These estimates are shown in column 3 and column 4, respectively.

These subsample analysis are graphically presented in the Figure 4.4, where we draw point estimates, 90% and 95% confidence intervals, as well as the sample distribution allocated for each confinement situation.[16] For couples having kids at home, we find that there is a more equal division of the housework during the lockdown when both partners stayed at home. When the woman was the sole working outside the home, we find that the redistribution is stronger in her favour. On the other hand, when the man was the only one to work outside or when both partners worked outside, there is any significant change of the housework division during the pandemic. For couples without kids, we find that the distribution of the housework during the lockdown has not significantly changed, regardless of the confinement status.

Using as outcome an index based on both housework and childcare related activities, we estimate the Eq. 4.1 and present the result in the column 5 of the Table 4.1 for the couples with children. Effects are also graphically presented in Appendix, Figure 4.10. Our results remain stable to the inclusion of the childcare division in the outcome for most of the cases, except for the case where both partners worked outside during the lockdown which becomes significant.
In order to disentangle if the results presented above are driven by some of the task we included in our composite index, we re-estimate Eq. 4.1 using the share of work done by women in each activity as outcome. Results for couples with and without kids are graphically illustrated in Figure 4.5. We find that for couples with kids where both partners were at home, the redistribution effect is only led by shopping and playing with kids. For the other activities, we observe a statu quo in the distribution of the task. When the woman is the sole household member working out of home, the man's contribution increases in all activities, except for shopping. This is the situation for which the redistribution is really effective between the partners. While we found a global no-effect when men worked outside during the lockdown, we note that they significantly reduced their participation in the main domestic tasks as cleaning, cooking or laundry as well as in childcare, while they only raised their contribution in shopping. When both partners worked outside, we only find a redistribution in favour

[16] Although we present the 90% confidence intervals in the Figure 4.4 and in the following figures, we consider results as strictly significant only for coefficients with a pvalue lower than 0.05.

Table 4.1 – Lockdown and household chores division between partners

	Full sample		No Children	With Children	
	(1)[a]	(2)[a]	(3)[a]	(4)[a]	(5)[b]
Lockdown	-0.0225***	-0.0120	-0.0177	-0.0297***	-0.0294**
	(0.00625)	(0.00785)	(0.0103)	(0.00520)	(0.0102)
Children (=1) × Lockdown		-0.0236**			
		(0.00884)			
Woman outside × Lockdown	-0.0272**	-0.0252**	-0.00767	-0.0384**	-0.0869***
	(0.0114)	(0.0113)	(0.0229)	(0.0154)	(0.0210)
Partner outside × Lockdown	0.0265***	0.0319***	0.0378*	0.0266***	0.0597***
	(0.00809)	(0.00902)	(0.0182)	(0.00742)	(0.0109)
Both outside × Lockdown	0.00399	0.00785	0.000531	0.0105	0.00560
	(0.00901)	(0.00936)	(0.0137)	(0.0120)	(0.0244)
Work (Woman)	-0.0296*	-0.0296*	-0.0405**	-0.0213	-0.0464**
	(0.0148)	(0.0149)	(0.0171)	(0.0174)	(0.0164)
Work (Man)	0.0533***	0.0497***	0.0434**	0.0539***	0.0340**
	(0.00933)	(0.00907)	(0.0190)	(0.00904)	(0.0146)
Observations	5,688	5,688	2,458	3,230	3,230
R-squared	0.860	0.861	0.873	0.851	0.838
Labor market controls	Yes	Yes	Yes	Yes	Yes
Individual fixed effects	Yes	Yes	Yes	Yes	Yes

All results were estimated using fixed effects model based on panel data from EICM online survey collected in France from April 21 to 10 May 2020. Sample selection retains only partnered women respondents. Lockdown is a variable equal to one for confinement period. Children is a dummy equal to one if the couples lived with at least a child during the lockdown. Columns 1 to 2 present results on the full sample selection. Column 3 focus on couples without children. Columns 4 to 5 present results on the subsample of couples with at least one child.

All specifications use the covariates of the Eq. 4.1. We include the $Status_s$ referring to the confinement status of the members of the household as presented in Section 4.3.1. $Status_s$ are interacted with $Lockdown_t$ and presented according to the label of the category. The category of reference is when both partners stayed at home during the lockdown. Other covariates are related to the women and partners' labor market participation (here, Work (Woman) and Work (Man)).

[a] : these estimates use as outcome the housework division, $Share_{it}$, as presented in the Eq. 4.1.

[b] : this estimate uses as outcome a combined index using the average share of the childcare and the housework done by the woman.

Each estimates controls for individual fixed effects. Standard Errors in parentheses are clustered at regional level. ***, ** and * indicate significance at the 1%, 5% and 10% levels respectively.

of women in doing homework with kids. [17]

For couples without kids, although the global housework index was non-significant, we observe a reduction in the woman's contribution in shopping activity for confined couples, even if this decrease is narrower than for couples with kids in the same situa-

[17] This result explains why we find a significant effect of lockdown on the share only when we include childcare in the index for couples where both partners worked outside.

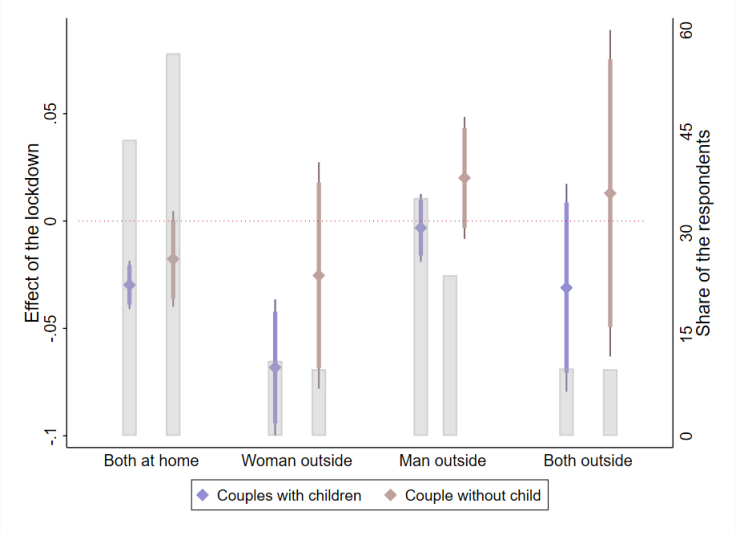


Figure 4.4 – Effects of the lockdown on the housework division

Note: This figure presents the effects of the lockdown on the housework division between partners on subsamples of couples without and with children. Marginal effects of the lockdown are directly computed from the coefficients presented in the Table 4.1, columns 3 and 4, setting for different values of $Status_s$, confinement status of the couple, *i.e.* "both at home" ; "woman outside" ; "man outside" ; "both outside". The left axis reports marginal effects values and the right axis reports the distribution of the confinement status among the subsample population.

tion. Interestingly, we also observe that women do more in the laundry activity when men worked outside during the pandemic. Other results for couples without kids are non-significant.

We can conclude that on average the lockdown did not lead to a large change in the intrahousehold division of the domestic chores. Changes are concentrated almost exclusively on couples with kids with at least one of the two partners being confined at home during the lockdown. In those situations where only one of two parents was working outside, the other was logically raising its contribution. Furthermore, for the shopping, the households rationally promoted the partner who was already out of the dwelling for working as in charge of this activity. The global effect of the households chores redistribution for couples who stayed at home during the pandemic is mainly due to the increase of men's participation in shopping and on a less extent to the increase of fathers' contribution in playing with kids activity. The effect found on shopping could be symptomatic of a circumstantial intrahousehold change rather than a structural one. This change can be explained with two alternative

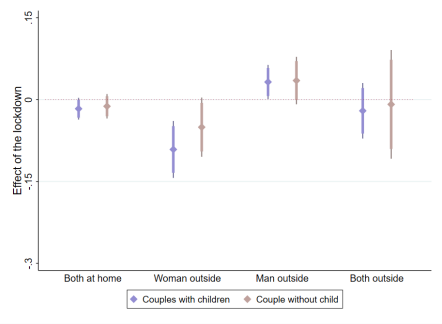
or complementary hypotheses. First, shopping could have been considered as a risky activity due to the pandemic, and men could have assumed their traditional role of 'protector' of the family, taking the risk upon themselves. In this scenario, shopping was likely to became a male-connoted task and partners conform to social gender roles (Couprie et al., 2020). A second explanation relates to the specific nature of shopping during the confinement. In a situation in which individuals had to stay at home and were only allowed to go out for essential tasks, shopping became an interesting activity (especially for those people working from home). Going to shopping might represent for them an escape from the forced cohabitation and can be seen as a kind of leisure. Remark that shopping is an activity that is traditionally carried out by women (before the lockdown, the women's share for shopping was on average at 67 per cent). The increase in the involvement of men in shopping during the lockdown suggests that the gendered nature of a task seems to respond to its (changing) attractiveness rather being a stable, essential feature of the task. Compared to the other tasks, shopping is also well identified by other household members during the lockdown and could help the protagonist to bargain his lower involvement in other housework.

4.4 Intrahousehold conflicts occurrence and household chores division

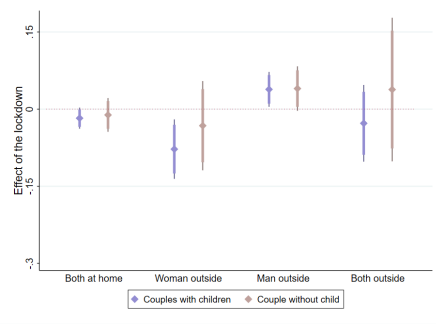
In this section, we investigate the link between the share of household chores realized by women and the occurrence of the conflicts among partners.

4.4.1 The conflict measure

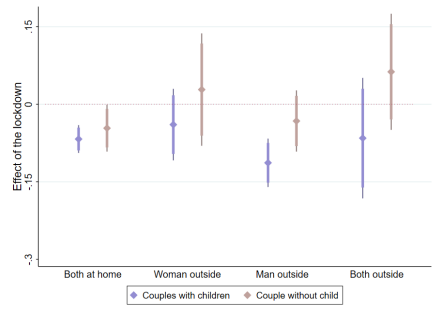
In the survey, each sampled woman reported if she has experienced more or less conflictual situations with her partner during the lockdown compared to the usual time. Figure 4.6 shows the proportion of women (with and without children) who declared having experienced more or fewer conflicts during the lockdown compared to the previous period. If most of the respondents did not declare any change, 28% of respondents with kids and 22% without kids reported an increase of the occurrence of conflict. Interestingly, this divergence between the types of couples is complying with data from the Insee's report about the French family during the lockdown, where couples with children are more likely to report disputes between partners (Barhoumi et al., 2020). For couples with children, the proportion of respondents declaring more



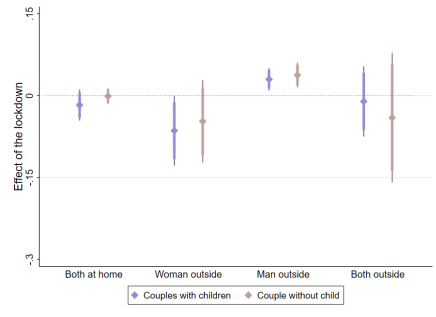
(a) Activity: Cleaning the household



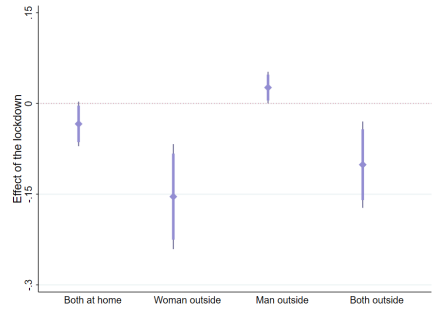
(b) Activity: Cooking



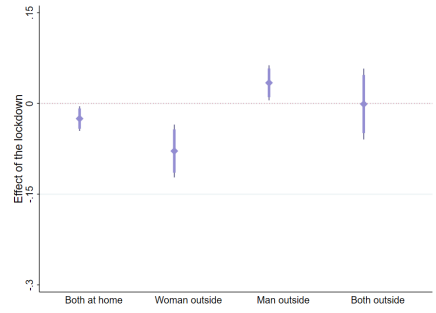
(c) Activity: Shopping



(d) Activity: Laundry



(e) Activity: Homework with children



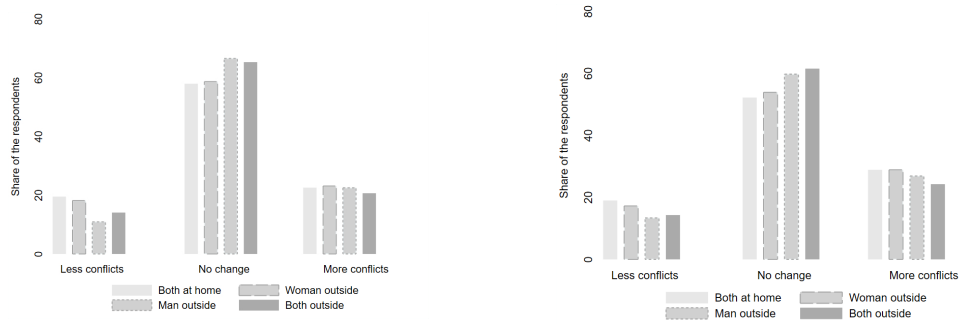
(f) Activity: Playing with children

Figure 4.5 – Effects of the lockdown on the household chores division

Note: These figures present the effects of the lockdown on the division between partners of each household chore on subsamples of couples without and with children. Marginal effects of the lockdown are directly computed from the estimated coefficients of the Eq. 4.1 using as dependent variable the share done by woman in each activity and setting for different values of $Status_s$, confinement status of the couple, *i.e.* "both at home" ; "woman outside" ; "man outside" ; "both outside".

conflict is slightly higher when the two adults stayed at home during the lockdown, or when the woman was the sole outside worker. For the couples without children, the share of women reporting more conflict is slightly lower when both individuals were

working outside with regard to the other situations.[18]



(a) Without children

(b) With children

Figure 4.6 – Occurence of the conflicts into the households

In what follows, we investigate the effect of the lockdown on the conflict occurrence among partners as well as the relationship between conflicts and household chores division in confinement. More specifically, we wonder if the limited increase in the male participation into the household chores illustrated in the previous section reduced the likelihood of conflict occurrence in the couple.

4.4.2 Model and results

Model

In order to capture the effects of the lockdown and of the sharing of household tasks on conflict occurrence, we use as dependent variable $Conflict_{it}$ a dummy that take the value of one when the woman i experiences a more conflictual relationship with her partner at time t. Thus the dummy is equal to 1 at time t_0, before the lockdown, if the couple's relationship improved during the lockdown, and zero otherwise. Symmetrically, the outcome is equal to 1 at time t_1 if the relationship worsened, and zero otherwise. For a couple that did not experience any change, the dummy is equal to 0 for both periods t_0 and t_1.
We estimate a basic fixed effects model, as:

$$\begin{aligned} Conflict_{it} = \theta Lockdown_t + \alpha Share_{it} + \beta Share_{it} \times Lockdown_t + \\ \theta_s Lockdown_t \times Status_s + \gamma X_{it} + u_i + \epsilon_{it} \end{aligned} \tag{4.2}$$

[18] Investigating other dimensions which could led to an increase of conflict, descriptives do not show that income inequality increases or decreases the occurrence of conflict.

where $Share_{it}$ denotes our main variable of interest, representing the average share of household chores done by the woman. More specifically, as in Section 4.3.2, we use two different indicators for $Share_{it}$: (i) the woman's share of housework and (ii) a composite indicator combining both housework and childcare activities.

Interacting this variable with $Lockdown_t$ allows us to capture the specific effect of the woman's share of tasks during the lockdown. As in Eq. 4.1, we control for the specific role played by the confinement status of the couple, interacting $Status_s$ with $Lockdown_t$. X_{it} is a vector of covariates that includes the employment status of the respondent and her partner before and during the pandemic. u_i captures time-invariant characteristics for each respondent and household. ϵ_{it} is the error term.

Results

We report results in Table 4.2. Column 1 first presents a parsimonious specification with $Lockdown$ and its interactions with $Status_s$ as sole variables of interest and X as other covariates for the full sample of respondents, i.e. for couples with and without children. From this result, we find that in average the occurrence of conflicts increased during the lockdown. In column 2, the specification adds the $Share_{it}$ variable and its interaction with the lockdown, on the full sample as well. Column (3) reports the results for the same model for couples without kids only, while column (4) for couples with kids only. Finally, the last column reports the coefficients on the with-kids-sample using as housework division variable the composite indicator with housework and childcare activities (column 5).

Given the number of interactive variables that are included in our models, we can not directly interpret the coefficients reported in Table 4.2 but rather total effects and non-linearity analysis.[19] In order to clearly illustrate the results, we have drawn Figure 4.7 and Figure 4.8 reporting the results of the columns (3) and (4) respectively. These figures show the effect of the lockdown across the four different confinement situations and for all the possible values of the $Share_{it}$ variable.[20] We also present in

[19]Because of all the interactive terms into the Eq. 4.2, θ captures the effect of the lockdown when both $Share_{it}$ and $Status_s$ are equal to 0. The magnitude of the coefficient β measures the average effect, giving us the intuition whether the lockdown has a significant different effect conditionally to the value of the women's share and compared to the situation where the women's share equals zero (represented by the coefficient θ). As $Share_{it}$ is a continuous variable from 0 to 1, we need to perform non-linearity analysis according to the value of this variable in order to interpret the total effect. Moreover, as we included interactive terms between the lockdown dummy and the couple's confinement status among the controls, we also need to interpret each couple's situation during the pandemic.

[20]Concretely for couples with both partners at home ($Status_s = 0$), it means interpreting total

these figures the distribution of $Share_{it}$ during the lockdown across the subsample as well as the number of respondents in each confinement situation.

In the Figure 4.7 for couples without kids, we observe that only situations in which the woman was at home during the lockdown (87 per cent of women without kids) lead to a significant increase in the occurrence of the conflicts (Panels (a) and (c)). These effects become significant and positive when women did more than three quarters of the housework. Even if positive, the magnitude is low for couples where both partners stayed at home. In both these two confinement situations, few households are affected by the situation of an increase of conflicts during the lockdown due to the housework division because conflictual situations appeared only for the very unbalance cases of housework distribution.

For couples with kids, Figure 4.8 shows that there is a significant and positive relationship between women's share of housework during the lockdown and the increase of conflicts regardless of the couple's confinement status. When both partners worked outside during the lockdown, the effect is only significant and positive for extreme unequal intrahousehold distribution, i.e. for which women did almost totally the housework. Only a few sample couples (161) are in this confinement situation. When only the father was working outside, the turning point in the womens' share of housework from which we observe a significant effect on conflict is lower than in the previous situation (72 per cent), indicating that the tolerance for an unequal distribution of chores is lower in this case. In this subsample, most of the couples of this subgroup experienced conflictual situation, because of the large prevalence of an unequal housework division during the lockdown. Finally, when the father stayed at home (i.e. when both parents stayed at home or only the mother was working outside), even a slight imbalance of the housework distribution leads to an increase of conflicts during the lockdown. Couples with partners both at home and couples with woman as the sole outside worker do not diverge on the housework threshold above which the division increased the occurrence of conflicts (respectively 59% and 56% of the women's share of housework). However notable differences emerge in the magnitude of the effects: as expected the effect is stronger when only father stayed at home, meaning that the risk of conflict is higher in this case. Adding the childcare division to

effects $\theta + \beta \times Share_{it}$, and computing this combined coefficients' values and standard errors for each potential value of $Share_{it}$ between 0 and 1; for couples where the woman was working outside during the lockdown $\theta + \beta \times Share_{it} + \gamma Status_s$ = only woman working outside; when the man was working outside: $\theta + \beta \times Share_{it} + \gamma Status_s$ = only man working outside; and when both were working outside: $\theta + \beta \times Share_{it} + \gamma Status_s$ = both partners working outside.

our variable of interest, we find similar results, that are presented in column 5 of Table 4.2 and illustrated in the Figure 4.11.[21]

The divergence of housework threshold among the confinement statuses highlight different tolerance thresholds for an unbalanced division of household chores, higher when the male was working outside than when it was the female. This evidence could raise the issue of a continuity of the legitimization of the male status into the households. Even during the lockdown, when household chores quantitatively increased, males keeped their privileged position. Indeed, more conflictual situations are likely to appear only with a very high imbalance when they are outside, therefore legitimizing their potential non-participation in housework.

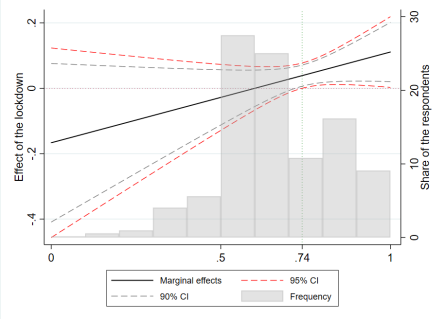
We then look in detail at the role of each activity in the occurrence of the tensions among parents.[22] Running the same model as in Eq. 4.2, we replaced the variable of interest, $Share_{it}$, by each share of the housework and childcare tasks done by the women. Estimated coefficients are presented in Appendix, Table 4.5. As for the previous models, we cannot directly interpret the results using the unique coefficients. Once computed global coefficients and standard errors, we graphically illustrate the results for each of the four confinement status in Appendix Figure 4.12 for couples where both parents stayed at home, Figure 4.13 (Figure 4.14) for couples when the mother (father) was the only to work outside, and Figure 4.15 for couples when both parents worked outside.
For this latter situation, we find a significant and positive effect only for the activity named playing with children and exclusively for a very unequal division of the task. For all the other situations of confinement, increasing the woman's participation in any household chores during the lockdown increased the occurrence of intrahousehold conflicts. Remarkable differences emerge across activities, the magnitude of coefficients is systematically higher and the slope steeper for cleaning and for the two activities related to childcare. Indeed we can observe in Table 4.5 that for these three activities the average effect is significant at conventional confidence levels.
This means that conflicts in the couples particularly arose during the lockdown when women increased their participation in house cleaning and in childcare. Concentrating most of the housework time and being female-connoted, cleaning is perceived

[21] The only difference is that the tolerance threashold lowers to 85 per cent when both partners worked outside when childcare is included in the index.

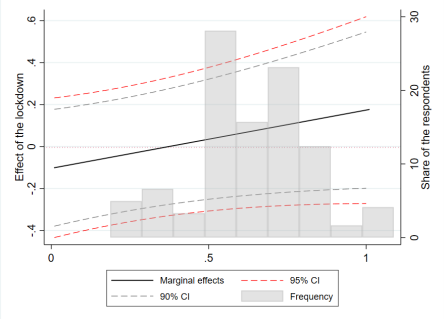
[22] Because of the small effects we found on couples without kids, here we only focus on couples with kids.

by women as the domestic activity which has fuelled the intrahousehold conflicts. Looking from the opposite side, we could say that an increase in male participation in these activities would significantly reduce the conflict between spouses in the lockdown period. Only a marginal reduction of conflicts is predicted when men increased their participation in the other household task, included shopping.

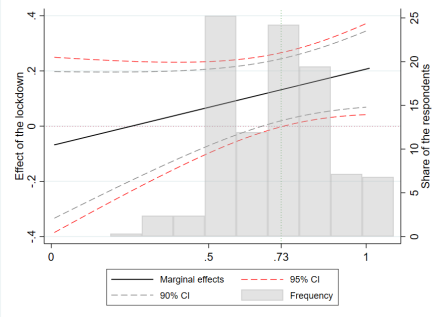
This indicates that the increased partner's contribution, notably in shopping, that was observed during the lockdown (see Section 4.3.2) did not allow to reduce significanly conflicts between partners. It is likely that the male's involvement in shopping is not considered as tough enough to balance the increase in the woman's burden during the lockdown. This last finding weakens the first explanation that we advanced in Section 4.3.2, and illustrate that the change of behaviour that we could assess from the male partner is rather circumstantial than structural, i.e. does not challenge the gendered stereotypes at home.



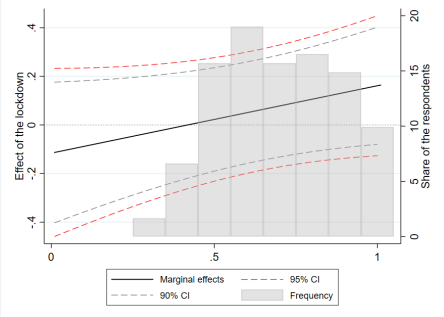
(a) Both at home (N=695)



(b) Woman outside (N=121)



(c) Man outside (N=293)



(d) Both outside (N=121)

Figure 4.7 – Effects of housework division on conflicts - Couples without children

Note: These figures present total effects of the housework division during the lockdown on the conflict occurrence between partners for couples without children. These effects are directly computed from the coefficients presented in the column 3 of the Table 4.2.

Table 4.2 – Lockdown and effects of the household chores division on the occurrence of conflicts

	Full sample		No Children	With Children	
	(1)	(2)	(3)	(4)	(5)
Lockdown	0.0810**	-0.142	-0.167	-0.0910	-0.257**
	(0.0288)	(0.0937)	(0.148)	(0.108)	(0.0923)
Housework share		0.0414	0.0320	0.0633	
		(0.158)	(0.312)	(0.238)	
Housework Share × Lockdown		0.338**	0.277	0.375***	
		(0.118)	(0.198)	(0.0983)	
Housework and Childcare Share					-0.104
					(0.227)
H. and C. Share × Lockdown					0.625***
					(0.117)
Woman outside × Lockdown	0.0545	0.0667	0.0627	0.0641	0.0812
	(0.0935)	(0.0961)	(0.194)	(0.0581)	(0.0550)
Partner Outside × Lockdown	0.0501	0.0209	0.0958	-0.0586	-0.0766
	(0.0441)	(0.0458)	(0.0646)	(0.0958)	(0.0996)
Both Outside × Lockdown	-0.0162	-0.0332	0.0506	-0.117	-0.121
	(0.0676)	(0.0646)	(0.131)	(0.0820)	(0.0806)
Observations	5,688	5,688	2,458	3,230	3,230
R-squared	0.507	0.512	0.511	0.517	0.521
Labor Market Controls	Yes	Yes	Yes	Yes	Yes
Individual Fixed Effect	Yes	Yes	Yes	Yes	Yes

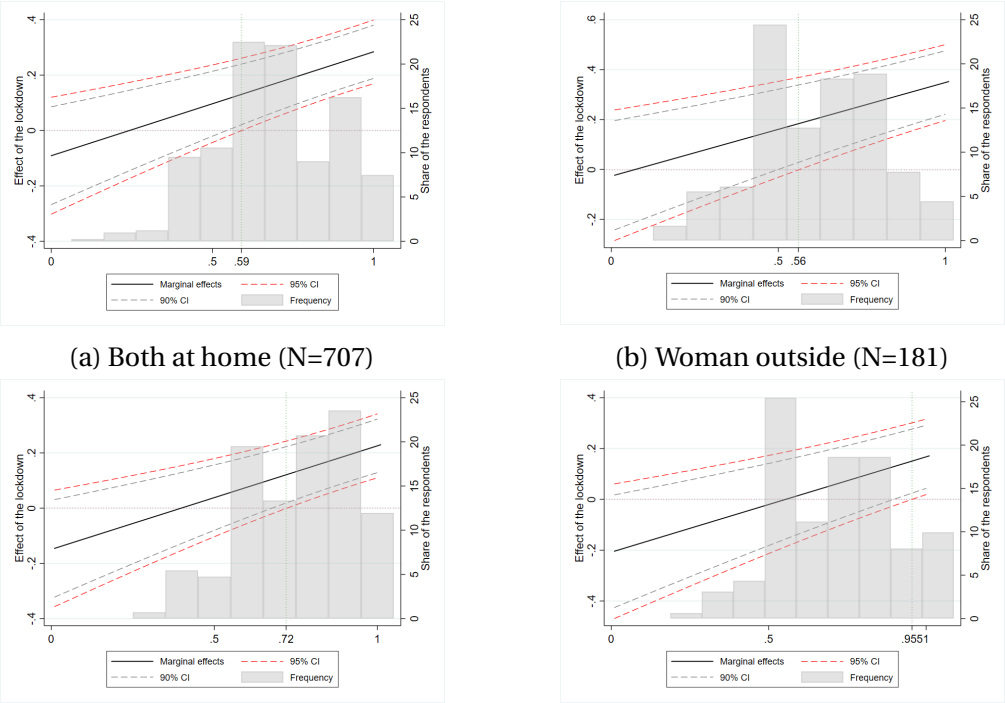
All results were estimated using fixed effects model based on panel data from EICM online survey collected in France from April 21 to 10 May 2020. Sample selection retains only partnered women respondents. Lockdown is a variable equal to one for confinement period. "Housework share" is the average share of housework done by the woman in the household, hence related to the intrahousehold housework division. "Housework and Childcare Share" is an index combining both latter measures. Columns 1 to 2 present results on the full sample selection. Column 3 focus on couples without children. Columns 4 to 5 present results on the subsample of couples with at least one child.

All specifications use the covariates of the Eq. 4.1. We include the $Status_s$ referring to the confinement status of the members of the household as presented in Section 4.3.1. $Status_s$ are interacted with $Lockdown_t$ and presented according to the label of the category. The category of reference is when both partners stayed at home during the lockdown. Other covariates are related to the women and partners' labor market participation.

Each estimates controls for individual fixed effects. Standard Errors in parentheses are clustered at regional level. ***, ** and * indicate significance at the 1%, 5% and 10% levels respectively.

4.5 Conclusion

The allocation of household chores within couples is typically stable over time, with a gendered connotation of a large number of tasks (Akerlof and Kranton, 2010). The Covid-19 epidemic, and the ensuing lockdown that has been adopted in Spring 2010



(a) Both at home (N=707)

(b) Woman outside (N=181)

(c) Man outside (N=569)

(d) Both outside (N=161)

Figure 4.8 – Effects of housework division on conflicts - Couples with children
Note: These figures present total effects of the housework division during the lockdown on the conflict occurrence between partners for couples with children. These effects are directly computed from the coefficients presented in the column 4 of the Table 4.2.

by a large number of countries, has brought a sudden and unprecedented shock to this stable allocation. The lockdown has changed the amount of household chores to be performed, notably with a major increase in the time devoted to children who were constrained to home schooling, and with a reduced reliance on domestic workers. The time spent by french women doing housework increased by about 30 per cent, while they multiplied on average by three the time in helping children with their homeworks. The lockdown has also modified the opportunities to perform household tasks, and it has also given a “quasi-leisure" connotation to some household chores at a time in which the opportunity for usual leisure activities (or for simply going out of home) was greatly limited. Furthermore, the anxiety for the evolution of the epidemic and of its ensuing economic consequences, the disruption of social life and a forced cohabitation also contributed to increase the likelihood of the occurrence of conflicts and tensions between partners, which might have been intertwined with the unequal character of the allocation of the (increased) burden of household chores.

Based on original collected data during the Spring 2020 confinement in France, we investigated (i) if and how the first lockdown induced a (re)division of household chores between french partners and (ii) if there was a relationship between household chores (re)division and intrahousehold conflict.

The data analysis reveals that typical roles in the allocation of the household chores between couples have persisted in France. Women have taken care of most of the household chores, from 60 to 80 per cent according to the task, with a lower male participation in laundry, cleaning and in doing homeworks with kids (activities that individuals usually dislike). The confinement did not changed this situation as the gender gap remained positive for all activities surveyed.
During the lockdown, substantial heterogeneities were observed on the task (re)distribution and conflicts among partners, notably according to the presence of children in the household and to the confinement status of the couple (i.e. if one, or both, or no partner was confined at home).
For the couples without kids, we did not observe on average any redistribution of household tasks. In that case, conflictual situations only increased with the share of work done by women for couples with an extremely unequal allocation of household chores, and when women were at home during the lockdown. For couples with kids, we also do not observe any changes in household chores division when both partners worked outside, except a small increase of father's engagement helping kids with homework. Conversely, when only one of two was staying at home, due to the unemployment or the remote working, this member increased its share in household chores. This is particularly clear when the female was the sole outside worker of home, because male's participation increased substantially in all tasks except in shopping. When man was the sole partner working outside, a disaggregation by tasks allowed us to observe that the increase in their participation in shopping was important in magnitude, and compensated the decrease in the participation in the other tasks. When both partners were confined at home, which count for 44 per cent of our sample parents, we observed a reallocation of tasks in favor of women but this effect was only led by two activities: shopping and playing with kids. For the other tasks, we indeed observed a statu quo in their division.

Facing to an quantitative increase of household chores, it is likely that fathers who were at home during the lockdown felt compelled to increase their domestic contribution. Nevertheless, when possible (i.e. when women was at home), they

preferred to increase only participation in activities already considered as enjoyable (as playing with kids, the task for which the gender gap was lower even before lockdown) or that became enjoyable given the limited set of activities out-of-home allowed during the lockdown (as shopping).

Conflicts among partners with kids increased with the share of household chores done by women, in particular when men stayed at home during the lockdown. Child-care and cleaning concentrated most of the tensions in the household, meaning that the unequal division of chores in these activities was perceived by women as a real intrahousehold inequality. This allows us to conclude that redistributing the burden of household activities during a stressful period, as the lockdown, helps to limit the disputes between partners, but the activities in which men engage are not neutral, i.e. conflicts do not notably decrease if men are involved in activities mostly seen as a leisure or "quasi-leisure".

According to our analysis, men behave in accordance to their gender role but their preferences are not stable, they adapt themselves to the contingent situation. A female-connoted activity like shopping became an almost exclusive prerogative of males when it gains in attractiveness. The gendered nature of a task seems thus to respond to its changing attractiveness rather than being a stable feature. This finding also illustrates that a possible change of male's preferences due to the constraints during the pandemic is able to modify the division of the household chores. However, this new negotiated equilibrium did not seem to be approved by women, since it did not imply a decrease in the risk of conflicts between partners. Our results indicate that women would rather prefer an higher men's involvement into less agreeable activities like cleaning. Finally, the lockdown missed the opportunity to redefine gendered roles at home and to impel a structural change at the intrahousehold level.

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Appendix

Appendix A. Descriptive Statistics and Figures

Table 4.3 – EICM Survey and INSEE data

	EICM Survey		INSEE Data	
Population	N	Perc.	N	Perc.
AURA	1382	24.27	3,502,191	11,98
Bourgogne	316	5.55	1,285,025	4.40
Bretagne	286	5.02	1,503,368	5.14
Centre	254	4.46	1,152,027	3.94
Corse	12	0.21	146,103	0.50
Grand Est	558	9.8	2,457,718	8.41
HDF	418	7.34	2,519,188	8.62
IDF	452	7.94	5,141,444	17.59
Normandie	294	5.16	1,475,918	5.05
N. Aquitaine	478	8.39	2,742,949	9.38
Occitanie	526	9.24	2,662,784	9.11
P. Loire	294	5.16	1,639,994	5.61
PACA	408	7.17	2,268,086	7.76
Outre-Mer	16	0.28	740,094	2.53
Education (Shares)	N	Perc.		Perc.
High school diploma or less	3,404	59.85		75.4
Above high school diploma	2,284	40.15		24.4
Undetermined				0.2

Data survey are from EICM online collected in France from April 21 to 10 May 2020.
Statistics for French population at regional level are from INSEE - "Le Recensement de la population" in 2016. N is the number of households. AURA is the acronym for Auvergne-Rhone Alpes. HDF is the acronym for Haut-de-France. IDF is the acronym for Ile-de-France. PACA is the acronym for Provence Alpes Cote d'Azur.
Education levels are data from INSEE - "Enquete Emploi" in 2019. We combine several categories for comparison with our data. Education level called "High School Diploma or less" gathers all respondents with a high school diploma at maximum. It means those with no education, a CAP, a Brevet (equivalent to apprenticeship or other professional diploma) or a french baccalauréat (equivalent to an highschool level). Education level called "Above high school diploma" gathers all respondents with a level higher than a french baccalauréat.

Table 4.4 – Summary statistics from the EICM survey

		Pre-lockdown		Lockdown	
	N	Mean	St. Dev.	Mean	St. Dev.
Shares (indexes)					
Woman's share of housework	2844	0.712	0.171	0.691	0.183
Woman's share of childcare	1615	0.680	0.184	0.668	0.206
Woman's share of housework and childcare	1615	0.715	0.147	0.691	0.164
Shares (single tasks)					
Woman's share of Shopping	2844	0.670	0.265	0.604	0.346
Woman's share of Laundry	2844	0.809	0.236	0.805	0.250
Woman's share of Cooking	2844	0.661	0.281	0.655	0.283
Woman's share of Cleaning	2844	0.706	0.236	0.701	0.248
Woman's share of Homeworks	1615	0.755	0.223	0.733	0.255
Woman's share of Playing with kids	1615	0.605	0.206	0.602	0.218
Conflicts					
Conflict between partners	2844	0.154	0.361	0.253	0.435
Panel covariates					
Woman is working	2844	0.758	0.428	0.564	0.496
Partner is working	2844	0.882	0.323	0.692	0.462
Confinement status					
Both at home	2844			0.453	0.498
Woman outside	2844			0.109	0.312
Man outside	2844			0.335	0.472
Both outside	2844			0.102	0.302

Data survey are from EICM online survey collected in France from April 21 to 10 May 2020. Sample retained for these summary statistics are only based on partnered women respondents.

"Woman's share" variables are directly linked to the housework division between partners. For each task, respondent could recall for the question "Who is doing the activity in the considered period ?" the following choices: "always me"; "me most of the time"; "equally"; "my partner most of the time"; "always my partner"; "another person". We attribute the value from 1 to 0, gradually to the women's involvement in the task. Then, we compute the average share done by the women in the global housework and childcare to obtain the indexes presented in the "Shares (indexes)" panel.

"Conflicts" is a dummy variable that takes the value of one for the period when the woman experiences a more conflictual relationship with her partner, and 0 for the other period.

"Panel covariates" are variables related to the labor market participation of the woman and her partner before and during the lockdown. These dummies are equal to one if the woman (partner) was working during the considered period.

"Confinement status" are variables equal to one if the couple were in the corresponding situation during the lockdown, 0 otherwise.

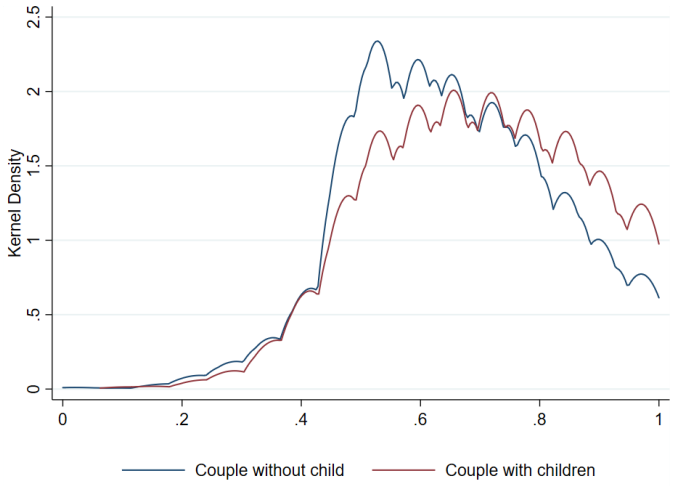


Figure 4.9 – Kernel density of the average share of the tasks

Appendix B. Estimates (Tables and Figures)

Table 4.5 – Conflicts and household chores division

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Lockdown	0.160**	0.0970	0.0711	0.0886	-0.0815	-0.122	-0.104
	(0.0597)	(0.0866)	(0.145)	(0.0663)	(0.102)	(0.0720)	(0.0599)
Shopping		-0.0345					
		(0.142)					
Shopping × Lockdown		0.106					
		(0.0799)					
Laundry			0.0262				
			(0.171)				
Laudry × Lockdown			0.112				
			(0.112)				
Cooking				0.169			
				(0.119)			
Cooking × Lockdown				0.117			
				(0.0884)			
Cleaning					-0.0211		
					(0.122)		
Cleaning × Lockdown					0.351***		
					(0.101)		
Homeworks						-0.289*	
						(0.152)	
Homeworks × Lockdown						0.386***	
						(0.0988)	
Play							-0.119
							(0.187)
Play × Lockdown							0.456***
							(0.132)
Woman Outside × Lockdown	0.0389	0.0340	0.0500	0.0619	0.0727	0.0649	0.0598
	(0.0571)	(0.0615)	(0.0580)	(0.0610)	(0.0481)	(0.0438)	(0.0479)
Partner Outside × Lockdown	-0.0245	-0.0307	-0.0357	-0.0471	-0.0585	-0.0501	-0.0542
	(0.0928)	(0.0878)	(0.0923)	(0.0957)	(0.0934)	(0.0963)	(0.0933)
Both Outside × Lockdown	-0.102	-0.108	-0.107	-0.102	-0.117	-0.112	-0.110
	(0.0800)	(0.0812)	(0.0803)	(0.0802)	(0.0821)	(0.0764)	(0.0774)
Observations	3,230	3,230	3,230	3,230	3,230	3,230	3,230
R-squared	0.510	0.512	0.511	0.514	0.518	0.518	0.520
Labor Market Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Individual Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes

All results were estimated using fixed effects model based on panel data from EICM online survey collected in France from April 21 to 10 May 2020. Sample selection retains only partnered women respondents. Lockdown is a variable equal to one for confinement period. Each column present as variable of interest the share done by the woman in their household for the considered chore interacted with the lockdown variable.
All specifications use the covariates of the Eq. 4.2. We include the $Status_s$ referring to the confinement status of the members of the household as presented in Section 4.3.1. $Status_s$ are interacted with $Lockdown_t$ and presented according to the label of the category. The category of reference is when both partners stayed at home during the lockdown. Other covariates are related to the women and partners' labor market participation.
Each estimates controls for individual fixed effects. Standard Errors in parentheses are clustered at regional level. ***, ** and * indicate significance at the 1%, 5% and 10% levels respectively.

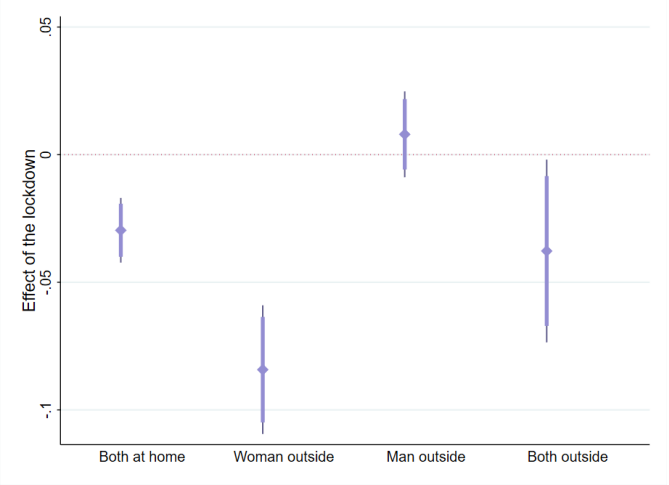
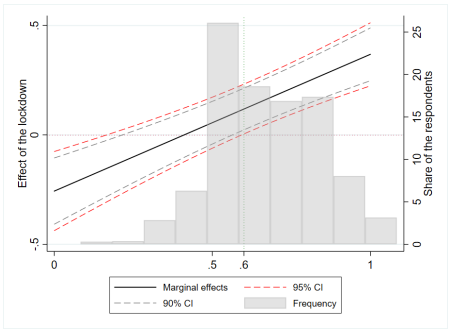
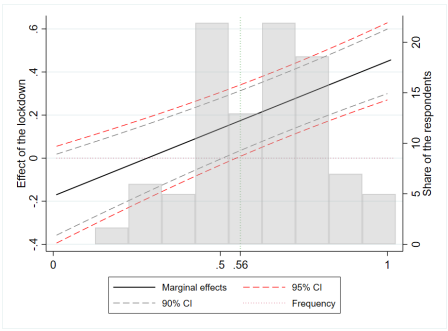


Figure 4.10 – Effects of the lockdown on the housework and childcare division - Couples with children

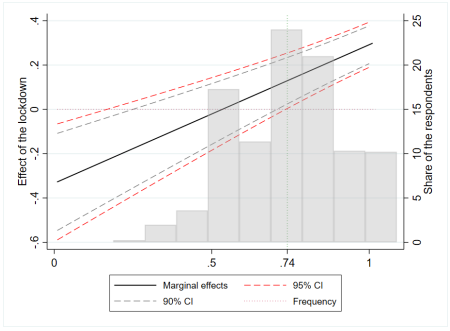
Note: This figure presents the effects of the lockdown on the household chores (housework and childcare) division between partners on the subsample of couples with children. Marginal effects of the lockdown are directly computed from the coefficients presented in the Table 4.1, column 5, setting for different values of $Status_s$, confinement status of the couple, *i.e.* "both at home" ; "woman outside" ; "man outside" ; "both outside".



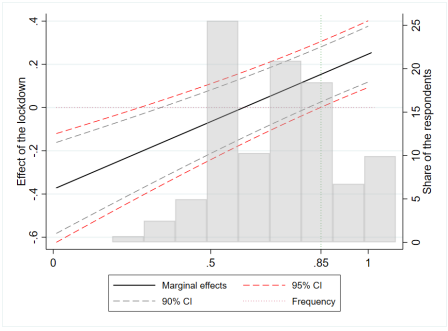
(a) Both at home (N=707)



(b) Woman outside (N=181)



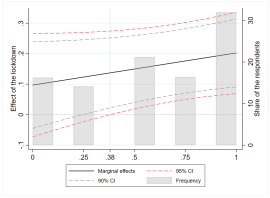
(c) Man outside (N=569)



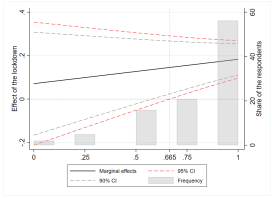
(d) Both outside (N=161)

Figure 4.11 – Effects of housework and childcare division on conflicts - Couples with children

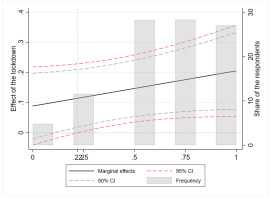
Note: These figures present total effects of the housework and childcare division during the lockdown on the conflict occurrence between partners for couples with children. These effects are directly computed from the coefficients presented in the column 5 of the Table 4.2.



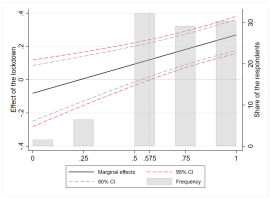
(a) Shopping



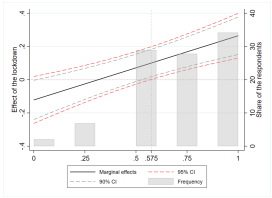
(b) Laundry



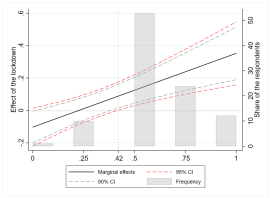
(c) Cooking



(d) Cleaning



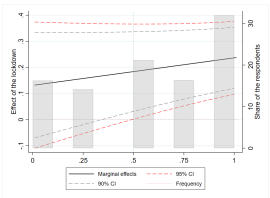
(e) Homework (Children)



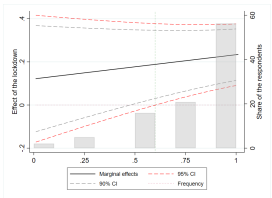
(f) Playing (Children)

Figure 4.12 – Effects of housework division on conflicts - Couples with children and both staying at home

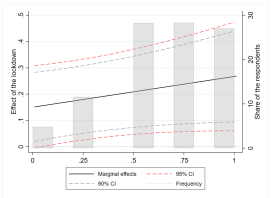
Note: These figures present total effect of the household chores division during the lockdown on the conflict occurrence between partners. Total effects are directly linked to the coefficients presented in the Table 4.5 when $Status_s$ is equal to 1 when both partners were confined at home.



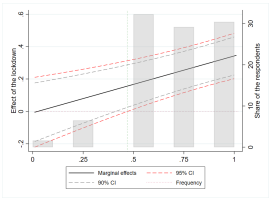
(a) Shopping



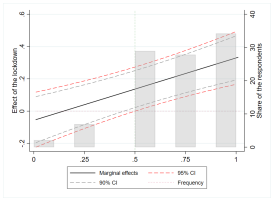
(b) Laundry



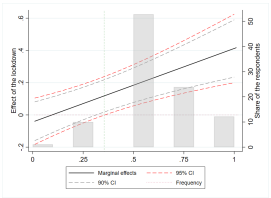
(c) Cooking



(d) Cleaning



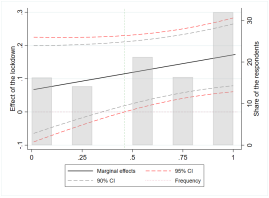
(e) Homework (Children)



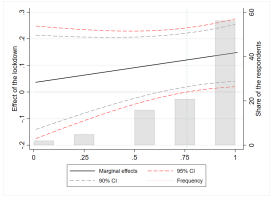
(f) Playing (Children)

Figure 4.13 – Effects of housework division on conflicts - Couples with children and woman working outside

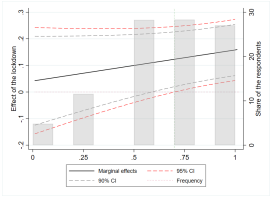
Note: These figures present total effects of the household chores division during the lockdown on the conflict occurrence between partners. Total effects are directly linked to the coefficients presented in the Table 4.5 when $Status_s$ is equal to 1 when the woman was the sole outside worker during the lockdown.



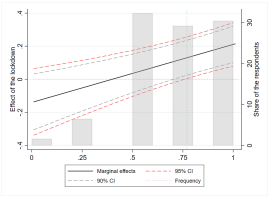
(a) Shopping



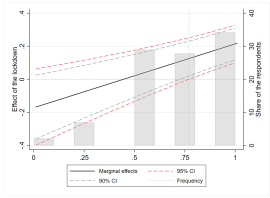
(b) Laundry



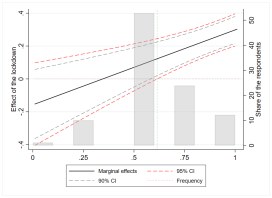
(c) Cooking



(d) Cleaning



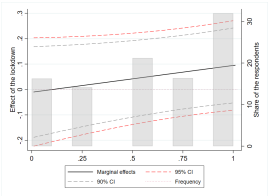
(e) Homework (Children)



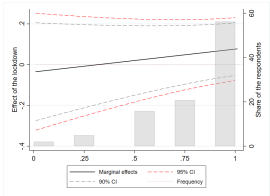
(f) Playing (Children)

Figure 4.14 – Effects of housework division on conflicts - Couples with children and man working outside

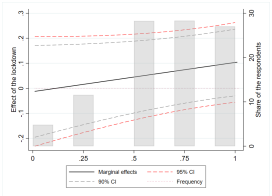
Note: These figures present total effects of the household chores division during the lockdown on the conflict occurrence between partners. Total effects are directly linked to the coefficients presented in the Table 4.5 when $Status_s$ is equal to 1 when the man was the sole outside worker during the lockdown.



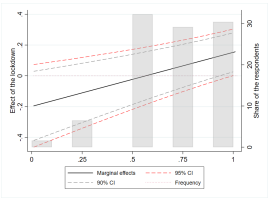
(a) Shopping



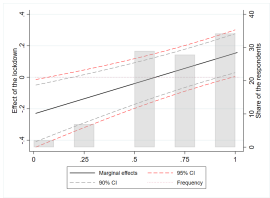
(b) Laundry



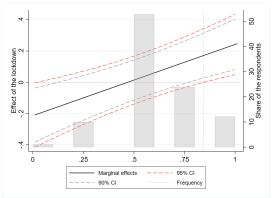
(c) Cooking



(d) Cleaning



(e) Homework (Children)



(f) Playing (Children)

Figure 4.15 – Effects of housework division on conflicts - Couples with children and working outside

Note: These figures present total effects of the household chores division during the lockdown on the conflict occurrence between partners. Total effects are directly linked to the coefficients presented in the Table 4.5 when $Status_s$ is equal to 1 when both partners were working outside during the lockdown.

Conclusion

Cette thèse compile trois essais sur l'économie du genre, centrés autour des questions afférentes au ménage, le mariage ou l'intra-ménage. A l'heure où il semble se dessiner une prise de conscience globale autour des questions des inégalités femmes-hommes dans les sociétés contemporaines, l'intérêt de mettre en exergue les éléments structurant ces déséquilibres est croissant dans l'ensemble des sciences sociales, dont la science économique. Si le genre est un *subfield* disciplinaire autant en vogue, c'est qu'il répond aussi à la nécessité de concevoir des politiques publiques adaptées pour prévoir et résorber ces situations.

Le Chapitre 2 porte sur l'influence des missionnaires religieux en Afrique de l'Ouest sur l'âge au mariage des jeunes femmes, avec les cas du Bénin et du Togo. Ces deux pays peuvent être considérés comme des vitrines de l'expansion religieuse chrétienne dans l'ex-AOF, en raison de l'investissement conséquent de ces missionnaires, notamment en biens publics comme l'éducation. Structurant une part des relations de pouvoir au sein du ménage, le mariage est une institution codifiée dans ses rituels et ses cérémonies. S'interroger sur les facteurs affectant l'âge de la mariée est primordial dans les pays où les mariages précoces sont nombreux. En s'appuyant sur des données historiques collectées aux archives nationales du Bénin et du Sénégal, nous avons pu retracer l'activité missionnaire, l'implantation des missions ainsi que leurs structures connexes à l'instar des écoles. Reliant ces données historiques à des données contemporaines sur la situation maritale des jeunes femmes, nous montrons que l'âge au mariage est positivement et significativement corrélé avec la proximité aux missions historiques, *i.e* plus une femme est proche des missions historiques, plus elle se marie tardivement. En outre, nous montrons que cet effet provient uniquement des missions avec une école de filles. Nous trouvons en parallèle un effet similaire pour le nombre d'années d'étude. En recherchant les mécanismes explicatifs de cette double corrélation, nous montrons que seules les femmes dont l'ethnie est recensée comme pratiquant la dot, *i.e.* une rétribution monétaire lors du

mariage du prétendant à la famille de la fiancée, sont sujettes à cet effet significatif. Ces pratiques culturelles sembleraient avoir un rôle prépondérant quant à la réponse des familles à l'offre d'éducation, réponse qui en augmentant le niveau d'éducation et le prix à la fiancée favoriserait des mariages tardifs.
La contribution de ce travail est donc double. De prime abord, il s'insère dans une thématique élargie d'investigation des effets de long terme des institutions religieuses, et notamment des missions, sur les indicateurs de développement, ici l'âge au mariage. Par ailleurs, ce travail participe à la compréhension des mécanismes entourant les rétributions monétaires lors du mariage. Un prolongement de ce travail pourrait se poursuivre avec la constitution d'une base de données complète autour des activités des missionnaires sur la région de l'Afrique Sub-Saharienne. Cette base pourrait non seulement considérer l'établissement d'une mission comme point d'ancrage d'une activité religieuse mais aussi fournir des informations sur les extensions potentielles des missions comme des dispensaires ou les écoles, à l'instar du travail présenté. Par ailleurs, de plus amples informations quant aux montants des échanges monétaires lors du mariage pourraient nous éclairer sur de potentielles hétérogénéités de comportement au sein des différents groupes concernés.

Le Chapitre 3 se focalise sur les dynamiques de décision à l'intérieur du ménage en étudiant les effets du Printemps Arabe Égyptien sur l'émancipation des femmes. Combinant à la fois des données géolocalisées relatives au soulèvement populaire et des données démographiques avant et après ces évènements, nous montrons que les femmes qui sont plus exposées aux manifestations augmentent leur pouvoir de décision au sein du ménage. Par ailleurs, l'utilisation d'un jeu de données alternatif sur la participation politique des femmes lors du Printemps Arabe nous permet de mettre en évidence un lien causal direct avec leur autonomisation au sein du ménage. Pour les femmes les plus exposées aux évènements, nous montrons aussi une diminution de la tolérance vis-à-vis de la violence domestique et de l'excision.
Si nous attestons bien d'un effet relatif à la participation politique, il reste néanmoins que dans ce chapitre, les effets de diffusion des valeurs afférentes à la révolution restent à éclaircir. Notamment, il revient de distinguer le jeu de la visibilité directe de l'action des femmes dans la rue et le rôle de l'intermédiation des réseaux sociaux. En outre, nous pouvons nous questionner quant à la temporalité de l'effet évalué dans notre travail, qui pourrait soit se circonscrire à la période retenue dans l'étude ou bien se prolonger au-delà. Des travaux prolongeant cette analyse pourraient donc être nécessaires à l'avenir pour attester de la permanence de l'effet. Pour autant, malgré

que cette amélioration ne soit pas durable, sa survenue dans un contexte conservateur démontre qu'aucune situation d'inégalité de genre ne peut être considérée comme immuable. En ce sens, ces résultats délivrent un message d'espoir aux générations futures.

Le Chapitre 4 a pour objet d'étude les effets du premier confinement en France sur le partage des tâches ménagères et les conflits au sein du couple. Nous montrons dans ce chapitre que le confinement n'a pas permis de redistribuer en profondeur les parts des tâches entre les partenaires, les femmes restant dans les mêmes proportions les plus grandes contributrices au travail domestique. Nos résultats mettent aussi en avant qu'une répartition en faveur des femmes n'a eu lieu qu'autour d'activités qui peuvent être considérées comme des "quasi-loisirs" en période de confinement. Nous montrons également qu'il y a en moyenne une augmentation significative des conflits durant cette période pour tous les couples. Pour les couples avec enfant, cette augmentation de l'occurrence des tensions est notamment associée à une répartition inégale des tâches entre les partenaires. Malgré une hausse du volume des tâches ménagères pendant le confinement, l'absence de renégociation des positions sur le travail domestique démontre l'échec d'une redéfinition des rôles au sein du couple, *i.e.* le maintien et un fort ancrage des stéréotypes de genre.
Si cet exemple interroge quant à la persistance de cette structure normative au cours du temps en France, nous pouvons aussi relever que cette situation a été subie et non-anticipée. En cela, l'échec à altérer, voire éliminer, les stéréotypes au sein du couple pourrait être tempéré. En révélant les inégalités au sein du ménage et devant l'impuissance à les résorber, le confinement fut une période de plus grande conflictualité. En montrant qu'il existe un lien entre la répartition des tâches ménagères et les conflits, nous pouvons aussi lire cette hausse de la conflictualité comme l'expression d'une nécessité de renégocier les places de chacun dans le couple. Une approche optimiste pourrait considérer qu'en cela le confinement a pu participer d'une prise de conscience des situations défavorables aux femmes et pourrait constituer la base d'une transformation des rapports de genre dans le couple. Ainsi, de futurs travaux seront nécessaires pour nous éclairer sur les conséquences à moyen terme de cette période.

Pour conclure, bien que nos travaux regroupés dans cette thèse peuvent paraître éloignés les uns des autres au prime abord, ils éclairent ensemble l'intérêt des études de genre et l'importance de ces thématiques quant à la perception et la compréhen-

sion des inégalités femmes-hommes. L'angle de l'intra-ménage et de la famille s'avère fondamental pour décrypter les rouages à l'œuvre dans le maintien des situations inégalitaires, et ce malgré la hausse du niveau de vie ou l'action des politiques publiques. La compréhension des mécanismes autour des situations défavorables aux femmes relève d'un impératif pour l'avenir, dans les pays en développement comme dans les pays développés. Derrière l'enjeu du genre résonnent les questions les plus essentielles de lutte contre la pauvreté et pour les droits humains. En outre, alors que les enjeux globaux se démultiplient avec la crise climatique ou sanitaire actuelle, il semble que la résilience face aux défis à venir n'aura lieu qu'avec l'intégration du plus grand nombre dans la prise de décision. En ce sens, lutter contre les inégalités de genre revient aussi à s'assurer de la visibilité des femmes et de l'écoute de leurs voix. Cette démarche participe à un monde de demain, plus démocratique, moins inégalitaire, dans le respect de l'intégrité de chaque individu et certainement plus en phase avec les solutions réellement durables qui se proposent à nous.