# Patterns of Female Employment in the Pays de Caux and the Perche, 1792-1901

Women at work in the Tirard Frères hat-making factory in Nogent-le-Rotrou, c.1901.
*Chartres, Archives départementales de l'Eure-et-Loir. 7 J art.6.*

*This dissertation is submitted for the degree of Master of Philosophy.*
*This dissertation is the result of my own work and includes nothing which is the outcome of work done in collaboration except where specifically indicated in the text.*

**WORD COUNT (incl. tables): 20,079**

# Table of contents

# List of tables

# I. Introduction

In 1962, Phyllis Deane and W.A. Cole inaugurated the national income approach to industrialisation with their seminal *British Economic Growth 1688-1959: Trends and Structure.* But where Deane and Cole's account portrayed industrialisation as a twin process of agricultural revolution and increasing productivity of labour in manufacturing that allowed a movement of labour from primary to secondary sector in the eighteenth and nineteenth centuries, agricultural historians have since argued that the agricultural revolution had begun much earlier – a view supported by output estimates by Nicholas Crafts and C.K. Harley.[1] Later work by the Cambridge Group for the Study of Population and Social Structure suggested that even the critical structural shift of *labour* from agriculture to industry had in fact occurred in the early modern period.[2] Stephen Broadberry and colleagues came to similar conclusions soon afterwards, though through different methods, and thus began to shift emphasis towards growth in labour productivity as the defining feature of the Industrial Revolution.[3]

According to Harley, Deane and Cole themselves had been 'dubious of the basic methodology of the approach and… suspected that attempts to analyse the origins and causes of economic growth through the media of national income aggregates runs the risk of obscuring the significant factors.'[4] The data produced by the *Occupational Structure of Britain 1279-1911* research programme cited above demonstrated the potential of occupational structure as an alternative inroad into the history of industrialisation. Further, Leigh Shaw-Taylor and Osamu Saito have recently gone on to highlight the extent to which the very terminology used to study industrialisation suffers from vagueness and

[1] C.K. Harley, 'Review of Phyllis Deane and W.A. Cole, British Economic Growth 1688-1959: Trends and Structure', *EH.Net*, 2001.
[2] Leigh Shaw-Taylor and E.A. Wrigley, 'Occupational Structure and Population Change', in *The Cambridge Economic History of Modern Britain*, ed. Roderick Floud, Jane Humphries, and Paul Johnson, vol. I (Cambridge: Cambridge University Press, 2014), 62.
[3] Stephen Broadberry, B.M.S. Campbell, and B. van Leeuwen, 'When Did Britain Industrialise? The Sectoral Distribution of the Labour Force and Labour Productivity in Britain, 1381-1851', *Explorations in Economic History* 50 (2013): 16–27.
[4] Harley, 'Review of Phyllis Deane and W.A. Cole, British Economic Growth 1688-1959: Trends and Structure', xx.

inconsistencies, such that 'industrialisation' can be used to refer to a major increase in the secondary sector share of output *and/or* to labour intensive *or* technologically intensive variants.[5]

Hence, while industrialisation continues to shape history as a discipline – whether through its impact on periodization or its strong association with the notion of modernity – the very nature of industrialisation, its mechanisms, causes, and the existence of multiple 'paths' to industrialisation remain open to debate. In this context, and in recent years, greater attention to women's work has both further destabilized the field, and offered new possibilities for interpretation.[6] While this has been largely restricted to the British case, this dissertation will aim to extend the scope of inquiry to northern France in an effort to bring an additional comparative perspective to bear on the topic.

## II.1 Women's work in the French historiography

In the French historiography, research into women's work before the nineteenth century has focused heavily on women in guilds. Numerous studies have been produced on the thirteenth century *Livre des métiers* compiled by Etienne Boileau for Paris.[7] Hafter's 2007 *Women at Work* provided a detailed analysis of female activities and the role of gender in French guilds under the Old Regime, while a catalogue produced in collaboration with the Departmental Archives of the Seine-Maritime in 2015 shed new light on the extensive participation of Rouen women in guilds starting from at least the

[5] Leigh Shaw-Taylor and Osamu Saito, 'Economic Development and Economic Growth: The Poverty and Imprecision of Our Terminology and Concepts' (Unpublished, 2016).

[6] Daryl Hafter once remarked that 'research in the field of women's history, particularly on women's economic functions throughout history, has revolutionized our comprehension of the process of modernization.'
Daryl Hafter, ed., *European Women and Preindustrial Craft* (Indianapolis: Indiana University Press, 1995), vii.

[7] Example of female corporations found in these sources include the 'lingères en neuf', 'lingères en vieux', 'rubannières', 'dentelières', 'bonnetières', and 'fileresses'.
Madeleine Guilbert, *Les fonctions des femmes dans l'industrie*, vol. IV, Etudes Européennes (Paris: Mouton & Co et Ecole Pratique des Hautes Etudes - Sorbonne, 1966), 21–22.

thirteenth century.[8] But one then has to turn to the work of sociologists, rather than historians, to find studies of women's work during the period of industrialisation – with the literature focusing heavily on the study of (gendered) social relations of production within factories: in her 2000 *Histoire du travail des femmes*, Françoise Battagliola remarks, 'the point is not to produce a history of women or of the feminine, but of the social relations between the sexes.'[9] These works often portray themselves in opposition to nineteenth century texts such as Jules Simon's *L'Ouvrière* or Leroy-Beaulieu's *Le travail des femmes au dix-neuvième siècle* which related women's work to their physiological attributes.[10]

Some rare analyses of the aggregated data on female employment in very-late-nineteenth and early-twentieth century national censuses do exist – Perrot found that, by 1906, out of 100 women in the 'active' population, as many as 17 were domestic servants, with women representing 40% of workers in the tertiary sector, and 75% of workers in the textiles and clothing sector.[11] However, to date, for no region of France are there comprehensive studies of female occupational structure allowing for an analysis of the size, distribution, or evolution of the female labour force over time. Moreover, women's history largely remains treated as marginal, 'an extra chapter to be added without

[8] Daryl Hafter, *Women at Work in Preindustrial France* (Pennsylvania: Pennsylvania State University Press, 2007); Jeans-Louis Roch, 'Femmes et métiers dans la région Rouennaise au Moyen Age', in *'Tout ce qu'elle saura et pourra faire.' Femmes, droits, travail en Normandie, du Moyen Age à la Grande Guerre*, ed. Anna Bellavitis et al. (Rouen: Presses Universitaires de Rouen et du Havre, 2015); François Rivière, 'Les femmes dans les métiers organisés à Rouen au XIVe et XVe siècles: des droits exceptionnels en Normandie comme en Europe', in *'Tout ce qu'elle saura et pourra faire.' Femmes, droits, travail en Normandie, du Moyen Age à la Grande Guerre*, ed. Anna Bellavitis et al. (Rouen: Presses Universitaires de Rouen et du Havre, 2015); Christèle Potvin, 'Les archives des corporations d'arts et métiers sous l'ancien régime et le travail des femmes', in *'Tout ce qu'elle saura et pourra faire.' Femmes, droits, travail en Normandie, du Moyen Age à la Grande Guerre*, ed. Anna Bellavitis et al. (Rouen: Presses Universitaires de Rouen et du Havre, 2015).

[9] 'Il ne s'agit pas de faire l'histoire des femmes ou du féminin, mais des rapports sociaux entre les sexes.' (own translation)
Françoise Battagliola, *Histoire du travail des femmes* (Paris: La Découverte, 2000), 4.

[10] Simon's remark: '… la femme, devenue ouvrière, n'est plus une femme' can be found quoted in numerous other books and pamphlets of the time, while Leroy-Beaulieu once wrote: 'L'homme est robuste, entreprenant: sa force physique, son activité intellectuelle le poussent aux rudes labeurs du dehors. La femme est sédentaire par faiblesse constitutive, elle l'est encore par attachement à ces jeunes êtres sortis de son sein et qui réclament ses soins. *Ainsi de l'organisation physique de l'homme et de la femme découle une sorte de division naturelle du travail.*' (own emphasis)
Jules Simon, *L'Ouvrière* (Paris: Librairie de L. Hachette et Cie, 1861), vi; Paul Leroy-Beaulieu, *Le travail des femmes au dix-neuvième siècle* (Paris: Charpentier et Cie, 1873), 3–4.

[11] Michelle Perrot, 'De la nourrice à l'employée. Travaux de femmes dans la France du XIXe siècle', *Le Mouvement social*, no. 105 (1978): 8, https://doi.org/10.2307/3777547.

changing the whole'[12] – when recent work on the British case has suggested that women's work could in fact be integral to our understanding of major economic processes such as industrialisation.[13]

In 2014, Shaw-Taylor and Wrigley estimated the distribution of the British female workforce for c.1710 from 1851 data, using a series of assumptions,[14] and found that including female employment data in analyses of the sectoral distribution of the labour force during the period 1750-1850 would almost entirely remove the structural shift in employment towards the secondary sector so often assumed to be a defining feature of the Industrial Revolution.[15] My own research on patterns of female employment in Westmorland, 1787-1851, strongly supported this hypothesis.[16] More recently, in 2018, Carmen Sarasúa produced estimates of both female and male labour force participation rates and sectoral distributions for twenty-two localities of La Mancha, showing that the inclusion of female employment data 'revises the conventional accounts of Spanish structural change to suggest the earlier development of manufacturing employment...'[17]

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[12] Michelle Perrot, ed., *Writing Women's History*, trans. Felicia Pheasant (Oxford: Blackwell, 1992), 3.

[13] See for example Maxine Berg, 'What Difference Did Women's Work Make to the Industrial Revolution?', *History Workshop Journal* 35, no. 1 (1993): 25–34, https://doi.org/10.1093/hwj/35.1.22.

[14] The assumptions were as follows: that women formed twice as large a share of agricultural workforce in 1851; that, assuming overall employment in the clothing sector was close to a constant share of employment in the eighteenth century and that women took over parts of the clothing trade in the eighteenth century, their relative importance was reduced in c.1710 by 20%; that women constituted twice as large a fraction of the textile workforce in c.1710 as they did in 1851; and that in all other sub-sectors women formed the same share of the labour force in c.1710 as they did in 1851.
Leigh Shaw-Taylor and Edward Anthony Wrigley, 'Occupational Structure and Population Change', in *The Cambridge Economic History of Modern Britain*, ed. Roderick Floud, Jane Humphries, and Paul Johnson, vol. I (Cambridge: Cambridge University Press, 2014), 68.

[15] Leigh Shaw-Taylor and Xuesheng You, 'Patterns of Female and Male Employment in England and Wales 1700-1911' (Working paper, 2014), 2–5.

[16] The data I collected revealed evidence of a catastrophic decline in female labour force participation rates over the period, a decline strongly correlated to the collapse of cottage industry and the concentration of mechanized textile production in Kendal Town. The data also showed that adding female data to male sectoral distributions significantly inflated the share of the secondary sector in 1787, and provided evidence to support some of the assumptions and estimates used by Shaw-Taylor, Wrigley and You to estimate female sectoral distributions prior to 1850 – suggesting that, based on Keibek's 2016 estimates of male occupational structure for England and Wales, about 24% of the British female workforce would have been employed in textiles alone in 1781.
Auriane Terki-Mignot, 'Changing Patterns of Female Employment in Westmorland, 1787-1851' (University of Cambridge, 2017),
https://www.campop.geog.cam.ac.uk/research/occupations/outputs/preliminary/dissertationterkimignot.pdf;
Sebastiaan Keibek, 'The Male Occupational Structure of England and Wales, 1600-1850' (University of Cambridge, 2014), 152.

[17] Carmen Sarasúa, 'Women's Work and Structural Change: Occupational Structure in Eighteenth-Century Spain', *Economic History Review* 00, no. 0 (2018): 1–2.

The impact of data on women's work on our picture of industrialisation could be all the more potent in the French case, as numerous aspects of French industrialisation remain hotly debated to this day. Much of the historiography on French industrialisation has opposed British exceptionalism to a supposed French failure to industrialise as early and fully as Britain. The notion was perhaps most memorably worded by Alexander Gerschenkron in his theory of 'backwardness.'[18] In 1966, François Crouzet began to overturn such interpretations when he suggested that, once brought back to a per capita level, French economic growth in the nineteenth century would have been on par with that of Britain.[19] Despite a number of critiques against some of Crouzet's sources – most importantly estimates by Jean-Claude Toutain and Jean Marczewski – subsequent estimates by Alan Milward and S.B. Saul, Ralph Davis, Peter Mathias and Patrick O'Brien, or O'Brien and Caglar Keyder, continued to support Crouzet's hypothesis.[20] In later years, Crafts would conclude that although 'the revisionist interpretation exaggerates French achievements… French economic performance looks substantially better than was once thought.'[21] Crouzet further argued that France's specialisation in high-value added products– the 'French path' to industrialisation – was a rational response by entrepreneurs to economic circumstances, thereby discarding traditional explanations of the French 'lag' that placed the blame on agricultural retardation or an entrepreneurial culture that favoured elitism over innovation.[22] This feature of Crouzet's work was supported by a host of later studies, most notably that of O'Brien and Keyder in 1978.[23]

[18] Alexander Gerschenkron, *Economic Backwardness in Historical Perspective: A Book of Essays* (Cambridge, Mass.: Harvard University Press, 1966), 14.
[19] François Crouzet, 'Angleterre et France au XVIIIe siècle: Essai d'analyse comparée de deux croissances économiques', *Annales. Histoire, Sciences Sociales* 21, no. 2 (1966): 254–91.
[20] François Crouzet, *De la supériorité de l'Angleterre sur la France: L'économique et l'imaginaire, XVIIe-XXe siècles* (Paris: Librairie Académique Perrin, 1985), 55.
[21] N. F. R. Crafts, 'Economic Growth in France and Britain, 1830-1910: A Review of the Evidence', *The Journal of Economic History* 44, no. 1 (1984): 59, 67.
[22] Crouzet, 'Angleterre et France au XVIIIe siècle', 272–91.
[23] Patrick O'Brien and Caglar Keyder, *Economic Growth in Britain and France 1780-1914: Two Paths to the Twentieth Century* (London: George Allen & Unwin, 1978), 178.

Nevertheless, in 1985, looking back over the data produced by Maurice Lévy-Leboyer, Marczewski and himself since the formulation of his initial hypothesis, Crouzet concluded that 'even when adopting the most favourable hypotheses, by 1850 occidental Europe had not succeeded in catching up to Great Britain', remarking that the large-scale adoption of British technology on the Continent 'should not mask a persistent lag: the fact that industry was more dispersed and that numerous sectors remained archaic.'[24] Others have been even more pessimistic: Lévy-Leboyer, though he acknowledged that the 'French path' of specialization did not handicap the country in the nineteenth century, nonetheless portrayed it as ultimately a 'dead-end'.[25] More recently, Jean-Pierre Dormois went as far as questioning its very existence, remarking that 'on even a cursory inspection… the two paths appear remarkably similar if not parallel.'[26]

The ongoing research of Alexis Litvine on the male occupational structure of France, 1795-2010, has begun to shed new light on the question. Litvine has shown that, with an occupational approach, the primary sector appears even larger throughout the nineteenth century than in previous estimates. But Litvine contends that this does not support the agricultural retardation model – arguing instead that there existed no shortage of labour in the secondary sector. Litvine further argues that what appears to be a gap in labour productivity between agriculture and industry is most probably the result of an underestimation of the share of production carried out by proto-industrial and by-employed households.[27] However, Litvine's data lacks direct, comprehensive evidence of female employment prior to the mid- to late-nineteenth century. If patterns of female employment in industrialising France resembled those evident in Britain with respect to the domination of the secondary sector by female workers in the eighteenth century, and given the importance of female labour to proto-industry more generally, adding female data to Litvine's reconstruction may shed new

[24] Crouzet, *De la supériorité de l'Angleterre sur la France: L'économique et l'imaginaire, XVIIe-XXe siècles*, 325–26.
[25] Maurice Lévy-Leboyer and François Bourguignon, *L'économie Française au XIXe siècle: Analyse macro-économique* (Paris: Economica, 1985), 64–67.
[26] Jean-Pierre Dormois, *The French Economy in the Twentieth Century*, New Studies in Economic and Social History (Cambridge: Cambridge University Press, 2004), 112.
[27] Alexis Litvine, 'French Occupational Structure in the Long-Run, 1795-2010', *Unpublished*, 2015, 5, 7, 9.

light on the evolution of France's economy in the period, and help affirm or negate several aspects of the debate on the 'French path'.

Hence, by extending investigation to the French case, this dissertation will seek to investigate three main questions: first, how did female labour force participation rates and sectoral distributions evolve in France over the course of industrialization; second, what were some of the central determinants of the patterns of women's work observed; and third, what can female occupational data suggest about the nature of industrialisation and its mechanisms? In order to investigate these questions, it will adopt an approach to women's work that is both quantitative, and comparative.

## II.2 A quantitative approach: rehabilitating censuses as a source of information on female occupational structure

A legacy of strong centralized institutions during the French Revolution and later Empire, quantitative sources such as population listings and censuses, containing information on men's and, at times, women's work, abound for the period of French industrialisation. However, the use of such sources for the study of women's work has at times been heavily criticized – most notably perhaps by Jane Humphries and Sarasúa who, in a 2012 article, suggested that the U-shaped curve of British female LFPR hypothesized by Eric Richards in 1974 and later supported by the works of Peter Earle and Osamu Saito and by data produced by Amy Erickson, was 'partly, at least, a statistical mirage' due to under-recording of female labour in official sources.[28] Humphries and Sarasúa argued that such official sources 'fail to reflect the actual dimensions of women's economic activity', in part because

[28] Jane Humphries and Carmen Sarasúa, 'Off the Record: Reconstructing Women's Labor Force Participation in the European Past', *Feminist Economics* 18, no. 4 (1 October 2012): 44, https://doi.org/10.1080/13545701.2012.746465; Eric Richards, 'Women in the British Economy since about 1700: An Interpretation', *History* 59, no. 197 (1974): 337–57; Peter Earle, 'The Female Labour Market in London in the Late Seventeenth and Early Eighteenth Centuries', *The Economic History Review* 42, no. 3 (1989): 328–53; Osamu Saito, 'Who Worked When: Life-Time Profiles of Labour Force Participation in Cardington and Core Castle in the Late Eighteenth and Mid-Nineteenth Centuries', *Local Population Studies* 22 (1979): 14–29; Amy Erickson, 'Married Women's Occupations in Eighteenth-Century London', *Continuity and Change* 23, no. 2 (2008): 267–307.

'social, legal, and cultural forces identified men as *workers* and women, especially married women, as *nonworkers*.'[29] They therefore advocated adopting a more critical approach to official sources, one that would question their recording of both female and male occupations; as well as the use of alternative sources to generate estimates of participation.[30] Others, however, have argued that censuses may not under-record women's work to such an extent. Analyses of the post-1851 early English censuses by Edward Higgs, Michael Anderson, or Amanda Wilkinson showed that there is little to indicate that women's work, *once understood as occupational denomination* and not as work actually performed throughout the day, was particularly under-recorded.[31] Moreover, censuses remain the most comprehensive sources available on female (and male) employment – which led Shaw-Taylor to advocate, in 2007, moving 'beyond the mere identification of problems… towards an evaluation, preferably quantitative, of the impact of the problems on the recorded data.'[32]

In fact, there is much to indicate that French population listings and censuses from the late-eighteenth to the early-twentieth century offer unique opportunities for an analysis of the type advocated by Humphries and enabling comparison across time and place. In one of the articles introduced by Humphries and Sarasúa in the 2012 volume of *Feminist Economics*, George Grantham argued that: 'the census of 1851 is unique among France's nineteenth- and early twentieth-century censuses, which recorded only the occupation of the (usually male) head of household and reported women's market-oriented work only when it was performed outside of the household,' because it 'systematically designat[ed] women and children who engaged in market-oriented work at home...'[33] The nineteenth century censuses did not begin to record female occupational data until 1851. In 1851,

[29] Humphries and Sarasúa, 'Off the Record', 44, 48.
[30] Humphries and Sarasúa, 50.
[31] Relevant studies include: Edward Higgs, 'Occupational Censuses and the Agricultural Workforce in Victorian England and Wales', *Economic History Review* 48, no. 4 (1995): 700–716; Michael Anderson, 'What Can the Mid-Victorian Censuses Tell Us about Variations in Married Women's Employment', in *Women's Work in Industrial England: Regional and Local Perspectives*, ed. Nigel Goose (Hatfield: Local Population Studies, 2007), 182–208; Edward Higgs and Amanda Wilkinson, 'Women, Occupations and Work in the Victorian Censuses Revisited', *History Workshop Journal* 81, no. 1 (2016): 17–38.
[32] Leigh Shaw-Taylor, 'Diverse Experiences: The Geography of Adult Female Employment in England and the 1851 Census', in *Women's Work in Industrial England: Regional and Local Perspectives*, ed. Nigel Goose (Hatfield: Local Population Studies, 2007), 33.
[33] George Grantham, 'Occupational, Marital, and Life-Cycle Determinants of Women's Labor Force Participation in Mid Nineteenth-Century Rural France', *Feminist Economics* 18, no. 4 (October 2012): 98–99, https://doi.org/10.1080/13545701.2012.737007.

directives specified a distinction between wives without distinct occupations who contributed to the exercise of their husbands' professions, and wives without distinct occupations who made no such contribution and were instead dependent upon their husband's revenue for a living. From 1856 to 1876, the censuses were drawn up using family bulletins as opposed to individual bulletins, and census reports now specified that 'the wife (who is not the head of establishment or not working with her own hands) and children should be placed in the family column, when they do not exercise a distinct occupation.'[34] However, remarks in the census reports up to 1896, when the directives were clarified, make it clear that the notion of a 'distinct occupation' and its application was problematic, with a number of married women most probably classified under their husband's occupation independently of their own activity.[35] In 1896, the directives were modified yet again, returning to the 1851 definition of the active labour force. Unfortunately, finding places for which the 1851 census has survived and recorded women's occupations as specified by the directives, *and* for which further eighteenth- and nineteenth-century listings/censuses allowing for analysis of patterns across the period of industrialisation exist, is both difficult and time-consuming. However, this dissertation will argue that, notwithstanding the evolution of official census directives in nineteenth-century France, for some regions at least, the 1851 census is not, in fact, the only atypical one in its recording of women's work. In this, we will follow Christian Topalov's suggestion to view variations in statistical conventions and practices 'not as obstacles to knowledge, but as clues to the logic pertaining to statisticians' representations and the stakes of the latter.'[36] While it may never be possible to recover historical patterns of women's work with exact accuracy, those variations may suggest new ways to approach it, and the possibility for the closer reading of census data advocated by Humphries and Sarasúa.

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[34] 'En ce qui concerne la famille d'un patron, d'un ouvrier ou d'un employé, il a été expliqué que la femme (non chef d'établissement ou ne travaillant pas de ses propres mains) et les enfants doivent figurer à la colonne famille, lorsqu'ils n'exercent pas de profession distincte.' (own translation)

[35] Battagliola, *Histoire du travail des femmes*, 18–24.

[36] '… indices 'des logiques propres aux représentations des statisticiens et aux enjeux de celles-ci.' (own translation)
Christian Topalov, 'Réalistes, nominalistes et conventions statistiques', *Genèses. Sciences sociales et histoire* 9, no. 1 (1992): 119, https://doi.org/10.3406/genes.1992.1143. See also Christian Topalov, 'A Revolution in Representations of Work : The Emergence over the 19th Century of the Statistical Category "Occupied Population" in France, Great Britain, and the United States', *Revue Française de Sociologie* 42, no. 1 (2001): 79–106.

Further, for some regions, sources go as far back as the late-eighteenth century. In 1791, the revolutionary government proclaimed a Law on Municipal Police, requiring all communes to complete tables including the name, age, place of birth, place of residence, occupation, and means of subsistence of its inhabitants. Historians have since hypothesized that the listing was only carried out in Paris.[37] However, several listings corresponding exactly to the above description can be found in the departmental archives of the Seine-Maritime (ADSM), along with letters dated from the proclamation of the Law and explicitly referring to it.[38] For a number of cantons, these record female occupations. By 1793, the revolutionary Convention decreed a new article asking all communes to complete a population listing that was to enable the creation of electoral colleges on the basis of universal suffrage.[39] This was to become known as the 'dénombrement de l'An II.' Further letters at the ADSM, whose date corresponds to the decree of the dénombrement, asked the communes to complete and send back tables to the National Convention – some of which, here too, include female occupational data.[40] Following a new decree in 1795, population listings based on the model of the dénombrement were carried out regularly until the establishment of five-yearly censuses in 1801. The departmental archives of the Eure-et-Loir possess a number of An IV (1795-96) listings, some of which include female occupational data. While these sources are undeniably imperfect in their recording of such data – the directives did not include direct references to women's employment, and the decision to record it seems to have been dependent upon local initiative – this dissertation will argue that the sources can be analysed critically to yield robust estimates of female employment patterns.

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[37] Paul Meuriot, 'Le recensement de l'an II', *Journal de la société statistique de Paris* 59 (1918): 36.

[38] 'Nous avons distribué aux municipalités de notre arrondissement les imprimés que vous nous avez addressés pour servir à constater l'état des habitants conformément à l'article 1er de la loi du 22 Juillet relative à l'organisation d'une Police Municipale.' (extract).
'Lettre au Conseil Général du département de la Seine Inférieure', 7 May 1792, L/1896, Archives départementales de Seine-Maritime; 'Lettre au Conseil Général du département de la Seine Inférieure', 1792, L/1896, Archives départementales de Seine-Maritime; 'Lettre au Conseil Général du district de Montivilliers', 22 August 1792, L/1896, Archives départementales de Seine-Maritime.

[39] 'La Convention nationale, considérant que le Corps législatif, qui doit la remplacer, ne peut être formé que d'après les bases établies par les articles XXII et XXIII de la Constitution acceptée par le peuple français, décrète :
Art 1. – Chaque commune de la République dressera, dans le plus bref délai, un état de sa population effective avec mention du nombre des citoyens ayant droit de voter…' (extract from the 1793 decree).
Meuriot, 'Le recensement de l'an II', 42.

[40] Conseil Général du département de la Seine Inférieure to Conseil Général du district de Montivilliers, 'Demande: nom des communes, tableau à remplir', 21 June 1793, L/1896, Archives départementales de Seine-Maritime.

Of course, on the long-term, it is clear that combining an occupational denomination approach such as that made possible by censuses with alternative approaches to women's work would be necessary to account for unpaid domestic work. Alternative approaches could include the 'verb-oriented' approach, pioneered by Sheilagh Ogilvie and currently being used by Maria Ågren for the Swedish-based 'Gender and Work' project.[41]

## II.3 A comparative approach: three micro-studies

In his 1966 article on French and British economic growth, Crouzet wrote: 'for the economic historian interested in the key problem of growth, the comparative method ought to be particularly fruitful… since their work consists of analysing the role of various variables and assessing their respective influences on economic evolution.'[42]

This dissertation will follow Crouzet's proposed approach by focusing on two regions of France, the Pays de Caux in Normandy and the Perche of the Eure-et-Loir, with additional comparison with Westmorland. While the three regions present a number of differences with the potential to illuminate aspects of the history of women's work (see Chapter IV.2 for details), all possessed dynamic textile industries employing large proportions of the population throughout the eighteenth century and for some of the nineteenth. The decision to focus on proto-industrial textile type regions was motivated by a number of factors: first, to facilitate comparison; second, because, both in Britain

[41] 'The Gender and Work Research Project - Gender and Work - Uppsala University, Sweden', accessed 3 December 2017, http://gaw.hist.uu.se/what-is-gaw/research+project/.
[42] 'Pour l'historien économiste qui s'intéresse au problème-clef de la croissance, la méthode comparative devrait être particulièrement féconde… dans la mesure où sa tâche consiste à analyser le jeu de diverses variables et à pondérer leurs influences respectives sur l'évolution économique.' (own translation).
Crouzet, 'Angleterre et France au XVIIIe siècle', 254.

and France, the textile sector spearheaded the move towards mechanisation and factory production; and, finally, because the textile sector has historically been associated with high female participation.[43]

[43] See for example analyses of the weight of the textile industry and significance of textile employment to female labour in nineteenth century France in Denis Woronoff, 'L'industrialisation de la France de 1789 à 1815. Un essai de bilan', *Revue économique* 40, no. 6 (1989): 1047–60, https://doi.org/10.3406/reco.1989.409184; Guilbert, *Les fonctions des femmes dans l'industrie*.

# II. The data

Analysis will focus on the canton of Bréauté in the Pays de Caux, and that of Nogent-le-Rotrou in the Perche. Both cantons were selected for this study because full population listings and censuses, presenting a high frequency of recording of female occupations, have survived for them at multiple intervals between 1792 and 1901.[44] For the purposes of the study, listings and censuses were digitized for 1792, 1793, 1856, 1881 and 1901 for Bréauté; and for 1795-6, 1856, and 1896 for Nogent-le-Rotrou.[45]

[44] Unfortunately, although late-eighteenth century sources for both cantons appeared particularly suited to the type of analysis described above, the 1851 census' nominative lists appeared to record women's occupations inconsistently, contrary to what Grantham suggested and despite the official census directives. Hence, 1856 was preferred for analysis. For future research, the identification of communes for which both late-eighteenth century listings and 1851 nominative lists presenting high frequencies of recording of female occupations exist ought to be a priority.

[45] 'Dénombrement découlant de la Loi sur la Police Municipale, canton de Bréauté' (1792), L/2049, Archives départementales de Seine-Maritime; 'Dénombrement de l'an II, canton de Bréauté' (1793), L/1897, Archives départementales de Seine-Maritime; 'Recensement national de population, canton de Bolbec, communes de Bernières, Beuzeville la Grenier, Parc d'Anxtot, Saint Jean de la Neuville, et Vattetot sous Beaumont' (1856), 6M132, Archives départementales de Seine-Maritime; 'Recensement national de population, canton de Goderville, communes de Bréauté, Houquetot, Manneville la Goupil, Mirville, et Virville' (1856), 6M135, Archives départementales de Seine-Maritime; 'Recensement national de population, canton de Goderville, communes de Bréauté, Houquetot, Manneville la Goupil, Mirville, Vattetot sous Beaumont, et Virville' (1856), 6M297, Archives départementales de Seine-Maritime; 'Recensement national de population, canton de Saint Romain, commune de Saint Gilles la Neuville' (1856), 6M141, Archives départementales de Seine-Maritime; 'Recensement national de population, canton de Bolbec, communes de Bernières, Beuzeville la Grenier, Parc d'Anxtot, et Saint Jean de la Neuville' (1881), 6M294, Archives départementales de Seine-Maritime; 'Recensement National de Population, Canton de Saint Romain, Commune de Saint Gilles La Neuville' (1881), 6M304, Archives départementales de Seine-Maritime, fre; 'Recensement national de population, canton de Bolbec, communes de Bernières, Beuzeville la Grenier, Parc d'Anxtot, et Saint Jean de la Neuville' (1901), 6M449, Archives départementales de Seine-Maritime; 'Recensement national de population, canton de Goderville, communes de Bréauté, Houquetot, Manneville la Goupil, Mirville, Vattetot sous Beaumont, et Virville' (1901), 6M452, Archives départementales de Seine-Maritime; 'Recensement national de population, canton de Saint Romain, commune de Saint Gilles de la Neuville' (1901), 6M461, Archives départementales de Seine-Maritime; 'Dénombrement de l'an IV, canton de Nogent-le-Rotrou' (1796), L art. 326, Archives départementales de l'Eure-et-Loir; 'Recensement national de population, canton de Nogent-le-Rotrou, commune de Brunelles' (1901 1836), 6 Mi 18, Archives départementales de l'Eure-et-Loir; 'Recensement national de population, canton de Nogent-le-Rotrou, communes de Saint-Jean-de-Pierre-Fixtes et Trizay-Coutretot-Saint Serge' (1901 1836), 6 Mi 96, Archives départementales de l'Eure-et-Loir; 'Recensement national de population, canton de Thiron Gardaix, commune de Coudreceau' (1901 1836), 6 Mi 39, Archives départementales de l'Eure-et-Loir; 'Recensement national de population, canton de Thiron Gardaix, commune de Margon' (1901 1836), 6 Mi 71, Archives départementales de l'Eure-et-Loir; 'Recensement national de population, canton de Nogent-le-Rotrou, commune de Champrond en Perche' (1901 1856), 6 Mi 20, Archives départementales de l'Eure-et-Loir; 'Recensement national de population, canton de Nogent-le-Rotrou, commune de Nogent-le-Rotrou' (1881 1856), 6 Mi 82, Archives départementales de l'Eure-et-Loir; 'Recensement national de population, canton de Nogent-le-Rotrou, commune de Nogent-le-Rotrou' (1901 1886), 6 Mi 83, Archives départementales de l'Eure-et-Loir; 'Recensement national de population, canton de Nogent-le-Rotrou, commune de Margon' (1896), 6 Mi 72, Archives départementales de l'Eure-et-Loir.

The data described above represent a total of c.6000 entries per year spread across thirteen communes for Bréauté; and c.7,000 to c.10,000 entries per year spread across seven communes for Nogent.[46] Additionally, all birth, marriage and death registers that included occupational descriptors for the years 1825 and 1835 were digitized to cover the gap between the 1790s listings and 1856 census.[47] All tables shown henceforth are drawn from these sources.

## II.1 Methodological points

Cross-linkage with BMD registers was considered as a test of the reliability of the occupational information found in the sources. However, a survey of the BMD registers for both cantons found that the vast majority did not record women's occupations until well into the 1830s. Past this date, the frequency of recording improved – but an exercise in nominal linkage described below returned so few successful linkages that, given the sheer volume of data contained in the listings and censuses transcribed for the dissertation and time-constraints, the exercise was deemed impractical.[48] Analysis focused instead on patterns within the listings/censuses themselves, and across time, to identify potential biases.

[46] Note that the 1792 and 1793 listings for Bréauté are each missing communes, but comprise the full canton when taken together. Missing communes presented no significant deviation from average, hence their absence is unlikely to have skewed results. Note too that the An IV listing for Nogent only lists individuals aged 12 and above and lists individuals alphabetically rather than by households.

[47] 'Registre d'état civil: naissances, mariages et décès, commune de Beuzeville la Grenier' (1820), 4e07986, Archives départementales de Seine-Maritime; 'Registre d'état Civil: Naissances, Mariages et Décès, Commune de Bréauté' (1820), 4e08138, Archives départementales de Seine-Maritime; 'Registre d'état civil: naissances, mariages et décès, commune de Beuzeville la Grenier' (1835), 4e07987, Archives départementales de Seine-Maritime; 'Registre d'état civil: naissances, mariages et décès, commune de Bréauté' (1835), 4e08140, Archives départementales de Seine-Maritime; 'Registre d'état civil: naissances, mariages et décès, canton de Nogent-le-Rotrou' (1820), 3E 280/59, Archives départementales de l'Eure-et-Loir; 'Registre d'état civil: naissances, mariages et décès, canton de Nogent-le-Rotrou' (1835), 3E 280/074, Archives départementales de l'Eure-et-Loir.

[48] Further research could avoid the problem of nominal linkage by obtaining data previously transcribed by genealogical societies in order to increase BMD register sample sizes to representative samples, thereby allowing for a comparison of *overall* patterns emerging from censuses and BMD registers. However even this is unlikely to yield significant conclusions. Of 4233 marriage registers transcribed by the genealogical society of the Seine-Maritime for the 1860-1870 decade for one half of the Caux, only a third of the events recorded information on women's occupations. This frequency of recording was evidently lower than that in the population censuses under study. Note that the exercise could in any case not be attempted with this dataset because the genealogical society could only release the data for the half of the Caux that did not contain the canton of Bréauté.

For the purposes of analysis, all occupations were coded according to the PST scheme as developed by E.A. Wrigley.[49] Throughout analysis, individuals were counted as having an occupation if they were above 12 years of age and below 75 years of age and had a stated occupation in the census. Landowners, those marked as 'living from their own means', and those marked as employed in household tasks were excluded. This decision was not based on a lack of recognition of the productive nature of housework or estate management, but rather motivated by the questions under investigation. Those employed in family businesses or on family farms were counted as employed whether or not they received a wage for their work, because their work contributed – either directly or indirectly – to the market. But counting landowners or those performing household tasks as employed risked introducing an inconsistency in the data, for the type of work they performed did not belong in any way to the same kinds of markets as all other recorded male and female employment. Sarasúa followed an identical method in her 2018 article.[50]

Further, the question of time-use had to be considered. While the historiography has tended to regard women's work as intermittent and part-time, recent work has begun to debate the extent to which gender was the most important factor in determining whether an individual worked full-time or part-time – in particular when it comes to single individuals. The Swedish Gender and Work Project found that many men 'performed subordinate, intermittent, and auxiliary work, work that is generally associated with women.' [51] Given the absence of definitive studies on time-use for the early modern and modern period, and hence in the absence of any basis for correcting the data, no corrections were made initially, a decision functionally equivalent to assuming that all men and women with stated occupations worked full-time. At a later stage in the analysis, a test assuming that married women

[49] A new PST dictionary for French occupational titles was created on the basis of the following documents, adjusted as necessary.
E.A. Wrigley, 'PST Dictionary' (CAMPOP, 2010), http://www.campop.geog.cam.ac.uk/research/projects/occupations/britain19c/pst.html; E.A. Wrigley, 'PST Lookup Table' (CAMPOP, 2010), http://www.campop.geog.cam.ac.uk/research/projects/occupations/britain19c/pst.html; E.A. Wrigley, 'PST Definitions' (CAMPOP, 2010), http://www.campop.geog.cam.ac.uk/research/projects/occupations/britain19c/pst.html.
[50] Sarasúa, 'Women's Work and Structural Change: Occupational Structure in Eighteenth-Century Spain', 6.
[51] Jonas Lindström, Rosemarie Fiebranz, and Göran Rydén, 'The Diversity of Work', in *Making a Living, Making a Difference: Gender and Work in Early Modern European Society*, by Maria Ågren (Oxford: Oxford University Press, 2017), 53.

worked 50% of full-time was carried out to assess the sensitivity of the main conclusions to the assumptions. The effect was most visible in the textile sector and largely concentrated at earlier dates. At its most extreme, the part-time assumption diminished the share of the textile sector as a female employer by 33% (Bréauté 1793). Trends over time, however, remained equivalent in all sectors for both cantons.[52] Moreover, a survey of the secondary literature suggests that the textile sector in the 1790s was perhaps one of the sectors and time-periods in which even married women were most likely to be employed, if not full-time, close to full-time. Cottage-industry type textile work in areas such as the Caux more often than not employed entire families and, given the wages earned by spinners and weavers, would have required both spouses to work all year round.[53] Further, while it is unclear whether women tended to earn less than men because they worked fewer hours or because their pay scale was lower, estimates suggest that women in the Caux typically spun one pound of cotton a day – which would most probably have taken the better part of the day.[54] Finally, contemporary observers remarked that spinners in the Caux who could earn as much as 15 sous a day before the 1786 trade treaty with England could hardly earn 3 sous by the late 1780s *even when she prolonged her work through the night.*[55] It was therefore decided to maintain the full-time assumption in subsequent analysis. Future research could attempt to establish and assess the effect of different work-time patterns in different sectors and across time, using, for example, contemporary biographies or sources such Frédéric Le Play's 75 household budgets for France published in his 1855 *Les Ouvriers Européens*.[56]

[52] Note that the sensitivity test could not be applied to the data for Nogent 1796, as the listing that year did not always record women's marital status. However, on the basis of the results observed in Bréauté in 1792 and 1793, conclusions regarding the impact of the different assumptions are unlikely to be affected by this.
[53] Gay Gullickson, 'The Sexual Division of Labour in Cottage Industry and Agriculture in the Pays de Caux: Auffay, 1750-1850', *French Historical Studies* 12, no. 2 (1981): 196.
[54] Gullickson, 186; Société Libre d'Emulation de la Seine-Maritime, *Le textile en Normandie: Etudes diverses* (Rouen: Société Libre d'Emulation de la Seine-Maritime, 1975), 133.
[55] Jules Sion, *Les paysans de la Normandie Orientale: Etude géographique* (Paris: Librairie Armand Colin, 1909), 296.
[56] Frédéric Le Play, *Les ouvriers européens: Etudes sur les travaux, la vie domestique et la condition morale des populations ouvrières de l'Europe, précédée d'un exposé de la méthode d'observation* (Paris: Imprimerie Impériale, 1855).

Several other aspects of the data required further interpretation. In both the 1792 and 1793 population listings for Bréauté, a number of communes repeatedly used the term 'idem' in the occupational descriptor column. In some communes, the term appeared to be used as a household livelihood descriptor, as it was sometimes applied nearly systematically to all inhabitants of a given household following the head.[57] But in others, its usage was not systematic (i.e. large numbers of married women and adult children had distinct stated occupations), and occurred across households as well as within households – such that it may have been intended as an occupational descriptor. Nominal linkage between the listings and a sample of BMD registers for women available on Geneanet.org for 1790-1860 was attempted. Only 5 linkages were successful on the basis of name and commune of residence – none involved the use of 'idem.'[58] Given the small proportions of registers that contained mentions of women's occupations prior to the late 1830s, the exercise was abandoned at this stage. Instead, preliminary analysis was carried out twice for the 1792 and 1793 population listings for Bréauté. A first analysis assigned no occupation to individuals with 'idem' in the occupational column. A second one assumed that the 'idems' should be understood as a genuine representation of an individual's occupation.[59]

At both years, the male and female LFPR of 'idem' communes were closer to those of the communes that did not use 'idem' when the term was included as an occupational descriptor. In 1792, discounting the 'idems' reduced the weighted average for female LFPR across the canton from 78% to 64%, and reduced the average for male labour force participation rates from 84% to 78%. Depending on the commune, including the 'idems' could increase female LFPR by 2 to 52%.[60] In 1793, discounting the 'idems' reduced the weighted average for female LFPR across the canton from 94% to

[57] In communes such as Saint Gilles de la Neuville in 1792, the term could be applied to children as young as 3 years old, and/or to the wives and children of 'siamoisiers' (specialized weavers) when this occupation appeared to be exclusively masculine in other communes.
[58] Of those 5 linkages, 4 involved women who were of age to have had an occupation in 1792-3, and in all 4 of these cases, the occupations in the listings and BMD registers matched.
[59] The analysis carried out to assess the meaning of the 'idems' and adjust for them had to be carried out differentially for individual communes at both years, and involved a large number of raw tables which could not be included due to space constraints. A textual description of the more significant elements and findings was hence preferred.
[60] Two communes in particular presented extremely large variations in both female and male LFPR, with female LFPR falling as low as 14% in Saint Gilles de la Neuville once the 'idems' were discounted.

80%, and reduced the male LFPR from 89% to 82%. Depending on the commune, including 'idems' could increase female LFPR by 8% to 48%. However, once female LFPR were broken down by marital status, it became clear that the inclusion of 'idems' in 1792 over-inflated the LFPR of married women – bringing these as high 91-100% in some. By contrast, discarding the idems brought the rates down to 17-58%, rates far lower than those in communes that did not use idem. The same pattern was visible in 1793, though far less extreme. This suggested that including the 'idems' without further adjustments would be unsatisfactory.

The inclusion/exclusion of 'idems' also affected the patterns observed in sectoral distributions. The inclusion of 'idems' led to little significant variation from non-idem communes with regards to male sectoral distributions, however their exclusion led to comparatively deflated primary sectors. For women, the inclusion of 'idems' in 1792 led to over-inflated primary sectors and under-represented secondary sectors: where 0-7% of working-women in non-idem communes worked in agriculture in 1792, idem communes presented rates of 4-57%. In some communes, this may have reflected genuine trends in sectoral distribution – for indeed the effect was still present, though far less extreme, when the 'idems' were discounted. But the size of the variation introduced suggested that the 'idems' could not straightforwardly be interpreted as occupational descriptors, especially in the case of women, whilst also suggesting that the meaning of 'idems' could differ from commune to commune. In 1793, however, all idem communes but one led to little distinguishable variation from the norm in sectoral distributions.[61]

Unfortunately, idem communes either presented the 'idem' problem in both 1792 and 1793, or were absent from one of the two dates. Although two idem communes in 1792 presented significantly smaller variation than the others, it was decided that adjusting the rest of the data on the basis of these two communes would be unsatisfactory since, at this stage, it was impossible to tell whether the differences observed in sectoral distributions were genuine, or artefacts of the enumeration convention.

[61] The commune of Le Hertelay alone showed a hugely inflated primary sector and deflated secondary sector for women.

Instead, it was concluded that 1793 presented a significant improvement in the manner and consistency with which those responsible for the listing had used the term ‘idem.’ With the exception of Le Hertelay, where the use of ‘idem’ continued to introduce significant variations, idem communes presented LFPR and sectoral distributions that were very close to those of non-idem communes. Further, the ratio of married women working independently from their husbands (i.e. having a distinct occupation) to married women working alongside their husbands (i.e. having the same or a related occupation) was calculated for each commune. Whereas, in 1792, the idem communes presented abnormally low ratios, suggesting that the use of ‘idem’ had wrongly attributed their husbands’ occupations to numerous married women, the ratios for idem communes in 1793 presented little variation from non-idem communes, suggesting that, where ‘idem’ attributed a married woman the same occupation as her husband’s in 1793, this was more likely to represent reality than it had been in 1792.

On the basis of the above, it was decided to include the ‘idems’ as genuine occupational descriptors in further analysis. However, because the ‘idems’ clearly introduced distortions in female LFPR and sectoral distributions in 1792, it was also decided to adjust the 1792 figures on the basis of 1793 figures. Because the ‘idems’ mostly affected married women, adjustments concentrated on this category. The likelihood of the wife of a primary, secondary, tertiary sector worker or labourer having a stated occupation was calculated for idem communes in 1793, excluding Le Hertelay. This figure was then applied to the 1792 idem communes to arrive at an adjusted female LFPR. The likelihood of the wife of a primary, secondary, tertiary sector worker or labourer working in the primary, secondary, tertiary sector or as a labourer was then calculated for the 1793 idem communes – and the figures applied to the 1792 idem communes to adjust female sectoral distributions. The figures for Le Hertelay in 1793 were also adjusted using the same method.

The enumeration of married women also proved problematic in the 1856 censuses. In both Bréauté and Nogent, low female LFPR in 1856 appeared to represent a significant deviation from the overall trend observed across the 1792-1901 period. Part of the fall in female LFPR is likely to have been genuine: as will be analysed in more detail in Chapter II.3, the period was associated with the decline, or even disappearance, of textile work as one of the top occupations for women in both cantons – a trend that fits the known development of the textile industries in both areas and hence was not simply an artefact of the 1856 census. But the size of the fall appeared suspicious. This was all the more so because 1856 presented abnormally high independent:couple ratios:[62] in Bréauté, where the ratios ranged from 1.71 to 3.73 in other years, the ratio for 1856 reached 27.22. In Nogent, where the ratio was of 9.36 in 1856, it reached an astronomic 124.2 in 1856 (see table 2.5). The size of this discrepancy was almost entirely due to low numbers of women being ascribed an occupation at all: the independent:couple ratios for women *with an occupation* for 1856 were broadly in line with overall trend for the ratio observed over time.[63]

These patterns are likely to be due in large part to enumeration conventions. The 1856 census was designed with a single column for 'Titres, qualifications, états ou professions et fonctions':[64] as a result, in the majority of communes under study, a large number of women were simply enumerated as 'sa femme' ('his wife'). And indeed, although 50% of single women and 58% of widows had a stated occupation in Nogent in 1856, only 3,50% of married woman had. Bréauté presented a similar, though less extreme, pattern. By 1881, however, columns for 'Profession' and 'Position dans le ménage' ('position within the household') were separated, and finding 'sa femme' in the second column did not preclude the presence of a stated occupation in the first.

[62] Calculated as the number of women with a husband who had a different occupation to their husbands', or no stated occupation; divided by the number of women with a husband who had the same occupation as their husbands', or a complementary occupation in the same sub-sector.
[63] The independent :couple ratio for women with an occupation was calculated using the same method as stated in note above, but excluded women with no stated occupation from the 'independent' category.
[64] 'Titles, qualifications, professions or functions.'

In order to ensure that 1856 was indeed the 'odd one out' and under-enumerated women, however, several tests were run to check that the 1881, 1896 and 1901 censuses did not, on the contrary, over-enumerate female employment. The independent:couple ratios observed in 1881, 1896 and 1901 were largely consistent – but consistency does not in itself prove that they were true to reality. However, if women were being ascribed their husbands' occupation as a convention rather than because they genuinely shared this occupation in these years, we would expect independent:couple ratios to be broadly similar across all occupational categories. If women were being ascribed their husbands' occupation only when they genuinely shared it, we would expect instead to find, for example, a significant number of farmers' wives also employed in agriculture, but fewer day labourers' wives also employed as day labourers. We would also never see women being ascribed exclusively or largely male occupations such as judge, clerk, stone mason, etcetera.

No women were ascribed exclusively male occupations in either 1881, 1896, or 1901 in either Bréauté or Nogent. And in both cantons, the wives of farmers were always more likely to share their husbands' occupation than the wives of day labourers. As such, it was concluded that 1856 indeed presented a case of under-enumeration of women's occupations, and ought to be adjusted. A first option would have been to adjust the 1856 figures in order to bring the overall independent:couple ratio back in line with the overall trend observed in the ratio. However, this method would have required assuming that 'independent' women were all being enumerated correctly, and that adjusting the 1856 figures simply required increasing the number of women working with their husbands (the 'couple') until reaching the desired ratio. But as we saw earlier, the independent:couple ratios for women *with an occupation* in 1856 were in line with the overall trends in the ratio. This suggested that when women *were* being given an occupation in the 1856 census, they were not more or less likely to be given their husband's occupation than the overall trends suggested they should have been, i.e. they were probably being enumerated correctly. It also suggested that, contrary to what Grantham had argued, the change in directives between the 1851 and 1856 censuses may not always have led census enumerators to disregard market-oriented work performed at home in nominative lists. But it also

rendered the above option unsatisfactory: the problem was not that fewer women working with their husbands were being enumerated as such, but that fewer women were being given an occupation *at all*.

Instead, for Bréauté, a number of communes were identified that showed normal-to-average overall independent:couple ratios in 1856. These communes were more likely to precede or follow the mention 'sa femme' with an occupational descriptor in the nominative lists, and clearly enumerated women more fully and more accurately. The same adjustment method as the one used for Bréauté in 1792 was applied. For Nogent, no such communes could be found. Because we have shown that the enumeration practices of the 1856 census did not appear to significantly affect the independent:couple ratios for women with an occupation, nor female sectoral distributions, this is unlikely to significantly affect analysis of sectoral trends in later chapters. However, analysis of patterns in female LFPR for Nogent will have to take into account the overall under-enumeration of women in 1856.

Finally, three communes in Nogent in 1896 presented abnormally high LFPR for married women, alongside abnormally low independent:couple ratios, an inflated primary sector, and deflated secondary sectors for women. These communes appeared to have ascribed husbands' occupations to the majority of married women – perhaps independently of whether these women had an independent occupation. Adjusting the figures on the basis of the other communes was considered. But the four remaining communes presented large variations too: two of them had very low LFPR for married women, alongside high independent:couple ratios, a deflated primary sector, and inflated secondary sector for women. These may have left the 'occupation' column empty whenever a woman did not have an independent occupation, regardless of whether she worked alongside her husband or not. The two remaining communes, Margon and Nogent-le-Rotrou, presented average independent:couple ratios, LFPR for married women, and sectoral distributions. However Nogent cannot be used as a guideline for other communes because, as the central town of the Perche, it presented levels of urbanisation and occupational diversity unlike any of the others. Margon may have provided a satisfactory baseline – but once disaggregated by sectors, the figures for Margon also presented abnormal patterns and small numbers that made adjustments impossible. Instead, analysis for 1896

Nogent will be presented separately for the three types of communes identified above. We note too that these patterns once again suggest that actual enumeration conventions in nominative lists could differ from official census directives.

Next, the allocation of servants to economic sectors had to be considered. The ambiguity of the term 'servant' or 'domestique' is well-known. As Ann Kussmaul remarked in her famous study of servants in husbandry, the term 'servant' could be used to denote 'all those who worked for one master', and was never restricted to domestic servants: Kussmaul estimated that between one-third and one-half of hired labour in early modern agriculture was supplied by servants.[65] In the French sources, the distinction between 'domestique' and 'ouvrier agricole' was not introduced until 1896, and in fact few census enumerators for Bréauté and Nogent made use of the distinction even then.[66] A series of tests were therefore run to establish patterns that might provide clues as to the nature of servants' work in different households.

Across both Bréauté and Nogent, the male:female ratio for servants rose through time, except for the town of Nogent-le-Rotrou, where the majority of servants were always female (see Table 2.1). Further, as shown in Table 2.2, primary households (i.e. where the head worked in the primary sector) always had more servants of both sexes than non-primary households, and more male servants than female servants. In the town of Nogent-le-Rotrou, a much higher proportion of tertiary households had female servants than in surrounding rural communes or in Bréauté, though approximately the same proportion of tertiary households had male servants. The fact that the timing of the rises in the male:female ratio corresponds to the progressive de-industrialisation of the two cantons (see Chapter II.3 for further details); that primary households were the most likely to have servants; that primary households had more male than female servants; and that tertiary households had more female servants than male servants all suggest, first, that the majority of servants were likely to be

[65] Ann Kussmaul, *Servants in Husbandry in Early Modern England* (Cambridge: Cambridge University Press, 1981), 4–5.
[66] Pierre Guiral and Guy Thuillier, *La vie quotidienne des domestiques en France au XIXe siècle* (Paris: Hachette, 1978), 10.

agricultural servants, and second, that male servants were more likely to be agricultural servants than female servants. Indeed, Kussmaul found that, in Britain, the ratio of male to female domestic servants in 1851 was 13:100, while the ratio in farm service was 213:100.[67]

*Table 2.1: Ratio of male to female servants and average number of servants per households according to gender and head of household's occupational sector, cantons of Bréauté and Nogent (weighted averages)*

| | Year | Ratio male:female servants | Average number female servants in primary households | Average number male servants in primary households | Average number female servants in non-primary households | Average number male servants in non-primary households |
|---|---|---|---|---|---|---|
| **Bréauté** | | | | | | |
| | **1792** | 0.98 | 1.09 | 1.94 | 1.03 | 1.17 |
| | **1793** | 3.9 | 1.22 | 1.83 | 1.09 | 1.27 |
| | **1856** | 2.43 | 1.04 | 2.32 | 1.06 | 1.81 |
| | **1881** | 3.28 | 1.09 | 2.34 | 1.09 | 1.59 |
| | **1901** | 3.44 | 1.04 | 2.25 | 1.11 | 1.4 |

| | Year | Ratio male:female servants | Average number female servants primary houses | Average number male servants primary houses | Average number female servants non-primary houses | Average number male servants non-primary houses |
|---|---|---|---|---|---|---|
| **Nogent** | | | | | | |
| | **1796** | 0.95 | NA | NA | NA | NA |
| | **1856** | 1.01 | 1.29 | 2.15 | 1.14 | 1.47 |
| | **1896** | 0.94 | 1.12 | 1.88 | 1.15 | 1.3 |

*Source: see note 45 on page 15*

[67] Kussmaul, *Servants in Husbandry in Early Modern England*, 4.

*Table 2.2: Percentages of households with servants according to gender and head of household's occupational sector, cantons of Bréauté and Nogent (weighted averages)*

| Bréauté | Year | Average percentage primary houses with female servants (%) | Average percentage primary houses with male servants (%) | Average percentage secondary houses with female servants (%) | Average percentage secondary houses with male servants (%) | Average percentage tertiary houses with female servants (%) | Average percentage tertiary houses with male servants (%) |
|---|---|---|---|---|---|---|---|
| | **1792** | 36 | 30 | 4 | 2 | 10 | 3 |
| | **1793** | 23 | 27 | 3 | 2 | 9 | 6 |
| | **1856** | 18 | 25 | 1 | 2 | 15 | 9 |
| | **1881** | 15 | 30 | 2 | 1 | 10 | 7 |
| | **1901** | 13 | 34 | 3 | 2 | 12 | 6 |

| Nogent | Year | Average percentage primary houses with female servants (%) | Average percentage primary houses with male servants (%) | Average percentage secondary houses with female servants (%) | Average percentage secondary houses with male servants (%) | Average percentage tertiary houses with female servants (%) | Average percentage tertiary houses with male servants (%) |
|---|---|---|---|---|---|---|---|
| | **1796** | NA | NA | NA | NA | NA | NA |
| | **1856** | 38 | 39 | 4 | 3 | 24 | 6 |
| | **1896** | 22 | 29 | 4 | 0 | 23 | 3 |

*Source: see note 45 on page 15*

That is not to suggest that servants worked in either agricultural or domestic service exclusively. Secondary and tertiary households were significantly less likely to have both female *and* male servants than primary households at all years: 49-77% of primary households had both female and male servants in Bréauté, 74-78% in Nogent depending on the year. But only 11-43% of secondary households and 9-36% of tertiary households in Bréauté; and 5-13% of secondary household and 11-18% of tertiary households in Nogent had both female and male servants depending on the year. And the occupations of the heads of secondary households with servants were clearly gendered in a way that corresponded to the gender of their servants: secondary heads with female servants were mostly textile workers at earlier dates and later mostly bakers, all occupations commonly shared by women; but secondary heads with male servants were mostly millers, bakers,

and butchers. Finally, households with female servants were not more likely to have three or more children under the age of five. Combined with the fact that the timing of the fall in the number and proportion of female servants in Bréauté corresponded to the collapse of spinning as a female employer, these patterns suggest that servants could be employed by workers outside of the primary sector not simply to perform domestic tasks, but also to assist the main household occupation.

Finally, almost all tertiary households that employed servants were headed by landowners and annuitants, some by merchants, innkeepers, priests or mayors. These occupations are all indicative of high socio-economic status and/or the need for liveried servants. Combined with the fact that tertiary households were more likely to have female than male servants, this could indicate that most servants in tertiary households were domestic servants. Of course, it is at least plausible that some of the servants in these households were employed to work on land owned by the households and, for future research, an analysis of landholding patterns using Napoleonic cadasters and land tax registers could enable an assessment of the likelihood of secondary and tertiary houses owning land, and hence a more precise assessment of their servants' work tasks. However this was not possible within the constraints of the dissertation.

On the basis of the above, it was therefore decided to allocate servants as follows: male servants in primary households were allocated entirely to agriculture. Female servants in primary households were allocated 75% to agriculture, and 25% to domestic service. Male servants in secondary households were allocated to the occupation of the head of household. Female servants in secondary households were allocated 50% to the occupation of the head of household and 50% to domestic service – unless neither the occupation or the head, nor that of his wife, were occupations

commonly shared by women, in which case they were allocated entirely to domestic service. All servants in tertiary households were allocated to domestic service.[68]

Further sensitivity tests were nonetheless run to assess the impact of these assumptions on sectoral distributions. Analysis was run first with the assumptions above, then on the assumption that all female servants belonged to domestic service, and finally on the assumption that the female and male servants of landowners and annuitants were 50% agricultural servants and 50% domestic servants. The results of the tests are shown in Table 2.3. In both cantons, the first two sets of assumptions had very little effect on male sectoral distributions, with the third set leading to perhaps suspiciously low percentages of male domestic servants. The different sets of assumptions had a more significant effect on female sectoral distributions, but this did not affect the overall trends observed. Further, the size of the variations introduced by the different assumptions in Nogent 1856 are most probably the result of female servants being over-enumerated in relation to other female workers because of the enumeration conventions described earlier – this has been accounted for in later analysis. On the basis of the female sectoral distribution figures for the primary and tertiary sector and/or domestic service, it could nonetheless be tempting to think that the third set of assumptions produced a more likely trend in female sectoral distributions for Nogent. However, 229 out of 258 of the female servants in tertiary households in 1856 were concentrated in the town of Nogent-le-Rotrou: it would be particularly unlikely for half of these servants to have been agricultural servants. That the third set of assumptions produces smoother trends in sectoral distributions does not in itself mean that it is closer to reality – and indeed, it will be shown in later chapters that there are reasons to believe

[68] While these numbers are somewhat arbitrary, they were thought to genuinely reflect plausible time-use: female servants in primary households would most likely have spent most of their time working on the farm e.g. dairying, whilst secondary and tertiary households which chose to/were able to employ female servants would most probably have been of higher social status and have required less help, if any, with the main household occupation – such that the female servants would probably have spent a more significant portion of their time employed in domestic tasks.
Note also that Nogent 1796 presented the additional difficulty of being organized by alphabetical order rather than households, rendering the above adjustments impossible. It was found that, in Nogent 1856, on average 37% of female servants were in primary households, 6,79% in secondary households, and 53,09% in tertiary households. 73% of male servants were in primary households, 8,03% in secondary households, and 17,03% in tertiary households. Because 1856 was the best available proxy for 1796, it was decided to allocate female servants in 1796 to houses by sector on a 40:5:55 basis; and male servants on a 75:10:15 basis, before applying the same method as above.

that female sectoral distributions in Nogent genuinely did follow U-shaped patterns in most sectors during the period. The first set of assumptions was therefore preferred throughout subsequent analysis.

*Table 2.3: Female and male sectoral distributions across time according to chosen set of assumptions for the distribution of servants (weighted averages)*

Panel A: female sectoral distributions, canton of Bréauté

| Year | Female Primary Sector (%) | | | Female Secondary Sector (%) | | | Female Tertiary Sector (%) | | | Female Textiles (%) | | | Female Domestic Service (%) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | *Assumptions 1* | *Assumptions 2* | *Assumptions 3* | *Assumptions 1* | *Assumptions 2* | *Assumptions 3* | *Assumptions 1* | *Assumptions 2* | *Assumptions 3* | *Assumptions 1* | *Assumptions 2* | *Assumptions 3* | *Assumptions 1* | *Assumptions 2* | *Assumptions 3* |
| **1792** | 18 | 12 | 18 | 75 | 74 | 75 | 4 | 10 | 4 | 71 | 71 | 71 | 3 | 10 | 3 |
| **1793** | 11 | 8 | 11 | 81 | 80 | 81 | 3 | 6 | 3 | 78 | 77 | 78 | 2 | 6 | 2 |
| **1856** | 20 | 13 | 20 | 62 | 61 | 62 | 10 | 17 | 9 | 54 | 54 | 54 | 6 | 13 | 3 |
| **1881** | 35 | 31 | 35 | 42 | 42 | 42 | 10 | 14 | 9 | 33 | 33 | 33 | 3 | 8 | 2 |
| **1901** | 33 | 28 | 34 | 21 | 21 | 21 | 21 | 26 | 20 | 10 | 10 | 10 | 6 | 11 | 3 |

Panel B: Male sectoral distributions, canton of Bréauté

| Year | Male Primary Sector (%) | | | Male Secondary Sector (%) | | | Male Tertiary Sector (%) | | | Male Textiles (%) | | | Male Domestic Service (%) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | *Assumptions 1* | *Assumptions 2* | *Assumptions 3* | *Assumptions 1* | *Assumptions 2* | *Assumptions 3* | *Assumptions 1* | *Assumptions 2* | *Assumptions 3* | *Assumptions 1* | *Assumptions 2* | *Assumptions 3* | *Assumptions 1* | *Assumptions 2* | *Assumptions 3* |
| **1792** | 26 | 26 | 26 | 43 | 43 | 43 | 5 | 5 | 5 | 28 | 28 | 28 | 0 | 0 | 0 |
| **1793** | 25 | 25 | 25 | 48 | 48 | 48 | 6 | 6 | 6 | 37 | 37 | 37 | 0 | 0 | 0 |
| **1856** | 41 | 41 | 41 | 32 | 32 | 32 | 9 | 9 | 9 | 17 | 17 | 17 | 2 | 2 | 1 |
| **1881** | 59 | 59 | 59 | 21 | 21 | 21 | 10 | 10 | 10 | 8 | 8 | 10 | 1 | 1 | 0 |
| **1901** | 57 | 57 | 58 | 19 | 19 | 19 | 11 | 11 | 11 | 2 | 2 | 2 | 1 | 1 | 0 |

Panel C: Female sectoral distributions, canton of Nogent

| Year | Female Primary Sector (%) | | | Female Secondary Sector (%) | | | Female Tertiary Sector (%) | | | Female Textiles (%) | | | Female Domestic Service (%) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | *Assumptions 1* | *Assumptions 2* | *Assumptions 3* | *Assumptions 1* | *Assumptions 2* | *Assumptions 3* | *Assumptions 1* | *Assumptions 2* | *Assumptions 3* | *Assumptions 1* | *Assumptions 2* | *Assumptions 3* | *Assumptions 1* | *Assumptions 2* | *Assumptions 3* |
| **1796** | 24 | 17 | 30 | 44 | 43 | 44 | 20 | 27 | 14 | NA | NA | NA | 15 | 22 | 9 |
| **1856** | 14 | 1 | 21 | 22 | 20 | 22 | 47 | 60 | 40 | 7 | 7 | 7 | 30 | 44 | 12 |
| **1896** | 15 | 12 | 16 | 32 | 31 | 32 | 34 | 37 | 28 | 0 | 0 | 0 | 15 | 19 | 3 |

Panel D: Male sectoral distributions, canton of Nogent

| Year | Male Primary Sector (%) | | | Male Secondary Sector (%) | | | Male Tertiary Sector (%) | | | Male Textiles (%) | | | Male Domestic Service (%) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | *Assumptions 1* | *Assumptions 2* | *Assumptions 3* | *Assumptions 1* | *Assumptions 2* | *Assumptions 3* | *Assumptions 1* | *Assumptions 2* | *Assumptions 3* | *Assumptions 1* | *Assumptions 2* | *Assumptions 3* | *Assumptions 1* | *Assumptions 2* | *Assumptions 3* |
| **1796** | 27 | 27 | 28 | 39 | 39 | 39 | 13 | 13 | 12 | NA | NA | NA | 2 | 2 | 1 |
| **1856** | 26 | 26 | 27 | 35 | 35 | 35 | 19 | 19 | 19 | 6 | 6 | 6 | 2 | 2 | 2 |
| **1896** | 23 | 23 | 23 | 41 | 41 | 41 | 22 | 22 | 22 | 1 | 1 | 1 | 1 | 1 | 0 |

*Source : see note 45 on page 15*

*Note: all sectoral distribution tables show the textile sector and domestic service separately given their significance to the analysis, however note that textiles is also included in the secondary total, and domestic service in the tertiary total. Percentages may fall short of 100% as labourers were not allocated to sectors at this stage in the analysis.*

Labourers also had to be allocated to economic sectors. The term 'labourer' ('journalier' in the sources) is a sectorally-unspecific occupational descriptor that describes workers who hire out their labour by the day. Given the highly agricultural nature of most of the communes considered, and the progressive de-industrialisation witnessed by the two cantons under study, it is likely that the majority of labourers were agricultural workers. However, this may not have been the case in the town of Nogent-le-Rotrou, while a number of secondary sector occupations would also have offered opportunities for employment by the day. Hence, in order to allocate labourers to economic sectors, the average numbers of labourers required by a variety of secondary-sector workers in England between 1600 and 1850 were applied to the data, on the assumption that the work requirements of the various occupations would not have varied significantly between England and France.[69]

Finally, the question of how to count those with multiple stated occupations was considered. The analysis for sectoral distributions was initially run three times: first, on the assumption that those with multiple occupations split their time equally between all occupations; second, on the assumption that they dedicated most time to the first stated occupation and least to the last stated occupation; third, on the assumption that they dedicated least time to the first stated occupation and most to the last stated occupation. It was found that the proportion of individuals with multiple stated occupations was far too small for alternative allocations to have any visible effect on sectoral distributions. The second assumption was preferred as it seemed to be the most plausible, but this will not have significantly affected reported totals.

[69] Relevant secondary occupations were as follows: brewers, distillers, bricklayers, carpenters, thatchers, glaziers, 'terrassiers', 'vitriers', masons, nail-makers, potters, tanners, skinners, and shipbuilders. The average numbers were derived from Sebastian Keibek's work on the male occupational structure of England and Wales, 1600-1850, and obtained through personal communication with Keibek. The use of English ratios is of course imperfect, but, at present, represented the best available adjustement method – while there is no obvious difference why French and English ratios should be very different.
The number of heads of households in relevant secondary occupations was counted and multiplied by the average number of required workers for that occupation. The number of non-heads of households in the same occupations plus workers and apprentices in the same occupations counted second. Labourers were then added to each occupation count until the number of non-heads of households plus workers and apprentices plus labourers matched the total required workers for each occupation. Remaining labourers were allocated to the primary sector.
Keibek, 'The Male Occupational Structure of England and Wales, 1600-1850'; Sebastian Keibek, 'Allocating Labourers', July 2018.

Having adjusted and allocated the listings and censuses, Chapters II.2 and II.3 will present overall trends in LFPR and sectoral distributions. Further chapters will then analyse these in relation to a number of debates surrounding women's work and industrialisation more broadly.

## II.2 Labour force participation rates

Table 2.4 shows labour force participation rates over time for Bréauté and Nogent.

A few precautionary remarks are necessary before going on to an interpretation of the overall trends. For both cantons, the year 1856 once again stands out for female LFPR. This was entirely expected for Nogent, as the census could not be adjusted for reasons explained above. But that the figure appears abnormally low for Bréauté even after adjustment requires further consideration. This could be due to a number of things. First, while married women's LFPR were adjusted using the independent:couple ratios, this method could not be followed for single women such as daughters whose occupations would also have been under-enumerated. But this does not explain the pattern entirely: as will be shown in Table 3.2, LFPR appear abnormally low for both single women *and* married women, even after adjustment. Alternatively, the communes on which the adjustments were based may in fact have also under-enumerated women's occupations: three other communes that presented what were thought to be abnormally *high* married women's LFPR may have been closer to reality. However, this is unlikely to be the case. The three communes with high female LFPR showed abnormally low independent:couple ratios both when compared to other communes in 1856, *and* when compared with overall trends throughout the period. They also showed inflated primary sectors for female sectoral distributions – but not for male sectoral distributions: this suggested that the three communes were not more agricultural overall, but instead over-enumerated the wives of primary sector heads of households as working in the primary sector too. Indeed, these three communes enumerated the quasi-totality of the wives of primary, secondary, tertiary heads and labourers as

primary, secondary, tertiary workers and labourers respectively – enumerating a significantly lower proportion of women as working in textiles than other communes as a result.[70] A third possibility would be that at least part of the fall in female LFPR was genuine. In Chapter II.3, we will show that the period 1793-1856 saw the near-disappearance of the principal female occupier, spinning – and that, while some women were able to move into weaving as a replacement, this was not sufficient to make up for the collapse of spinning entirely. By 1881 and 1901, large numbers of women had entirely reverted to the primary sector as a result – but while this trend was already visible in 1856, these occupations still employed a relatively low number, and proportion, of women, compared to what they would employ in later years. Hence, if 1856 represented a transition period between women being employed mainly in textiles and women transferring back to agriculture, female LFPR may well have been genuinely lower, though perhaps the magnitude of the change indicated by the figures is exaggerated by the difficulty of adjusting the data for enumeration conventions.

[70] Note that this was adjusted for in subsequent analysis, as explained in Chapter II.1

*Table 2.4: Female and male labour force participation rates across time, cantons of Bréauté and Nogent (weighted averages)*

| | Year | Female labour force participation rates (%) | | Male labour force participation rates (%) | |
|---|---|---|---|---|---|
| | | *No* | *%* | *No* | *%* |
| **Bréauté** | **1792** | 1254 | 79 | 1348 | 84 |
| | **1793** | 1733 | 89 | 1738 | 89 |
| | **1856** | 1246 | 47 | 2122 | 80 |
| | **1881** | 1619 | 75 | 1951 | 88 |
| | **1901** | 951 | 50 | 1741 | 88 |

| | Year | | Female labour force participation rates (%) | | Male labour force participation rates (%) | |
|---|---|---|---|---|---|---|
| | | | *No* | *%* | *No* | *%* |
| **Nogent** | **1796** | | 1830 | 48 | 2459 | 79 |
| | **1856** | | 1064 | 27 | 2820 | 80 |
| | **1896** | **Margon and Nogent-le-Rotrou** | 1829 | 50 | 2566 | 86 |
| | | **Trizay-Coutretot-Saint Serge, Coudreceau, Saint-Jean-Pierre-Fixte** | 497 | 81 | 468 | 94 |
| | | **Brunelles, Champrond en Perche** | 58 | 18 | 287 | 86 |
| | | **All** | 2270 | 51 | 3321 | 87 |

*Source: see note 45 on page 15*
*Note: 'No' represents the number of observations – in this case, the number of men/women with an occupation for each canton and each year.*

At any rate, Bréauté presents a clear overall trend of falling female LFPR, from a height of 79-89% in 1792-3, to a mere 50% in 1901. The sharp fall in female LFPR between 1881 and 1901 appears entirely genuine: no significant change in enumeration practice is evident between these two censuses, independent:couple ratios follow overall trends closely for all communes. In Chapter II.3, the fall will be shown to correspond to the disappearance of the textile industry from the canton. Male LFPR, meanwhile, remain relatively constant at 80-89%.

The trends for Nogent are less straightforward. Male LFPR remain relatively constant at around 80-87%. But analysis of patterns for women is complicated by the fact that the figures for 1856 could not be successfully adjusted, and by the fact that 1896 communes seem to present three distinct patterns of enumeration for married women. Group 2 appears quite clearly to over-enumerate both women's and men's occupations – and indeed presented extremely low independent:couple ratios. Group 3 clearly appears to under-enumerate women's occupations, and presented extremely high independent:couple ratios. The representativeness of Group 1 is unclear, given that it includes the town of Nogent-le-Rotrou. Taking these factors into account, it would nonetheless appear that female LFPR in Nogent remained relatively stable throughout the period, though at much lower levels than in Bréauté, stagnating at just under 50%.

Table 2.5 shows the evolution of independent:couple ratios through time. The *overall* independent:couple ratio takes into account both married women with and without occupations. As such, it correlates with trends in female LFPR, and is affected by enumeration conventions – with the year 1856 standing out yet again. The independent:couple ratio *for women with an occupation*, however, is not affected by the above. For Bréauté, it appears to reflect instead a growing tendency for women, when they have a stated occupation, to share their husbands' – independently of enumeration conventions. Once broken down by husbands' occupation, the ratios for Bréauté reveal that this trend resulted from the combined effect of fewer women working alongside their husbands in the secondary sector (mostly textiles), but a growing number of women working alongside their husbands in the tertiary sector, as labourers, and, especially, as farmers.

Unfortunately the trends for Nogent are unclear. Independent:couple ratios could not be calculated for 1796 as the census was organised by alphabetical order and not by households, while ratios for 1856 appear abnormally high due to the overall under-enumeration of women.

*Table 2.5: Independent:couple ratios for all women, women with occupations, and according to husband's occupation across time, cantons of Bréauté and Nogent*

| | Year | Indep:couple ratios, all women | Indep:couple ratios, women with occupations | Indep:couple ratios, husband in primary sector | Indep:couple ratios, husband day labourer | Indep:couple ratios, husband in secondary sector | Indep:couple ratios, husband in tertiary sector |
|---|---|---|---|---|---|---|---|
| **Bréauté** | | | | | | | |
| | **1792** | 3.17 | 1.67 | 0.82 | 137 | 0.01 | 10.17 |
| | **1793** | 1.71 | 1.61 | 1 | 221 | 0.01 | 8.33 |
| | **1856** | 27.22 | 1.36 | 0.12 | 5.33 | 0.01 | 1.29 |
| | **1881** | 3.41 | 0.61 | 0.05 | 1.38 | 0.11 | 0.68 |
| | **1901** | 4.6 | 0.52 | 0.01 | 0.29 | 0.79 | 0.63 |

| | Year | Indep:couple ratios. all women | Indep:couple ratios. women with occupations | Indep:couple ratios. husband in primary sector | Indep:couple ratios. husband day labourer | Indep:couple ratios. husband in secondary sector | Indep:couple ratios. husband in tertiary sector |
|---|---|---|---|---|---|---|---|
| **Nogent** | | | | | | | |
| | **1796** | NA | NA | NA | NA | NA | NA |
| | **1856** | 124.2 | 46 | 0 | 7 | 2.22 | 0.25 |
| | **1896** | 9.36 | 0.97 | 0.02 | 0.37 | 0.65 | 0.64 |

*Source: see note 45 on page 15*

## II.3 Sectoral distributions

Table 2.6 shows sectoral distributions for women, men, and the full population sample in Bréauté and Nogent throughout the period under study.

Again, a number of remarks are necessary before proceeding to an analysis of the patterns. As we saw earlier, even before adjustments, the enumeration practices of the 1856 census did not appear to affect overall female sectoral distributions in Bréauté – in other words, although the 1856 census under-enumerated women with an occupation, when it *did* record women's occupation, it appeared to do so mostly accurately, and the underreporting was even across sectors.[71] This was not so clear in Nogent however – and indeed, it would appear that the 1856 census may have over-enumerated

[71] With the exception of the three communes referred to in Chapter II.2, which were adjusted for subsequent analysis.

female domestic servants: while the enumeration conventions followed in 1856 Nogent probably reduced the likelihood of women and daughters being enumerated with an occupation, female servants would still have been enumerated and/or were identifiable from their 'position within the household.' This does not, however, preclude from identifying general trends. What is perhaps more problematic is the fact that the varying enumeration practices followed between different communes in Nogent in 1896 result in large variations in female sectoral distributions. Further, the weighted averages for Nogent are heavily skewed at all years by the town of Nogent-le-Rotrou, which represented on average nearly 70% of the population sample, but a more varied and urban occupational structure. Hence, although for the sake of clarity and concision only weighted averages are reported in Table 2.6, where necessary, analysis will make reference to patterns observed when looking at the disaggregated data.

*Table 2.6:Sectoral distributions over time for women, men, and the full population sample, cantons of Bréauté and Nogent (weighted averages)*

| | Year | Women | | | | | Men | | | | | Full population sample | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | *Primary (%)* | *Secondary (%)* | *Tertiary (%)* | *Textiles (%)* | *Domestic service (%)* | *Primary (%)* | *Secondary (%)* | *Tertiary (%)* | *Textiles (%)* | *Domestic service (%)* | *Primary (%)* | *Secondary (%)* | *Tertiary (%)* | *Textiles (%)* | *Domestic service (%)* |
| **Bréauté** | **1792** | 17 | 77 | 4 | 74 | 3 | 45 | 44 | 5 | 28 | 0 | 32 | 60 | 5 | 50 | 2 |
| | **1793** | 12 | 81 | 3 | 78 | 2 | 42 | 49 | 6 | 37 | 0 | 27 | 65 | 5 | 57 | 1 |
| | **1856** | 22 | 70 | 10 | 65 | 6 | 59 | 32 | 9 | 17 | 2 | 45 | 46 | 9 | 35 | 3 |
| | **1881** | 45 | 42 | 10 | 33 | 3 | 70 | 20 | 10 | 8 | 1 | 59 | 31 | 10 | 19 | 2 |
| | **1901** | 56 | 21 | 21 | 10 | 6 | 71 | 19 | 10 | 2 | 1 | 67 | 19 | 14 | 5 | 3 |

| | Year | | Women | | | | | Men | | | | | Full population sample | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | *Primary (%)* | *Secondary (%)* | *Tertiary (%)* | *Textiles (%)* | *Domestic service (%)* | *Primary (%)* | *Secondary (%)* | *Tertiary (%)* | *Textiles (%)* | *Domestic service (%)* | *Primary (%)* | *Secondary (%)* | *Tertiary (%)* | *Textiles (%)* | *Domestic service (%)* |
| | **1796** | | 36 | 44 | 20 | 34 | 15 | 45 | 42 | 13 | 17 | 2 | 42 | 43 | 15 | 25 | 8 |
| | **1856** | | 31 | 22 | 47 | 7 | 30 | 46 | 36 | 18 | 6 | 2 | 41 | 33 | 26 | 6 | 10 |
| **Nogent** | **1896** | **Margon and Nogent-le-Rotrou** | 84 | 4 | 7 | 0 | 7 | 22 | 51 | 27 | 1 | 1 | 24 | 49 | 27 | 1 | 2 |
| | | **Trizay-Coutretot-Saint Serge, Coudreceau, Saint-Jean-Pierre-Fixte** | 31 | 34 | 35 | 0 | 15 | 83 | 21 | 4 | 0 | 1 | 40 | 31 | 30 | 0 | 12 |
| | | **Brunelles, Champrond en Perche** | 26 | 38 | 37 | 0 | 17 | 94 | 17 | 5 | 0 | 0 | 35 | 35 | 32 | 0 | 15 |
| | | **All** | 34 | 32 | 34 | 0 | 15 | 36 | 42 | 22 | 1 | 1 | 35 | 38 | 27 | 0 | 7 |

*Source : see note 45 on page 15*
*Note: percentages in the 1790s may fall short of 100% due to a small number of sectorally unspecific occupations*
*See table 2.4 for total number of observations per year and gender*

To accompany the analysis of trends in sectoral distributions, Table 2.7 shows patterns within the textile industry, and Table 2.8 shows the evolution of the top occupations for men and women.

The overall trend for Bréauté is one of clear de-industrialisation related to the progressive demise of the textile sector. We note that the timing and evolution of these patterns differ when looking at female and male distributions: textile and secondary sector employment fall much more sharply for men between 1793 and 1856 than for women, but stabilise more rapidly. The decline for women is concentrated in the years 1856-1901 instead, with a sharp fall between 1881 and 1901. A closer look at Table 2.7 can help explain these different timelines. 1793-1856 marked the near-total disappearance of spinning as a major female employer in the canton, and the collapse of specialized weaving (carried out by the 'toilliers' and 'siamoisiers') as major male employers. But it also marked the beginning of the displacement of men by women in weaving: whereas there were no female weavers in either the 1792 or 1793 listings, by 1856, Bréauté had as many as 494 female weavers, and only 275 male weavers. By 1881, women entirely dominated the textile sector – as shown by the rising female to male ratios in textiles in Table 2.7 By 1901, however, with the textile sector having entirely collapsed in the region, weaving disappeared from the top female employers too – and women, like men earlier, reverted en masse to the primary sector. The data therefore reveal clear evidence of a link between the labour force shares of the secondary sector and textile industry, and the evolving (but persistent) importance of domestic production as spinning and later weaving mechanised and transferred to factory production – an evolution that will be discussed in more details in later chapters.

Nogent presents a similar pattern of collapse of the textile sector and de-industrialisation in the rural communes surrounding the town of Nogent-le-Rotrou, while the town's occupational structure remained relatively stagnant, at least for men. Though the canton was one of the most highly urbanized and proto-industrial of the department in the eighteenth and early nineteenth century, and although, in 1841-45, its share of the Eure-et-Loir's industrial product significantly exceeded its share of the department's population, by 1861, the canton represented 5,4% of the population but only 1,1%

of the industrial product.[72]The de-industrialisation of the countryside resulted in men reverting to the primary sector, and in a rise of the primary sector and domestic service/dry-nursing as female employers. The secondary sector appears to have followed a pattern close to a U-shaped curve for women over the full period. While this may in part be due to enumeration conventions in 1856 as noted above, the pattern may well be in part genuine: the period 1796-1856 was marked by the near-collapse of spinning as a female employer, but the period 1856-1896 saw the rise of hat-making and gloving industries as major female, and male, employers.

*Table 2.7: Female to male ratios in textiles and percentage workers in textiles according to gender, cantons of Bréauté and Nogent (weighted averages)*

| | Year | Female:male ratio in textiles | Female workers in textiles | | Male workers in textiles | |
|---|---|---|---|---|---|---|
| | | | *No* | *%* | *No* | *%* |
| **Bréauté** | **1792** | 2,43 | 926 | 71 | 381 | 28 |
| | **1793** | 2,11 | 1351 | 77 | 640 | 36 |
| | **1856** | 2,26 | 806 | 54 | 357 | 17 |
| | **1881** | 3,42 | 534 | 33 | 156 | 8 |
| | **1896** | 2,82 | 93 | 10 | 33 | 3 |

| | Year | Female:male ratio in textiles | Female workers in textiles | | Male workers in textiles | |
|---|---|---|---|---|---|---|
| | | | *No* | *%* | *No* | *%* |
| **Nogent** | **1796** | 1,46 | 625 | 35 | 428 | 17 |
| | **1856** | 0,48 | 79 | 7 | 164 | 6 |
| | **1896** | 0,21 | 4 | 0 | 19 | 0 |

*Source: see note 45 on page 15*

[72] Claude Cailly, *Mutations d'un espace proto-industriel: Le Perche aux XVIIIe-XIXe siècles* (Fédération des Amis du Perche, 1993), 398.

*Table 2.8: Top occupations across time according to gender, cantons of Bréauté and Nogent*

| | Year | Top Occupations for women | Top Occupations for Men |
|---|---|---|---|
| **Bréauté** | **1792** | Fileuse/spinner (895)<br>laboureur/agricultural worker (132)<br>domestique/servant (83) | laboureur/agricultural worker (269)<br>toillier/specialized weaver (253)<br>domestique/servant (219)<br>journalier/day labourer (210) |
| | **1793** | fileuse/spinner (1423)<br>domestique/servant (129)<br>laboureur/agricultural worker (115) | laboureur/agricultural worker (314)<br>siamoisier/specialized weaver (308)<br>journalier/day labourer (302)<br>toillier/specialized weaver (251) |
| | **1856** | tisserande/weaver (494)<br>cultivatrice/farmer (157)<br>domestique/servant (141) | cultivateur/farmer (506)<br>journalier/day labourer (412)<br>domestique/servant (358) |
| | **1881** | tisserande/weaver (523)<br>cultivatrice/farmer (417)<br>journalière/day labourer (221) | cultivateur/farmer (750)<br>journalier/day labourer (365)<br>domestique/servant (235) |
| | **1901** | journalière/day labourer (215)<br>cultivatrice/farmer (194)<br>domestique/servant (103) | cultivateur/farmer (339)<br>domestique/servant (305)<br>journalier/day labourer (277) |

| | Year | Top Occupations for women | Top Occupations for Men |
|---|---|---|---|
| **Nogent** | **1796** | fileuse/spinner (623)<br>domestique/servant (403)<br>journalière/day labourer (226) | journalier/day labourer (502)<br>domestique/servant (341)<br>étaminier/specialized weaver (231) |
| | **1856** | domestique/servant (487)<br>journalière/day labourer (189)<br>fileuse/spinner (72) | journalier/day labourer (631)<br>domestique/servant (401)<br>cultivateur/farmer (258) |
| | **1896** | journalière/day labourer (453)<br>domestique/servant (405)<br>couturière/seamstress (192)<br>chapelière/hat maker (189) | journalier/day labourer (555)<br>cultivateur/farmer (249)<br>chapelier/hat maker (214) |

*Source : see note 45 on page 15*
*Note: occupations are given both in French as stated in the original sources and with an English translation*

A final remark is perhaps needed on the female:male ratios observed in textiles in both cantons. The ratios may appear unusually low for the textile sector. However, given the high proportion of women employed in textiles in both cantons in the earlier period, this is unlikely to be due to an under-enumeration of female textile workers. Instead, the ratios can be explained by a number of factors. First, the Pays de Caux produced textiles for merchants in Rouen, who employed both male and female workers all around the department, while the Perche was known to employ female spinners and/or import spun wool from the neighbouring Beauce. The ratios may therefore simply represent the different geographical extent of textile employment by sex. Secondly, both cantons produced very specific types of cloth that required large numbers of male textile workers.

## II.4 Further remarks on the sources

In the introduction, we cited Grantham's 2012 paper, in which he suggested that the 1851 census was unique in its 'atypical' – but welcome – recording of market-oriented work performed at home. The high levels of female LFPR suggested by the 1792 and 1793 population listings for Bréauté, along with our analysis of the intended meaning of the use of 'idem' – and even the very fact of its usage – suggest that, for some regions, the revolutionary population listings too, were atypical in their recording of female employment in a way that offers many possibilities for critical analysis of biases and reconstructions of participation rates and sectoral distributions. Analysis of the 1856, 1881, 1896 and 1901 censuses has also suggested that, although the 1851 census was no doubt clearest in its distinction between those employed at home and 'dependents' (at least in theory), there is much to indicate that it was not the only nineteenth-century census offering unusually potent data on female employment. For Bréauté, the 1881 census, despite having followed the 1856 model rather than the 1851/1896-onwards model, presented higher levels of female LFPR than the 1901 census, and significant proportions of farmers' wives employed in agriculture. This suggests that, although the directives may have significantly affected the female employment data presented in published totals, for some communes at least, nominative lists in 1881 would have recorded both independent waged work, and market-oriented work performed at home. The 1856 census appears to have under-recorded women's work, but our analysis of the evolution of the independent:couple ratios for all women, and for women with a stated occupation, suggested that this was not due to the under-recording of women's market-oriented labour performed at home, but to a more *general* tendency by some enumerators to overlook women's occupations. In cases akin to Bréauté, broken-down independent:couple ratios may assist the partial correction of this bias.

As such, it is clear that analysis of female employment patterns can benefit from distinctions that go beyond the 'occupation vs. no occupation binary' – and indeed, in later chapters, we will show that being attentive to the distinction between waged occupation and household-based, market-

oriented occupation may help explain the differentiated impacts of mechanization and the collapse of textile proto-industries on female LFPR in different regions. But, equally importantly, we have suggested that, for some regions, French sources other than the 1851 census, spread across the period of industrialisation, are adapted to this type of analysis.

# III. Proto-industrialisation, women's work and the U-shaped curve

The trends analysed in Chapter II can be related to a number of debates regarding the link between cottage industry and women's work – and regarding proto-industrialisation more broadly.

## III.1 Proto-industrialisation

Proto-industrialisation theory was initially developed by Franklin Mendels to explain the move from agrarian economies to industrial economies that took place in Europe in the eighteenth and nineteenth centuries. In Mendels' model, proto-industrialization relied upon an essential linkage between cottage industry and commercial agriculture; was thought to have always preceded industrialization; and to have led to an irreversible rise in the number of marriages and in fertility rates.[73]

Numerous historians – including Wolfgang Mager, Adam Levine and Jennifer Hudson, Leslie Clarkson and Donald Coleman – have since used empirical evidence to dispute various aspects of the model and question its validity as an explanatory tool for industrialisation.[74] The cases of Bréauté and Nogent provide further such empirical evidence, emphasizing, first, that proto-industrialisation and commercial agriculture could go hand in hand; second, the complementarity of town and country in cottage industry; and third, the fact that, at least in the French case, chronologies of proto-

[73] F. Mendels, 'Proto-Industrialization: The First Phase of the Industrialization Process', *Journal of Economic History* 32, no. 1 (1972): 242, 246, 252.

[74] Relevant works include: Mager Wolfgang, 'Proto-Industrialization and Proto-Industry: The Uses and Drawbacks of Two Concepts', *Continuity and Change* 8, no. 2 (1993): 181–215; Pat Hudson, 'Proto-Industrialization in England', in *European Proto-Industrialization*, ed. Sheilagh Ogilvie and Markus Cerman (Cambridge: Cambridge University Press, 1996), 49–68; Sheilagh Ogilvie and Markus Cerman, 'Proto-Industrialization, Economic Development and Social Change in Early Modern Europe', in *European Proto-Industrialization*, ed. Sheilagh Ogilvie and Markus Cerman (Cambridge: Cambridge University Press, 1996), 227–39; L.A. Clarkson, *Proto-Industrialization: The First Phase of Industrialization?*, Studies in Economic and Social History (London: Macmillan Education, 1985); D. C. Coleman, 'Proto-Industrialization: A Concept Too Many', *The Economic History Review* 36, no. 3 (1983): 435–48, https://doi.org/10.2307/2594975.

industrialisation and industrialisation overlapped more often than not. Ogilvie and Gay Gullickson, in their respective studies of Württemberg and Auffay, remarked that 'proto-industrialisation does not seem to have decreased dependence on family farm land in the villages, but rather sustained it', and that 'seasonal unemployment and landlessness – not subsistence agriculture – were the distinguishing features of proto-industrial regions.'[75] And indeed, Bréauté, like Auffay, was situated in the Caux, a region that was amongst the top four grain-producers in eighteenth and early-nineteenth century France and regularly exported grain to Rouen and Le Havre, and even as far as Paris.[76] Yet textile cottage industry employed as much as 50-58% of all workers in 1792-3. Numerous historians have also remarked on the importance of towns in promoting and sustaining proto-industrialisation. This is made especially clear by the case of Nogent. Though the final-stages of textile production (weaving, dyeing, etc.) were concentrated in the town of Nogent-le-Rotrou – and indeed, 76% of male textile workers in 1796 lived in the town – a little over 50% of the female textile workers of the canton, upon whom the weavers would have been dependent for spun wool, lived in the rural communes surrounding the town.[77] Finally, a number of historians including Deyon have argued that 'the industrial revolution in France, far from making the proto-industrial system disappear, on the contrary solicited, integrated and perpetuated it until the beginning of the twentieth century.'[78] This is highlighted by the case of Bréauté: although the mechanisation of spinning and its concentration within factories along the Seine was well-underway by the 1850s, and although the mechanisation of weaving made continuous progress in the Seine-Maritime from the 1830s onward (see Chapter IV.3 for details), home production in the Caux continued to employ large proportions of working women until at least the 1880s, as shown by Table 2.6.

[75] Sheilagh Ogilvie, 'Women and Proto-Industrialisation in a Corporate Society: Württemberg Woollen Weaving, 1590-1760', in *Women's Work and the Family Economy in Historical Perspective*, ed. Pat Hudson and W.R. Lee (Manchester: Manchester University Press, 1990), 81; Gay Gullickson, 'Agriculture and Cottage Industry: Redefining the Causes of Proto-Industrialization', *Journal of Economic History* 43, no. 4 (1983): 849.
[76] Gullickson, 'Agriculture and Cottage Industry: Redefining the Causes of Proto-Industrialization', 841.
[77] Note that this in part explains the low female :male ratios observed in textiles, as remarked in Chapter II.3, as it illustrates the different geographical extent of textile employment by sex.
[78] Pierre Deyon, 'Proto-Indutrialization in France', in *European Proto-Industrialization*, ed. Sheilagh Ogilvie and Markus Cerman (Cambridge: Cambridge University Press, 1996), 46.

Moreover, the cases of Bréauté and Nogent suggest that these various aspects of the character of proto-industrialisation can in part be explained by specific patterns of sexual division of labour. Of course, other factors have to be taken into account. As remarked by Gullickson or Pat Hudson, landholding patterns could be significant determinants of the uptake and organization of cottage industry.[79] Although small tenures comprised over half of farming units in the Caux in the late eighteenth century, this accounted for a small proportion of total land, and over three-quarters of the land was held under tenant farming: the majority of the rural population would have been land-poor.[80] Similarly, contemporary records for Rouen show evidence of widespread fears that the attractiveness of cottage work would lead to shortages of workers during the harvest season in the 1720s, and suggest that the ubiquity of textile work in the countryside had forced significant raises in agricultural salaries.[81] Landholding patterns and wage differentials between cottage industry and agriculture most probably incentivized individuals and households to undertake proto-industrial textile work. However, this alone could not fully explain the adoption of proto-industry in regions such as the Caux and the Perche – and certainly not the *ubiquity* of its adoption in the late eighteenth century – were it not for specific patterns of gendered divisions of labour that created large reserves of unemployed or under-employed women with the skills required by urban merchants.[82] Claude Cailly remarked that in Nogent 'the largely urban *étamines* industry depends partially on a 'dualist' female labour market, resulting from the non-negligible contribution of a seasonal and temporary female workforce to the

[79] Gullickson, 'Agriculture and Cottage Industry: Redefining the Causes of Proto-Industrialization', 843; Hudson, 'Proto-Industrialization in England', 57.

[80] Sion, *Les paysans de la Normandie Orientale: Etude géographique*, 274; Gullickson, 'Agriculture and Cottage Industry: Redefining the Causes of Proto-Industrialization', 843.

[81] A 1722 *mémoire* from the township of Rouen remarked that 'labourers… paid 7, 8, 9 and 10 *sous* now demand up to 20, 25, and even 30 sous'; while an order for the local *Parlement* in June 1723 ordered a complete interruption of manufactures in the countryside from the 1st of July to the 15th of September 'to give all individuals the liberty to work at the grain harvest.'
Serge Chassagne, *Le coton et ses patrons: France, 1760-1840*, Civilisations et Sociétés 83 (Paris: Ecoles des Hautes Etudes en Sciences Sociales, 1991), 130; Sion, *Les paysans de la Normandie Orientale: Etude géographique*, 178.

[82] Note that when women are described as 'under-employed' or unemployed, this is exclusively intended in relation to market-oriented labour (whether waged or unwaged), and refers to cases in which women would most certainly have wanted more income-generating employment if it had been available. Such women were no doubt engaging in other forms of work (such as unpaid domestic work.)

first stages of production.'[83] Gullickson, in her study of Auffay, remarked that 'proto-industrialisation… was most likely to occur where urban and rural needs complemented each other, that is, where poor peasants, especially poor women peasants, met prosperous textile merchants.'[84]

More than this, the *chronology* of proto-industrialisation witnessed in the Caux cannot be fully accounted for without recognizing the importance of female labour to the preservation of cottage production in the face of mechanized and/or factory production. In a study of textile embroidery manufacture in nineteenth century Lorraine, Whitney Walton highlighted the importance of women's attitude to factory work to the 'persistence of hand and dispersed manufacturing in embroidering.'[85] Similarly, in a study of calico painters in Estavayer, Pierre Caspard remarked that women's participation in industrial work constituted a 'transitory phase' in industrialisation that 'allowed the manufacturers to come to terms with the traditional mode of production.'[86] Bréauté presents a case in point: though male weavers had largely disappeared from the canton by 1856, at which date mechanized weaving had already made good progress in the region, female labour – and most probably, cheap female labour – enabled the survival of textile production in the canton until at least the 1880s, when nearly 33% of working women were still employed in textiles.

The form, uptake, and survival of proto-industries therefore appear closely related to women's work. This, of course, is far from a new insight. As Ogilvie remarked, 'proto-industries have long been regarded as key determinants of women's labour market participation…'[87] In the introduction to this

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[83] 'L'industrie étaminière avant tout urbaine repose donc partiellement sur un marché du travail féminin « dualiste » résultant de l'apport non négligeable aux premiers stades de la production d'un volant de main d'œuvre féminine saisonnière et temporaire.' (own translation)
Claude Cailly, 'L'industrie étaminière dans le Perche au XVIIIe siècle : Une activité proto-industrielle économiquement avancée ?', *Annales de Normandie* 37, no. 1 (1987): 27, https://doi.org/10.3406/annor.1987.2017.

[84] Gullickson, 'Agriculture and Cottage Industry: Redefining the Causes of Proto-Industrialization', 850.

[85] Whitney Walton, 'Working Women, Gender, and Industrialization in Nineteenth-Century France: The Case of Lorraine Embroidery Manufacturing', in *European Women and Preindustrial Craft*, ed. Daryl Hafter (Indianapolis: Indiana University Press, 1995), 104.

[86] Pierre Caspard, 'The Calico Painters of Estavayer: Employers' Strategies toward the Market for Women's Labour', in *European Women and Preindustrial Craft*, ed. Daryl Hafter (Indianapolis: Indiana University Press, 1995), 134.

[87] Sheilagh Ogilvie, 'Women and Labour Markets in Early Modern Germany', *Jahrbuch Für Wirtschaftsgeschichte* 2 (2004): 29.

dissertation, we also cited the work of Saito on Cardington and Corfe Castle, which concluded that 'the effect of the cottage industry on the labour force participation profiles of females was remarkable and perhaps even unique' with regards to the high levels of female employment it produced.[88] My previous research on Westmorland, 1787-1851, supported this hypothesis – showing that female LFPR had declined from 66% in 1787, at a time when cottage textile production employed 104 women for the seven (rural) parishes for which full data was available, to a mere 29% by 1851, when the textile industry employed no women at all.[89] Ogilvie, however, disputes this hypothesis. Noting that 'female labour market participation *rate* may have been high, but its *composition* tells a rather different tale,' she argues that cottage industry in early modern Württemberg did not have a particularly significant effect on women's involvement in income-earning work[90] But while Ogilvie's assessment may hold for areas such as early modern Württemberg – where the majority of households owned land and where guilds controlled, and heavily restricted, proto-industrial production, the cases of the Caux and the Perche appear to reaffirm Saito's suggestion. As such, they provide potent case studies for the disputed 'U-shape curve' hypothesis.

## III.2 The U-shaped curve

In 1974, Eric Richards used data collected by Ivy Pinchbeck, additional data from cotton factories, and 1851-1881 census data to put forward the hypothesis that British female labour force participation rates followed a U-shaped curve, with industrialisation being associated to a narrowing of employment opportunities for women.[91] The hypothesis has since been repeated and further theorized, including by Claudia Goldin in a study of the United States in the twentieth century.[92] Others, however, have disputed the hypothesis. We mentioned earlier Humphries and Sarasúa's

[88] Saito, 'Who Worked When: Life-Time Profiles of Labour Force Participation in Cardington and Core Castle in the Late Eighteenth and Mid-Nineteenth Centuries', 27.
[89] Terki-Mignot, 'Changing Patterns of Female Employment in Westmorland, 1787-1851'.
[90] Ogilvie, 'Women and Labour Markets in Early Modern Germany', 36, 49.
[91] Richards, 'Women in the British Economy since about 1700: An Interpretation', 337, 345–47.
[92] Claudia Goldin, 'The U-Shaped Female Labor Force Function in Economic Development and Economic History' (Cambridge, MA: National Bureau of Economic Research, April 1994), 1, 6–7, https://doi.org/10.3386/w4707.

suggestion that the U-shaped curve was in part a 'statistical mirage' due to under-recording of female employment in sources than an accurate representation of reality. Humphries and Sarasúa recognised that the U-shaped curve might not be *entirely* artificial – and indeed, in her 2018 article, Sarasúa concluded that: 'this study's conclusions on Spain are consistent with recent literature showing that in many European regions non-agricultural employment followed a U-shaped curve… mostly because of women's work in labour-intensive, low-productivity textile manufactures.'[93] But they are not alone in having questioned the validity of the hypothesis. Ogilvie has further argued that the U-shaped curve hypothesis 'relies largely on evidence from a cross-section of twentieth-century developing economies', and consisted in an over-simplification of patterns of women's work.[94]

While there is no doubt that women worked, and even took part in waged labour, before the advent of proto-industry and continued to do so during industrialisation, just as there is no doubt that the 'U-shaped curve' would most probably be far from smooth in reality, the data collected for both Bréauté and Nogent seem to suggest that, at least in the French case, cottage industries *were* associated with uniquely high female labour force participation rates on the labour market as independent waged workers, and their disappearance *was* linked to narrowing opportunities for women in the labour market. The timing of falling female LFPR in Bréauté, and the rising proportion of female workers working alongside their husbands, correspond entirely to that of the progressive demise of textile cottage work in the canton. And while female LFPR appear more stagnant overall in Nogent, disaggregated analysis of the communes suggests that here too, the availability of textile work in the form of cottage industries was associated to higher female LFPR. The U-shaped curve hypothesis no doubt masks fluctuations and may not be adapted to all economies undergoing industrialisation, but there is much to be said in favour of its validity in the case of eighteenth and nineteenth century France.

[93] Sarasúa, 'Women's Work and Structural Change: Occupational Structure in Eighteenth-Century Spain', 26–27.
[94] Sheilagh Ogilvie, *A Bitter Living: Women, Markets, and Social Capital in Early Modern Germany* (Oxford: Oxford University Press, 2003), 335, 338.

# IV. Investigating the determinants of women's work in comparative perspective

## IV.1 Across households: demography as a determinant of women's work

Louise Tilly, Joan Scott and Miriam Cohen once remarked that 'women in this period [the early phases of industrialization] must be studied in their family settings, for the constraints of family membership greatly affected their opportunities for individual autonomy.'[95] While the story may be more nuanced than this – as we will show, family membership could increase opportunities as well as constrain them – it is clear that, in the words of Ogilvie, 'female employment reacts very sensitively to demographic and institutional changes altering the rewards of different uses of time.'[96] We will therefore attempt to supplement our earlier analysis of patterns of female employment with an analysis of sex ratios, household compositions, and the influence of marital status on patterns of employment.

Table 3.1 shows the sex ratios, proportions of single men and women, and an analysis of household composition by type for Bréauté and Nogent. Antoinette Fauve-Chamoux remarked that a high proportion of non-married women was a fundamental characteristic of European towns in the early modern period, and directly related to the female labour market.[97] The proportion of single women was, and remained, high throughout the period in both urban Nogent and rural Bréauté, as shown in Table 3.1. The percentage of female-headed households increased over the period, reaching a height of 27% in Bréauté in 1901 - though female headed households were always smaller than average. Gullickson had found similarly high percentages of female-headed households in Auffay in 1796 (23.8%) – and concluded from this that the wages that women could earn from spinning in that period

[95] Louise Tilly, Joan Scott, and Miriam Cohen, 'Women's Work and European Fertility Patterns', *Journal of Interdisciplinary History* 6, no. 3 (1976): 452.
[96] Ogilvie, 'Women and Proto-Industrialisation in a Corporate Society: Württemberg Woollen Weaving, 1590-1760', 76.
[97] Antoinette Fauve-Chamoux, 'Le surplus urbain des femmes en France préindustrielle et le rôle de la domesticité', *Population et histoire* 53, no. 1–2 (1998): 359, 371.

afforded them the possibility of independence.[98] In Nogent, the percentage of female-headed households was always a couple percentage points higher in the town of Nogent-le-Rotrou than in the rural communes. Moreover, sex ratios for the town were of 86% and 82% in 1856 and 1896 respectively – but sex ratios in surrounding communes always exceeded 100. This suggest that women may have migrated into the town for work, and that increased availability of female employment in towns may have had an influence on women's ability to support households without a husband.

*Table 3.1: Sex ratios, percentage single individuals according to gender, percentage female-headed households and average size of households according to head of household's gender, cantons of Bréauté and Nogent (weighted averages)*

| | Year | Sex ratio | Percentage single women (%) | Percentage single men (%) | Percentage female headed households (%) | Average size households | Average size female headed households |
|---|---|---|---|---|---|---|---|
| **Bréauté** | | | | | | | |
| | **1792** | 103.81 | 31.28 | 38.43 | 12.39 | 3.97 | 2.79 |
| | **1793** | 101.98 | 33.56 | 39.89 | 17.43 | 3.68 | 2.61 |
| | **1856** | 98.03 | 28.79 | 31.54 | 21.51 | 3.72 | 2.44 |
| | **1881** | 101.8 | 37.23 | 46.23 | 23.96 | 3.81 | 2.63 |
| | **1901** | 104.53 | 30.4 | 46.15 | 26.9 | 3.9 | 2.69 |

| | Year | Sex ratio | Percentage single women (%) | Percentage single men (%) | Percentage female headed households (%) | Average size households | Average size female headed households |
|---|---|---|---|---|---|---|---|
| **Nogent** | | | | | | | |
| | **1796** | | NA | NA | NA | NA | NA |
| | **1856** | 92.88 | 25.73 | 24.43 | 20.47 | 3.4 | 2.08 |
| | **1896** | 87.88 | 26.87 | 31.74 | 21.31 | 3.26 | 2.25 |

*Source: see note 45 on page 15*

[98] Gullickson, 'The Sexual Division of Labour in Cottage Industry and Agriculture in the Pays de Caux: Auffay, 1750-1850', 187.

The influence of marital status was then investigated. Table 3.2 shows LFPR for Bréauté and Nogent broken down by women's marital status. Figures for Bréauté suggest that married women were not more or less likely to have a stated occupation than single women, whilst widows were, for most years, the most likely to have a stated occupation. Figures for Nogent are more difficult to interpret for reasons explained earlier. On the whole, however, it would appear that single women were the most likely to have an occupation in Nogent, which may be have been a function of the urban availability of work for women and related to patterns of migration for work suggested by sex ratios.

*Table 3.2: Female labour force participation rates across time according to marital status, cantons of Bréauté and Nogent (weighted averages)*

| | Year | Labour force participation rates, single women | | Labour force participation rates, married women | | Labour force participation rates, widowed women | |
|---|---|---|---|---|---|---|---|
| | | *No* | *%* | *No* | *%* | *No* | *%* |
| **Bréauté** | **1792** | 508 | 78 | 645 | 81 | 98 | 72 |
| | **1793** | 697 | 84 | 875 | 93 | 157 | 91 |
| | **1856** | 499 | 47 | 536 | 40 | 206 | 77 |
| | **1881** | 707 | 71 | 831 | 79 | 77 | 80 |
| | **1901** | 418 | 53 | 406 | 45 | 123 | 62 |

| | Year | | Labour force participation rates, single women | | Labour force participation rates, married women | | Labour force participation rates, widowed women | |
|---|---|---|---|---|---|---|---|---|
| | | | *No* | *%* | *No* | *%* | *No* | *%* |
| | **1796** | | NA | NA | NA | NA | NA | NA |
| | **1856** | | 692 | 50 | 75 | 4 | 294 | 60 |
| **Nogent** | **1896** | **Margon and Nogent-le-Rotrou** | 871 | 65 | 727 | 40 | 228 | 47 |
| | | **Trizay-Coutretot-Saint Serge, Coudreceau, Saint-Jean-Pierre-Fixte** | 119 | 75 | 245 | 86 | 19 | 70 |
| | | **Brunelles, Champrond en Perche** | 45 | 41 | 8 | 4 | 1 | 25 |
| | | **All** | 1035 | 64 | 980 | 42 | 248 | 48 |

*Source: see note 45 on page 15*

*Note: 'No' represents the number of observations – in this case, the number of women with an occupation according to marital status, for each canton and each year.*

Table 3.3 shows the top female employers for Bréauté and Nogent broken down by women's marital status. In Bréauté, depending on the year, married women were either likely to engage in a greater variety of occupations than single women, or in a similar variety of occupations. The most noticeable difference is probably the high and growing importance of domestic service for single women. Note too the close similarity between married women's and widows' occupations. Nogent offers a different picture. Here, although once again domestic service appears as a significant employer of single – and widowed – women, but not married women,[99] married women appear to have engaged in a smaller variety of employments overall. This seems to have been correlated to town and factory employment – with single women being employed in large proportions servant and factory workers ('ouvrières') and hat-makers in a town factory.

[99] The 1856 figure would have been due to the under-recording of married women's occupations overall as explained earlier.

*Table 3.3: Top female occupations across time according to marital status, cantons of Bréauté and Nogent*

| | Year | Top occupations, single women | Top occupations, married women | Top occupations, widowed women |
|---|---|---|---|---|
| **Bréauté** | **1792** | fileuse/spinner (317)<br>domestique/servant (81)<br>laboureuse/agricultural worker (62)<br>servante/servant (60)<br>32 different occs total | fileuse/spinner (489)<br>laboureuse/agricultural worker (68)<br>42 different occs total | fileuse/spinner (89)<br>laboureuse/agricultural worker (15)<br>servante/servant (3)<br>15 different occs total |
| | **1793** | fileuse/spinner (517)<br>domestique/servant (120)<br>servante/servant (51)<br>30 different occs total | fileuse/spinner (757)<br>laboureuse/agricultural worker (82)<br>couturière/seamstress (13)<br>28 different occs total | fileuse/spinner (149)<br>couturière/seamstress (4)<br>servante/servant (3)<br>16 different occs total |
| | **1856** | tisserande/weaver (204)<br>domestique/servant (118)<br>couturière/seamstress (53)<br>31 different occs total | tisserande/weaver (260)<br>cultivatrice/farmer (93)<br>journalière/day labourer (34)<br>27 different occs total | cultivatrice/farmer (45)<br>trameuse/carder (38)<br>tisserande/weaver (31)<br>journalière/day labourer (30)<br>26 different occs total |
| | **1881** | tisserande/weaver (216)<br>cultivatrice/farmer (144)<br>journalière/day labourer (109)<br>64 different occs total | tisserande/weaver (271)<br>cultivatrice/farmer (255)<br>journalière/day labourer (101)<br>74 different occs total | tisserande/weaver (36)<br>cultivatrice/farmer (18)<br>trameuse/carder (12)<br>journalière/day labourer (11)<br>12 different occs total |
| | **1901** | domestique/servant (97)<br>journalière/day labourer (65)<br>couturière/seamsterss (36)<br>ouvrière de fabrique/factory worker (34)<br>cultivatrice/farmer (32)<br>42 different occs total | cultivatrice/farmer (170)<br>journalière/day labourer (109)<br>tisserande/weaver (33)<br>37 different occs total | journalière/day labourer (41)<br>cultivatrice/farmer (22)<br>tisserande/weaver (14)<br>27 different occs total |

| | Year | Top occupations, single women | Top occupations, married women | Top occupations, widowed women |
|---|---|---|---|---|
| **Nogent** | **1796** | domestique/servant (146)<br>fileuse/spinner (107)<br>couturière/seamsterss (29)<br>40 different occs total | fileuse/spinner (100)<br>marchande/merchant (12)<br>couturière/seamsterss (7)<br>21 different occs total | propriétaire/landowner (14)<br>tricoteuse/knitter (8)<br>domestique/servant (6)<br>ouvrière/worker (6)<br>22 different occs total |
| | **1856** | domestique/servant (434)<br>journalière/day labourer (38)<br>ouvrière en robes/dressmaker (33)<br>ouvrière/factory worker (25)<br>54 different occs total | domestique/servant (11)<br>journalière/day labourer (10)<br>blanchisseuse/washer-woman (9)<br>regrattière/used clothes seller (8)<br>22 different occs total | journalière/day labourer (141)<br>fileuse/spinner (54)<br>domestique/servant (42)<br>46 different occs total |
| | **1896** | domestique/servant (352)<br>couturière/seamstress (97)<br>journalière/day labourer (60)<br>ouvrière/factory worker (55)<br>cultivatrice/farmer (50)<br>chapelière/hat maker (45)<br>90 different occs total | journalière/day labourer (306)<br>cultivatrice/farmer (149)<br>chapelière/hat maker (124)<br>70 different occs total | journalière/day labourer (87)<br>domestique/servant (36)<br>chapelière/hat maker (20)<br>couturière/seamstress (20)<br>37 different occs total |

*Source : see note 45 on page 15*
*Note: figures for 1796 only report results for the town of Nogent, as other communes did not record women's marital status. Occupations are given both in French as stated in the original sources, and with an English translation.*

A number of regressions were run on the data to further assess the impact of age, marital status, number of children, and average age of children on the likelihood of a woman having an occupation and on the type of occupation she would have had.[100] Selected results are shown in Tables 3.4-3.6.[101] None of the variables were statistically significant in either regression in Bréauté in 1792 and 1793 –results for Bréauté 1793 are shown as an example. In 1856, a woman being married was the only variable to be consistently statistically significant. The effect on the likelihood of a woman having an occupation was, however, too small to be considered of any real importance, and the effect on sectoral distributions most probably largely a statistical artefact due to the enumeration conventions used in 1856: though marital status was a statistically significant variable in the multinomial regression when including women without an occupation, the effect disappeared entirely when restricting the regression to women with an occupation (see Table 3.6).

[100] A logistic regression model and multinomial logistic regression model were chosen as the outcome variables were, respectively, binomial and categorical. Age, number of children and average age of children were treated as continuous variables and marital status as a categorical variable, with 'single' as the base category.

[101] The tables for Bréauté 1792 are not shown as none of the variables were statistically significant; the tables for Nogent 1856 are not shown as biases due to enumeration conventions could not be adjusted for and patterns in the regression appeared to be due to the enumeration conventions rather than to genuine statistical effects.

*Table 3.4: Stata output, regressions modelling demographic determinants of female labour force participation*

Panel A: Bréauté 1793

```
. logit Occ_demography Age i.Marital_status Number_children Average_age_children

Iteration 0:   log likelihood = -472.59437
Iteration 1:   log likelihood = -469.26228
Iteration 2:   log likelihood = -469.05029
Iteration 3:   log likelihood = -468.33631
Iteration 4:   log likelihood = -467.81737
Iteration 5:   log likelihood = -467.81705
Iteration 6:   log likelihood = -467.81705

Logistic regression                             Number of obs   =       1266
                                                LR chi2(5)      =       9.55
                                                Prob > chi2     =     0.0889
Log likelihood = -467.81705                     Pseudo R2       =     0.0101
```

| Occ_demography | Coef. | Std. Err. | z | P>\|z\| | [95% Conf. | Interval] |
|---|---|---|---|---|---|---|
| Age | -.0171873 | .0071632 | -2.40 | 0.016 | -.031227 | -.0031476 |
| Marital_status | | | | | | |
| married | .1167354 | .3636622 | 0.32 | 0.748 | -.5960294 | .8295003 |
| widowed | .4183825 | .417767 | 1.00 | 0.317 | -.4004258 | 1.237191 |
| Number_children | -.0017032 | .0601788 | -0.03 | 0.977 | -.1196516 | .1162451 |
| Average_age_children | .0166105 | .0105819 | 1.57 | 0.116 | -.0041296 | .0373506 |
| _cons | 2.475994 | .5180611 | 4.78 | 0.000 | 1.460613 | 3.491375 |

Note: 0 failures and 2 successes completely determined.

Panel B: Bréauté 1856

```
. logit Occ_demography Age i.Marital_status Number_children Average_age_children

Iteration 0:   log likelihood = -1141.3548
Iteration 1:   log likelihood = -1006.2959
Iteration 2:   log likelihood = -1005.5995
Iteration 3:   log likelihood = -1004.9543
Iteration 4:   log likelihood =   -1004.94
Iteration 5:   log likelihood =   -1004.94

Logistic regression                             Number of obs   =       1662
                                                LR chi2(5)      =     272.83
                                                Prob > chi2     =     0.0000
Log likelihood =   -1004.94                     Pseudo R2       =     0.1195
```

| Occ_demography | Coef. | Std. Err. | z | P>\|z\| | [95% Conf. | Interval] |
|---|---|---|---|---|---|---|
| Age | -.019298 | .0044544 | -4.33 | 0.000 | -.0280284 | -.0105675 |
| Marital_status | | | | | | |
| married | -2.816712 | .3338783 | -8.44 | 0.000 | -3.471101 | -2.162323 |
| widowed | -.5031543 | .3622099 | -1.39 | 0.165 | -1.213073 | .2067641 |
| Number_children | .0050996 | .0323485 | 0.16 | 0.875 | -.0583022 | .0685015 |
| Average_age_children | .0080117 | .0061449 | 1.30 | 0.192 | -.0040321 | .0200556 |
| _cons | 2.964567 | .4003707 | 7.40 | 0.000 | 2.179855 | 3.749279 |

Note: 0 failures and 1 success completely determined.

Panel C: Bréauté 1881

```
. logistic Occ_demography Age i.Marital_status Number_children Average_age_children

Logistic regression                             Number of obs   =       1431
                                                LR chi2(5)      =      16.88
                                                Prob > chi2     =     0.0047
Log likelihood = -711.50181                     Pseudo R2       =     0.0117
```

| Occ_demography | Odds Ratio | Std. Err. | z | P>\|z\| | [95% Conf. | Interval] |
|---|---|---|---|---|---|---|
| Age | .9804483 | .0051559 | -3.75 | 0.000 | .9703947 | .990606 |
| Marital_status | | | | | | |
| married | .8052922 | .1508334 | -1.16 | 0.248 | .5578547 | 1.162481 |
| widowed | 1.065618 | .3048729 | 0.22 | 0.824 | .6082374 | 1.866939 |
| Number_children | .9624605 | .0382307 | -0.96 | 0.335 | .8903722 | 1.040385 |
| Average_age_children | 1.01647 | .0077007 | 2.16 | 0.031 | 1.001489 | 1.031676 |
| _cons | 11.47602 | 4.062734 | 6.89 | 0.000 | 5.733894 | 22.96853 |

Panel D: Bréauté 1901

```
. logistic Occ_demography Age i.Marital_status Number_children Average_age_children

Logistic regression                             Number of obs   =       1273
                                                LR chi2(5)      =      70.71
                                                Prob > chi2     =     0.0000
Log likelihood = -846.08011                     Pseudo R2       =     0.0401
```

| Occ_demography | Odds Ratio | Std. Err. | z | P>\|z\| | [95% Conf. | Interval] |
|---|---|---|---|---|---|---|
| Age | .9690934 | .0045866 | -6.63 | 0.000 | .9601453 | .9781248 |
| Marital_status | | | | | | |
| married | .3927646 | .0856247 | -4.29 | 0.000 | .2561924 | .6021415 |
| widowed | 1.036372 | .2504906 | 0.15 | 0.882 | .6453285 | 1.664373 |
| Number_children | .9022793 | .0298495 | -3.11 | 0.002 | .8456317 | .9627217 |
| Average_age_children | 1.028951 | .0071403 | 4.11 | 0.000 | 1.015051 | 1.043041 |
| _cons | 8.033564 | 2.681971 | 6.24 | 0.000 | 4.175786 | 15.45533 |

Panel E: Nogent 1896

```
. logistic Occ_demography Age i.Marital_status Number_children Average_age_children

Logistic regression                             Number of obs   =       2975
                                                LR chi2(5)      =      63.20
                                                Prob > chi2     =     0.0000
Log likelihood = -1995.5818                     Pseudo R2       =     0.0156
```

| Occ_demography | Odds Ratio | Std. Err. | z | P>\|z\| | [95% Conf. | Interval] |
|---|---|---|---|---|---|---|
| Age | .9770611 | .0029434 | -7.70 | 0.000 | .9713092 | .9828471 |
| Marital_status | | | | | | |
| married | .6018879 | .0964487 | -3.17 | 0.002 | .4396591 | .8239772 |
| widowed | .9542604 | .1660614 | -0.27 | 0.788 | .6784845 | 1.342128 |
| Number_children | .9080653 | .0315378 | -2.78 | 0.005 | .8483094 | .9720306 |
| Average_age_children | 1.008202 | .0046962 | 1.75 | 0.079 | .9990395 | 1.017448 |
| _cons | 3.29122 | .7473342 | 5.25 | 0.000 | 2.108994 | 5.136158 |

*Table 3.5: Stata output, regressions modelling demographic determinants of female sectoral distribution*

Panel A: Bréauté 1793

```
. mlogit Sector_code_demography Age i.Marital_status Number_children Average_age_children, base(0)

Iteration 0:   log likelihood = -1077.7586
Iteration 1:   log likelihood = -1066.4503
Iteration 2:   log likelihood = -1063.5866
Iteration 3:   log likelihood = -1061.3868
Iteration 4:   log likelihood =  -1060.686
Iteration 5:   log likelihood =  -1060.622
Iteration 6:   log likelihood = -1060.6077
Iteration 7:   log likelihood = -1060.6042
Iteration 8:   log likelihood = -1060.6035
Iteration 9:   log likelihood = -1060.6033
Iteration 10:  log likelihood = -1060.6033
Iteration 11:  log likelihood = -1060.6033

Multinomial logistic regression                 Number of obs   =       1266
                                                LR chi2(25)     =      34.31
                                                Prob > chi2     =     0.1014
Log likelihood = -1060.6033                     Pseudo R2       =     0.0159
```

| Sector_code_demography | Coef. | Std. Err. | z | P>\|z\| | [95% Conf. | Interval] |
|---|---|---|---|---|---|---|
| **no_occupation** | (base outcome) | | | | | |
| **primary** | | | | | | |
| Age | -.0175491 | .0104412 | -1.68 | 0.093 | -.0380135 | .0029153 |
| Marital_status | | | | | | |
| married | .0750784 | .6237594 | 0.12 | 0.904 | -1.147468 | 1.297624 |
| widowed | .8971447 | .6723333 | 1.33 | 0.182 | -.4206044 | 2.214894 |
| Number_children | .1412816 | .0797104 | 1.77 | 0.076 | -.0149479 | .2975112 |
| Average_age_children | .0159898 | .0105407 | 1.52 | 0.129 | -.0046696 | .0366491 |
| _cons | -.1733445 | .8124426 | -0.21 | 0.831 | -1.765703 | 1.419014 |
| **secondary_excl__textiles** | | | | | | |
| Age | -.0275091 | .0201493 | -1.37 | 0.172 | -.0670011 | .0119829 |
| Marital_status | | | | | | |
| married | 14.32785 | 1156.672 | 0.01 | 0.990 | -2252.707 | 2281.363 |
| widowed | 15.03155 | 1156.672 | 0.01 | 0.990 | -2252.003 | 2282.067 |
| Number_children | -.0357932 | .1588692 | -0.23 | 0.822 | -.3471712 | .2755848 |
| Average_age_children | .0041323 | .0298471 | 0.14 | 0.890 | -.0543669 | .0626316 |
| _cons | -15.03476 | 1156.672 | -0.01 | 0.990 | -2282.07 | 2252.001 |
| **textiles** | | | | | | |
| Age | -.0155999 | .0072155 | -2.16 | 0.031 | -.0297419 | -.0014578 |
| Marital_status | | | | | | |
| married | .1538578 | .3681433 | 0.42 | 0.676 | -.5676898 | .8754055 |
| widowed | .3789737 | .4229209 | 0.90 | 0.370 | -.449936 | 1.207883 |
| Number_children | -.0082251 | .0607981 | -0.14 | 0.892 | -.1273872 | .1109369 |
| Average_age_children | .015539 | .0105369 | 1.47 | 0.140 | -.0051129 | .0361909 |
| _cons | 2.237511 | .5231082 | 4.28 | 0.000 | 1.212237 | 3.262784 |
| **tertiary** | | | | | | |
| Age | -.0411467 | .0186629 | -2.20 | 0.027 | -.0777254 | -.0045681 |
| Marital_status | | | | | | |
| married | -1.207722 | .7650156 | -1.58 | 0.114 | -2.707126 | .2916806 |
| widowed | -.0605905 | .8951972 | -0.07 | 0.946 | -1.815145 | 1.693964 |
| Number_children | -.1374838 | .1702886 | -0.81 | 0.419 | -.4712434 | .1962757 |
| Average_age_children | .0154167 | .0107 | 1.44 | 0.150 | -.0055549 | .0363882 |
| _cons | .8268992 | 1.117686 | 0.74 | 0.459 | -1.363725 | 3.017524 |
| **day_labourer** | | | | | | |
| Age | -.0168942 | .0301715 | -0.56 | 0.576 | -.0760292 | .0422408 |
| Marital_status | | | | | | |
| married | -.8532826 | 1.217369 | -0.70 | 0.483 | -3.239283 | 1.532718 |
| widowed | -14.77288 | 1152.642 | -0.01 | 0.990 | -2273.91 | 2244.365 |
| Number_children | -.0210029 | .251243 | -0.08 | 0.933 | -.5134301 | .4714242 |
| Average_age_children | .0144155 | .0251332 | 0.57 | 0.566 | -.0348447 | .0636756 |
| _cons | -1.513551 | 1.905009 | -0.79 | 0.427 | -5.2473 | 2.220198 |

Panel B: Bréauté 1856

```
. mlogit Sector_code_demography Age i.Marital_status Number_children Average_age_children, base(0)

Iteration 0:   log likelihood = -1986.9854
Iteration 1:   log likelihood = -1867.9631
Iteration 2:   log likelihood = -1828.7547
Iteration 3:   log likelihood = -1825.6885
Iteration 4:   log likelihood = -1825.4352
Iteration 5:   log likelihood = -1825.4344
Iteration 6:   log likelihood = -1825.4344

Multinomial logistic regression                 Number of obs   =       1662
                                                LR chi2(25)     =     323.10
                                                Prob > chi2     =     0.0000
Log likelihood = -1825.4344                     Pseudo R2       =     0.0813
```

| Sector_code_demography | Coef. | Std. Err. | z | P>\|z\| | [95% Conf. | Interval] |
|---|---|---|---|---|---|---|
| **no_occupation** | (base outcome) | | | | | |
| **primary** | | | | | | |
| Age | .0000237 | .0073511 | 0.00 | 0.997 | -.0143841 | .0144315 |
| Marital_status | | | | | | |
| married | -1.887652 | .5042971 | -3.74 | 0.000 | -2.876057 | -.8992484 |
| widowed | .2705359 | .5300943 | 0.51 | 0.610 | -.7684299 | 1.309502 |
| Number_children | .0718646 | .0532784 | 1.35 | 0.177 | -.0325592 | .1762884 |
| Average_age_children | .0078726 | .0062669 | 1.26 | 0.209 | -.0044103 | .0201555 |
| _cons | -.526972 | .6325059 | -0.83 | 0.405 | -1.766661 | .7127167 |
| **secondary_excl__textiles** | | | | | | |
| Age | -.0380386 | .0141601 | -2.69 | 0.007 | -.0657919 | -.0102854 |
| Marital_status | | | | | | |
| married | -2.479834 | .7050344 | -3.52 | 0.000 | -3.861676 | -1.097992 |
| widowed | -1.133372 | .9061217 | -1.25 | 0.211 | -2.909338 | .642594 |
| Number_children | -.0371293 | .1068252 | -0.35 | 0.728 | -.2465029 | .1722442 |
| Average_age_children | .007392 | .0092822 | 0.80 | 0.426 | -.0108008 | .0255847 |
| _cons | .6152723 | .9368078 | 0.66 | 0.511 | -1.220837 | 2.451382 |
| **textiles** | | | | | | |
| Age | -.0223798 | .0050032 | -4.47 | 0.000 | -.0321859 | -.0125737 |
| Marital_status | | | | | | |
| married | -2.779498 | .3502342 | -7.94 | 0.000 | -3.465944 | -2.093052 |
| widowed | -.562687 | .3807853 | -1.48 | 0.139 | -1.309013 | .1836385 |
| Number_children | -.0053958 | .0371152 | -0.15 | 0.884 | -.0781404 | .0673487 |
| Average_age_children | .0083579 | .0062006 | 1.35 | 0.178 | -.0037949 | .0205108 |
| _cons | 2.611976 | .428643 | 6.09 | 0.000 | 1.771851 | 3.452101 |
| **tertiary** | | | | | | |
| Age | -.0267974 | .0131189 | -2.04 | 0.041 | -.05251 | -.0010847 |
| Marital_status | | | | | | |
| married | -4.163394 | .5301794 | -7.85 | 0.000 | -5.202527 | -3.124261 |
| widowed | -1.162974 | .5645902 | -2.06 | 0.039 | -2.26955 | -.0563971 |
| Number_children | -.0966595 | .1413673 | -0.68 | 0.494 | -.3737344 | .1804154 |
| Average_age_children | .0049268 | .0182997 | 0.27 | 0.788 | -.03094 | .0407936 |
| _cons | 1.421783 | .7928605 | 1.79 | 0.073 | -.1321946 | 2.975762 |
| **day_labourer** | | | | | | |
| Age | -.0295883 | .0098863 | -2.99 | 0.003 | -.048965 | -.0102116 |
| Marital_status | | | | | | |
| married | -3.582522 | .474088 | -7.56 | 0.000 | -4.511718 | -2.653327 |
| widowed | -.447202 | .5005532 | -0.89 | 0.372 | -1.428268 | .5338644 |
| Number_children | -.0065878 | .0828196 | -0.08 | 0.937 | -.1689113 | .1557358 |
| Average_age_children | .0073869 | .0066524 | 1.11 | 0.267 | -.0056516 | .0204255 |
| _cons | 1.584648 | .6551446 | 2.42 | 0.016 | .3005878 | 2.868707 |

Panel B: Bréauté 1881

```
. mlogit Sector_code_demography Age i.Marital_status Number_children Average_age_children, base(0) rrr

Iteration 0:   log likelihood = -2307.6525
Iteration 1:   log likelihood = -2254.9626
Iteration 2:   log likelihood = -2253.8562
Iteration 3:   log likelihood = -2253.8509
Iteration 4:   log likelihood = -2253.8509

Multinomial logistic regression                 Number of obs   =       1431
                                                LR chi2(25)     =     107.60
                                                Prob > chi2     =     0.0000
Log likelihood = -2253.8509                     Pseudo R2       =     0.0233
```

| Sector_code_demography | RRR | Std. Err. | z | P>\|z\| | [95% Conf. | Interval] |
|---|---|---|---|---|---|---|
| **no_occupation** | (base outcome) | | | | | |
| **primary** | | | | | | |
| Age | .9906411 | .0060824 | -1.53 | 0.126 | .9787912 | 1.002634 |
| Marital_status | | | | | | |
| married | 1.997991 | .4861571 | 2.84 | 0.004 | 1.240157 | 3.218921 |
| widowed | 1.150344 | .4369988 | 0.37 | 0.712 | .546347 | 2.42207 |
| Number_children | .9734772 | .0434657 | -0.60 | 0.547 | .8919074 | 1.062507 |
| Average_age_children | 1.020723 | .0087712 | 2.39 | 0.017 | 1.003676 | 1.03806 |
| _cons | .8607033 | .3644582 | -0.35 | 0.723 | .3753346 | 1.973732 |
| **secondary_excl__textiles** | | | | | | |
| Age | .9605463 | .0104332 | -3.71 | 0.000 | .9403138 | .9812142 |
| Marital_status | | | | | | |
| married | 1.442014 | .6355418 | 0.83 | 0.406 | .6078795 | 3.420749 |
| widowed | .8167897 | .6864369 | -0.24 | 0.810 | .1573089 | 4.240989 |
| Number_children | .934332 | .0697918 | -0.91 | 0.363 | .8070846 | 1.081642 |
| Average_age_children | 1.016877 | .0178266 | 0.95 | 0.340 | .9825311 | 1.052424 |
| _cons | 1.035152 | .7172346 | 0.05 | 0.960 | .2662103 | 4.025162 |
| **textiles** | | | | | | |
| Age | .9778816 | .0057485 | -3.80 | 0.000 | .9666795 | .9892135 |
| Marital_status | | | | | | |
| married | .5881012 | .1192804 | -2.62 | 0.009 | .3951927 | .8751757 |
| widowed | 1.340129 | .3981876 | 0.99 | 0.324 | .7485693 | 2.399169 |
| Number_children | .9331001 | .0424488 | -1.52 | 0.128 | .8535032 | 1.02012 |
| Average_age_children | 1.014336 | .0084702 | 1.70 | 0.088 | .9978696 | 1.031074 |
| _cons | 5.241773 | 2.020815 | 4.30 | 0.000 | 2.462192 | 11.15924 |
| **tertiary** | | | | | | |
| Age | .9776188 | .0086059 | -2.57 | 0.010 | .9608962 | .9946325 |
| Marital_status | | | | | | |
| married | .578319 | .1710327 | -1.85 | 0.064 | .3239159 | 1.03253 |
| widowed | .8967708 | .4098316 | -0.24 | 0.812 | .3661638 | 2.196279 |
| Number_children | .8093212 | .0673621 | -2.54 | 0.011 | .6875005 | .9527278 |
| Average_age_children | 1.009474 | .013343 | 0.71 | 0.476 | .9836578 | 1.035967 |
| _cons | 1.726628 | .9807534 | 0.96 | 0.336 | .5671557 | 5.256485 |
| **day_labourer** | | | | | | |
| Age | .9833197 | .0082097 | -2.01 | 0.044 | .9673598 | .9995429 |
| Marital_status | | | | | | |
| married | .4249245 | .1123558 | -3.24 | 0.001 | .253071 | .7134788 |
| widowed | .4701166 | .22452 | -1.58 | 0.114 | .184368 | 1.198741 |
| Number_children | 1.069264 | .0603467 | 1.19 | 0.235 | .9572938 | 1.194331 |
| Average_age_children | 1.015963 | .0115758 | 1.39 | 0.165 | .9935267 | 1.038907 |
| _cons | 1.336151 | .6996915 | 0.55 | 0.580 | .4787555 | 3.729043 |

## Panel D: Bréauté 1901

```
. mlogit Sector_code_demography Age i.Marital_status Number_children Average_age_children, base(0) rrr

Iteration 0:   log likelihood =   -1773.91
Iteration 1:   log likelihood = -1697.7144
Iteration 2:   log likelihood = -1691.8455
Iteration 3:   log likelihood = -1691.8121
Iteration 4:   log likelihood = -1691.8121

Multinomial logistic regression                 Number of obs   =       1273
                                                LR chi2(25)     =     164.20
                                                Prob > chi2     =     0.0000
Log likelihood = -1691.8121                     Pseudo R2       =     0.0463
```

| Sector_code_demography | RRR | Std. Err. | z | P>\|z\| | [95% Conf. | Interval] |
|---|---|---|---|---|---|---|
| **no_occupation** | (base outcome) | | | | | |
| **primary** | | | | | | |
| Age | .9768599 | .0064021 | -3.57 | 0.000 | .9643924 | .9894887 |
| Marital_status | | | | | | |
| married | .8937881 | .3044458 | -0.33 | 0.742 | .458453 | 1.742506 |
| widowed | 1.266707 | .4781214 | 0.63 | 0.531 | .6044886 | 2.654386 |
| Number_children | .9378477 | .0403148 | -1.49 | 0.136 | .8620692 | 1.020287 |
| Average_age_children | 1.038297 | .009271 | 4.21 | 0.000 | 1.020285 | 1.056628 |
| _cons | .9341762 | .4556423 | -0.14 | 0.889 | .3591346 | 2.429967 |
| **secondary_excl__textiles** | | | | | | |
| Age | .9245849 | .0131614 | -5.51 | 0.000 | .8991455 | .9507439 |
| Marital_status | | | | | | |
| married | .1626705 | .0815507 | -3.62 | 0.000 | .0608949 | .434547 |
| widowed | .9957166 | .5663858 | -0.01 | 0.994 | .3265528 | 3.036114 |
| Number_children | .7106 | .0891324 | -2.72 | 0.006 | .555721 | .9086436 |
| Average_age_children | 1.038617 | .0225235 | 1.75 | 0.081 | .9953971 | 1.083714 |
| _cons | 10.44067 | 8.286808 | 2.96 | 0.003 | 2.203564 | 49.46876 |
| **textiles** | | | | | | |
| Age | .9830162 | .0092276 | -1.82 | 0.068 | .9650957 | 1.001269 |
| Marital_status | | | | | | |
| married | .59382 | .2564011 | -1.21 | 0.227 | .2547539 | 1.384168 |
| widowed | 1.368747 | .6287853 | 0.68 | 0.494 | .5562776 | 3.367864 |
| Number_children | .7502701 | .0760107 | -2.84 | 0.005 | .6151506 | .9150691 |
| Average_age_children | 1.00392 | .0158059 | 0.25 | 0.804 | .9734137 | 1.035382 |
| _cons | .5420405 | .3652788 | -0.91 | 0.363 | .1446807 | 2.030733 |
| **tertiary** | | | | | | |
| Age | .9475803 | .0088189 | -5.79 | 0.000 | .9304522 | .9650237 |
| Marital_status | | | | | | |
| married | .1549068 | .0534909 | -5.40 | 0.000 | .0787303 | .304789 |
| widowed | .8154095 | .3022179 | -0.55 | 0.582 | .3943594 | 1.686007 |
| Number_children | .6821514 | .0651574 | -4.00 | 0.000 | .565687 | .8225937 |
| Average_age_children | 1.044051 | .0134213 | 3.35 | 0.001 | 1.018075 | 1.070691 |
| _cons | 8.611327 | 4.932817 | 3.76 | 0.000 | 2.802059 | 26.46445 |
| **day_labourer** | | | | | | |
| Age | .9680224 | .0072166 | -4.36 | 0.000 | .9539809 | .9822705 |
| Marital_status | | | | | | |
| married | .2931307 | .0911175 | -3.95 | 0.000 | .1593938 | .5390774 |
| widowed | 1.059711 | .3573814 | 0.17 | 0.863 | .5471726 | 2.052344 |
| Number_children | 1.014221 | .0462186 | 0.31 | 0.757 | .9275615 | 1.108976 |
| Average_age_children | 1.025898 | .0105338 | 2.49 | 0.013 | 1.005458 | 1.046753 |
| _cons | 2.351461 | 1.162011 | 1.73 | 0.084 | .8926957 | 6.194013 |

## Panel E: Nogent 1896

```
. mlogit Sector_code_demography Age i.Marital_status Number_children Average_age_children, base(0) rrr

Iteration 0:   log likelihood = -3701.9493
Iteration 1:   log likelihood = -3588.3235
Iteration 2:   log likelihood = -3582.4076
Iteration 3:   log likelihood = -3582.3833
Iteration 4:   log likelihood = -3582.3833

Multinomial logistic regression                 Number of obs   =       2975
                                                LR chi2(20)     =     239.13
                                                Prob > chi2     =     0.0000
Log likelihood = -3582.3833                     Pseudo R2       =     0.0323
```

| Sector_code_demography | RRR | Std. Err. | z | P>\|z\| | [95% Conf. | Interval] |
|---|---|---|---|---|---|---|
| **no_occupation** | (base outcome) | | | | | |
| **primary** | | | | | | |
| Age | .9974697 | .006636 | -0.38 | 0.703 | .9845479 | 1.010561 |
| Marital_status | | | | | | |
| married | 2.039445 | .979955 | 1.48 | 0.138 | .7952595 | 5.230161 |
| widowed | .9754744 | .5252517 | -0.05 | 0.963 | .3395313 | 2.80254 |
| Number_children | 1.160336 | .0684804 | 2.52 | 0.012 | 1.033588 | 1.302626 |
| Average_age_children | 1.016721 | .0094021 | 1.79 | 0.073 | .9984592 | 1.035317 |
| _cons | .0487277 | .0294261 | -5.00 | 0.000 | .0149191 | .1591502 |
| **secondary_excl__textiles** | | | | | | |
| Age | .9440982 | .0046238 | -11.75 | 0.000 | .9350791 | .9532043 |
| Marital_status | | | | | | |
| married | .4676621 | .1172404 | -3.03 | 0.002 | .286115 | .7644055 |
| widowed | 1.148754 | .314519 | 0.51 | 0.613 | .6716996 | 1.96462 |
| Number_children | .7502561 | .0438845 | -4.91 | 0.000 | .6689913 | .8413926 |
| Average_age_children | 1.017299 | .0081166 | 2.15 | 0.032 | 1.001515 | 1.033332 |
| _cons | 5.904942 | 2.005894 | 5.23 | 0.000 | 3.034342 | 11.49123 |
| **tertiary** | | | | | | |
| Age | .9759011 | .0055241 | -4.31 | 0.000 | .9651339 | .9867884 |
| Marital_status | | | | | | |
| married | .3832661 | .1021582 | -3.60 | 0.000 | .2273085 | .6462271 |
| widowed | .9328691 | .2631208 | -0.25 | 0.805 | .5367039 | 1.621462 |
| Number_children | .9785921 | .0624739 | -0.34 | 0.735 | .8634963 | 1.109029 |
| Average_age_children | .9974973 | .0090844 | -0.28 | 0.783 | .9798502 | 1.015462 |
| _cons | .9057538 | .3586502 | -0.25 | 0.803 | .4168319 | 1.968155 |
| **day_labourer** | | | | | | |
| Age | .9975716 | .0043266 | -0.56 | 0.575 | .9891276 | 1.006088 |
| Marital_status | | | | | | |
| married | .6809316 | .1461899 | -1.79 | 0.073 | .4470522 | 1.037167 |
| widowed | .8882908 | .205699 | -0.51 | 0.609 | .5642152 | 1.39851 |
| Number_children | .9048911 | .0491288 | -1.84 | 0.066 | .8135466 | 1.006492 |
| Average_age_children | 1.006971 | .0063651 | 1.10 | 0.272 | .9945725 | 1.019524 |
| _cons | .4006304 | .1300051 | -2.82 | 0.005 | .2120938 | .756763 |

*Table 3.6: Stata output, regressions modelling demographic determinants of female sectoral distribution once sample is restricted to women with an occupation*

Panel A: Bréauté 1856

```
. mlogit Sector_code_demography Age i.Marital_status Number_children Average_age_children if Sector_co
> de_demography != 0, base(1) rrr

Iteration 0:   log likelihood = -845.63051
Iteration 1:   log likelihood = -823.42914
Iteration 2:   log likelihood = -820.41448
Iteration 3:   log likelihood = -820.38641
Iteration 4:   log likelihood = -820.37117
Iteration 5:   log likelihood = -820.37093
Iteration 6:   log likelihood = -820.37093

Multinomial logistic regression                 Number of obs   =        737
                                                LR chi2(20)     =      50.52
                                                Prob > chi2     =     0.0002
Log likelihood = -820.37093                     Pseudo R2       =     0.0299
```

| Sector_code_demography | RRR | Std. Err. | z | P>\|z\| | [95% Conf. | Interval] |
|---|---|---|---|---|---|---|
| **primary** | (base outcome) | | | | | |
| **secondary_excl__textiles** | | | | | | |
| Age | .9608252 | .0147796 | -2.60 | 0.009 | .9322901 | .9902337 |
| Marital_status | | | | | | |
| married | .5622401 | .4200259 | -0.77 | 0.441 | .1300244 | 2.431189 |
| widowed | .2442303 | .2288419 | -1.50 | 0.132 | .0389252 | 1.532388 |
| Number_children | .9025864 | .1040571 | -0.89 | 0.374 | .7200386 | 1.131415 |
| Average_age_children | .9993279 | .008846 | -0.08 | 0.939 | .9821396 | 1.016817 |
| _cons | 3.363335 | 3.400865 | 1.20 | 0.230 | .463522 | 24.4045 |
| **textiles** | | | | | | |
| Age | .9774017 | .0074355 | -3.00 | 0.003 | .9629365 | .9920842 |
| Marital_status | | | | | | |
| married | .4161804 | .1799595 | -2.03 | 0.043 | .1783265 | .9712867 |
| widowed | .4286671 | .1928615 | -1.88 | 0.060 | .1774828 | 1.035343 |
| Number_children | .925292 | .0523347 | -1.37 | 0.170 | .828199 | 1.033768 |
| Average_age_children | 1.000449 | .0013052 | 0.34 | 0.731 | .9978941 | 1.00301 |
| _cons | 23.50131 | 13.74216 | 5.40 | 0.000 | 7.470682 | 73.93053 |
| **tertiary** | | | | | | |
| Age | .974876 | .0137673 | -1.80 | 0.072 | .9482626 | 1.002236 |
| Marital_status | | | | | | |
| married | .1058185 | .0617665 | -3.85 | 0.000 | .0337065 | .3322078 |
| widowed | .2315965 | .1415665 | -2.39 | 0.017 | .0698914 | .767433 |
| Number_children | .8424252 | .1253924 | -1.15 | 0.249 | .6292637 | 1.127795 |
| Average_age_children | .9953999 | .0187854 | -0.24 | 0.807 | .9592537 | 1.032908 |
| _cons | 6.620326 | 5.818202 | 2.15 | 0.031 | 1.182524 | 37.0637 |
| **day_labourer** | | | | | | |
| Age | .9720369 | .0109923 | -2.51 | 0.012 | .9507294 | .993822 |
| Marital_status | | | | | | |
| married | .1915677 | .1024949 | -3.09 | 0.002 | .0671277 | .5466917 |
| widowed | .4697541 | .2599122 | -1.37 | 0.172 | .1588202 | 1.389426 |
| Number_children | .9186898 | .0854067 | -0.91 | 0.362 | .7656605 | 1.102304 |
| Average_age_children | .9994497 | .0031086 | -0.18 | 0.860 | .9933755 | 1.005561 |
| _cons | 7.753263 | 5.904567 | 2.69 | 0.007 | 1.742787 | 34.4925 |

Panel B: Bréauté 1881

```
. mlogit Sector_code_demography Age i.Marital_status Number_children Average_age_children if Sector_co
> de_demography != 0, base(1) rrr

Iteration 0:   log likelihood = -1523.0451
Iteration 1:   log likelihood = -1477.3638
Iteration 2:   log likelihood = -1476.4954
Iteration 3:   log likelihood = -1476.4919
Iteration 4:   log likelihood = -1476.4919

Multinomial logistic regression                 Number of obs   =       1091
                                                LR chi2(20)     =      93.11
                                                Prob > chi2     =     0.0000
Log likelihood = -1476.4919                     Pseudo R2       =     0.0306
```

| Sector_code_demography | RRR | Std. Err. | z | P>\|z\| | [95% Conf. | Interval] |
|---|---|---|---|---|---|---|
| **primary** | (base outcome) | | | | | |
| **secondary_excl__textiles** | | | | | | |
| Age | .9680295 | .0107085 | -2.94 | 0.003 | .9472671 | .989247 |
| Marital_status | | | | | | |
| married | .7500864 | .3373585 | -0.64 | 0.523 | .3106528 | 1.81112 |
| widowed | .6933273 | .5958875 | -0.43 | 0.670 | .1286364 | 3.736909 |
| Number_children | .9488787 | .0729411 | -0.68 | 0.495 | .8161653 | 1.103172 |
| Average_age_children | .9970623 | .0174605 | -0.17 | 0.867 | .963421 | 1.031878 |
| _cons | 1.271875 | .8868022 | 0.34 | 0.730 | .3243039 | 4.988114 |
| **textiles** | | | | | | |
| Age | .9887273 | .0060521 | -1.85 | 0.064 | .9769362 | 1.000661 |
| Marital_status | | | | | | |
| married | .303443 | .0689543 | -5.25 | 0.000 | .1943795 | .4737007 |
| widowed | 1.136607 | .3968353 | 0.37 | 0.714 | .5733524 | 2.253197 |
| Number_children | .9515685 | .0443274 | -1.07 | 0.287 | .8685365 | 1.042538 |
| Average_age_children | .991878 | .0081982 | -0.99 | 0.324 | .9759393 | 1.008077 |
| _cons | 5.673039 | 2.279827 | 4.32 | 0.000 | 2.580732 | 12.47063 |
| **tertiary** | | | | | | |
| Age | .9875994 | .0089106 | -1.38 | 0.167 | .9702885 | 1.005219 |
| Marital_status | | | | | | |
| married | .2901154 | .0902147 | -3.98 | 0.000 | .1577176 | .5336561 |
| widowed | .7623591 | .3763592 | -0.55 | 0.583 | .289695 | 2.006219 |
| Number_children | .8211332 | .0694155 | -2.33 | 0.020 | .6957549 | .9691053 |
| Average_age_children | .9875772 | .0130312 | -0.95 | 0.343 | .9623639 | 1.013451 |
| _cons | 1.993719 | 1.153976 | 1.19 | 0.233 | .6411857 | 6.199322 |
| **day_labourer** | | | | | | |
| Age | .9959663 | .0087333 | -0.46 | 0.645 | .9789956 | 1.013231 |
| Marital_status | | | | | | |
| married | .2222387 | .0625277 | -5.35 | 0.000 | .1280357 | .3857522 |
| widowed | .3978687 | .2032271 | -1.80 | 0.071 | .1462026 | 1.082741 |
| Number_children | 1.110091 | .067322 | 1.72 | 0.085 | .9856822 | 1.250201 |
| Average_age_children | .9915997 | .0114212 | -0.73 | 0.464 | .9694653 | 1.014239 |
| _cons | 1.294442 | .709919 | 0.47 | 0.638 | .4418277 | 3.792385 |

## Panel C: Bréauté 1901

```
. mlogit Sector_code_demography Age i.Marital_status Number_children Average_age_children if Sector_co
> de_demography != 0, base(1) rrr

Iteration 0:   log likelihood = -892.47691
Iteration 1:   log likelihood = -846.04692
Iteration 2:   log likelihood = -843.97356
Iteration 3:   log likelihood = -843.96103
Iteration 4:   log likelihood = -843.96103

Multinomial logistic regression                 Number of obs   =        612
                                                LR chi2(20)     =      97.03
                                                Prob > chi2     =     0.0000
Log likelihood = -843.96103                     Pseudo R2       =     0.0544
```

| Sector_code_demography | RRR | Std. Err. | z | P>\|z\| | [95% Conf. | Interval] |
|---|---|---|---|---|---|---|
| **primary** | (base outcome) | | | | | |
| **secondary_excl__textiles** | | | | | | |
| Age | .942796 | .0148785 | -3.73 | 0.000 | .9140811 | .9724129 |
| Marital_status | | | | | | |
| married | .2021848 | .112207 | -2.88 | 0.004 | .0681326 | .5999873 |
| widowed | .7600921 | .4777166 | -0.44 | 0.663 | .2217622 | 2.605223 |
| Number_children | .7239318 | .097705 | -2.39 | 0.017 | .5556685 | .9431472 |
| Average_age_children | 1.00144 | .0239369 | 0.06 | 0.952 | .9556064 | 1.049471 |
| _cons | 13.25695 | 11.79433 | 2.91 | 0.004 | 2.318215 | 75.81124 |
| **textiles** | | | | | | |
| Age | 1.008813 | .0114103 | 0.78 | 0.438 | .9866949 | 1.031426 |
| Marital_status | | | | | | |
| married | .6830098 | .3410293 | -0.76 | 0.445 | .2566959 | 1.817335 |
| widowed | 1.144308 | .6194267 | 0.25 | 0.803 | .3960753 | 3.306038 |
| Number_children | .7922715 | .0873149 | -2.11 | 0.035 | .6383583 | .9832944 |
| Average_age_children | .964018 | .0171845 | -2.06 | 0.040 | .9309186 | .9982943 |
| _cons | .5170829 | .4072248 | -0.84 | 0.402 | .1104594 | 2.420569 |
| **tertiary** | | | | | | |
| Age | .9702992 | .0107477 | -2.72 | 0.006 | .9494612 | .9915946 |
| Marital_status | | | | | | |
| married | .1884419 | .0789521 | -3.98 | 0.000 | .0828985 | .428359 |
| widowed | .6271878 | .2882348 | -1.02 | 0.310 | .2548082 | 1.543767 |
| Number_children | .6944203 | .0731692 | -3.46 | 0.001 | .5648505 | .8537118 |
| Average_age_children | 1.008572 | .0151721 | 0.57 | 0.570 | .9792698 | 1.038752 |
| _cons | 9.06718 | 6.252081 | 3.20 | 0.001 | 2.347169 | 35.02677 |
| **day_labourer** | | | | | | |
| Age | .993872 | .0092442 | -0.66 | 0.509 | .9759179 | 1.012156 |
| Marital_status | | | | | | |
| married | .3563322 | .1391327 | -2.64 | 0.008 | .1657665 | .7659727 |
| widowed | .8112154 | .349078 | -0.49 | 0.627 | .349021 | 1.885475 |
| Number_children | 1.082888 | .0640538 | 1.35 | 0.178 | .9643486 | 1.215998 |
| Average_age_children | .9859382 | .0122827 | -1.14 | 0.256 | .962156 | 1.010308 |
| _cons | 2.114171 | 1.304137 | 1.21 | 0.225 | .631062 | 7.082852 |

## Panel C: Nogent 1896

```
. mlogit Sector_code_demography Age i.Marital_status Number_children Average_age_children if Sector_co
> de_demography != 0, base(1) rrr

Iteration 0:   log likelihood = -1674.7675
Iteration 1:   log likelihood = -1587.1777
Iteration 2:   log likelihood = -1585.0706
Iteration 3:   log likelihood = -1585.0603
Iteration 4:   log likelihood = -1585.0603

Multinomial logistic regression                 Number of obs   =       1260
                                                LR chi2(15)     =     179.41
                                                Prob > chi2     =     0.0000
Log likelihood = -1585.0603                     Pseudo R2       =     0.0536
```

| Sector_code_demography | RRR | Std. Err. | z | P>\|z\| | [95% Conf. | Interval] |
|---|---|---|---|---|---|---|
| **primary** | (base outcome) | | | | | |
| **secondary_excl__textiles** | | | | | | |
| Age | .9479677 | .0078628 | -6.44 | 0.000 | .9326816 | .9635044 |
| Marital_status | | | | | | |
| married | .265051 | .1368329 | -2.57 | 0.010 | .0963598 | .7290599 |
| widowed | 1.184993 | .6897216 | 0.29 | 0.771 | .3786835 | 3.708131 |
| Number_children | .6917821 | .0533303 | -4.78 | 0.000 | .5947701 | .8046174 |
| Average_age_children | .9986546 | .012868 | -0.10 | 0.917 | .9737496 | 1.024196 |
| _cons | 94.04896 | 61.81394 | 6.91 | 0.000 | 25.93579 | 341.0425 |
| **tertiary** | | | | | | |
| Age | .9839498 | .0085615 | -1.86 | 0.063 | .9673119 | 1.000874 |
| Marital_status | | | | | | |
| married | .2039168 | .1059369 | -3.06 | 0.002 | .0736622 | .5644965 |
| widowed | .9079011 | .5297947 | -0.17 | 0.868 | .2892879 | 2.849357 |
| Number_children | .8737113 | .0691873 | -1.70 | 0.088 | .7481061 | 1.020405 |
| Average_age_children | .975987 | .0134282 | -1.77 | 0.077 | .9500199 | 1.002664 |
| _cons | 13.54125 | 9.229158 | 3.82 | 0.000 | 3.560534 | 51.49945 |
| **day_labourer** | | | | | | |
| Age | 1.006939 | .0079146 | 0.88 | 0.379 | .9915453 | 1.022571 |
| Marital_status | | | | | | |
| married | .3279225 | .1630463 | -2.24 | 0.025 | .1237501 | .8689544 |
| widowed | .8527004 | .4785492 | -0.28 | 0.776 | .2838497 | 2.56156 |
| Number_children | .8024842 | .0584995 | -3.02 | 0.003 | .6956417 | .9257365 |
| Average_age_children | .9889633 | .0115467 | -0.95 | 0.342 | .9665892 | 1.011855 |
| _cons | 6.012904 | 3.876557 | 2.78 | 0.005 | 1.699454 | 21.27449 |

The results for Bréauté 1881 and 1901 present different patterns. Marital status was not statistically significant to a woman having an occupation overall in 1881, although age had a small, statistically significant effect (odds ratio 0.98).[102] However, relative to having no occupation, being married significantly increased the probability of a woman working in the primary sector by as much as 100% (relative risk ratio 2); significantly decreased the probability of a woman working in textiles (RRR 0.59); and significantly decreased the probability of a woman working as a day labourer (RRR 0.42). Results restricted to women with an occupation were similar, with being married reducing the probability of a woman working in textiles, in the tertiary sector, and as a day-labourer relative to working in the primary sector by 70%, 71% and 78% respectively. By 1901, not simply marital status but age and a woman's number of children were statistically significant. Being married and having children significantly decreased the odds of a woman having an occupation by 61% and 10% respectively. Relative to having no occupation, being married significantly reduced the probability of women working in the secondary sector, textiles, tertiary sector and as day labourers by 84%, 41%, 85% and 71% respectively; having children reduced the probability of women working in the tertiary sector by 32%. Results restricted to women with an occupation showed that, relative to being employed in the primary sector, being married significantly reduced the probability of women working in the secondary sector, tertiary sector and as day labourers by 80%, 81% and 64% respectively.

Several conclusions can be drawn. First, the data suggest that when cottage-industry type employment was widely available in 1792 and 1793, a woman's age, marital status, and whether or not she had young children were not significant barriers to entry onto the labour market. However, as opportunities in cottage industry declined over the period, it would appear that being married and

[102] Because the nature of the data required choosing a logistic regression models over a linear regression model, coefficients reported in the tables represent the change in the log odds of outcomes and cannot be straightforwardly interpreted as representative of the magnitude of the association between variables. Odds ratios and relative risk ratios (RRR) are both transformations of logistic coefficients that allow them to be interpreted more straightforwardly. Odds ratios are used throughout for binomial logistic regressions as they represent the ratio between the probability of 'success' as defined by the regression model and the probability of 'failure'. Relative risk ratios are used throughout for multinomial logistic regressions as they represent the probability of success of the treated group divided by the probability of success of the control group.

having children began to push women into the primary sector, and eventually out of having an occupation altogether. This is entirely consistent with the hypothesis we will develop in Chapter IV.2 that the patterns found in Bréauté show a fall in female LFPR provoked by the demise of textile employment being dampened by widespread land ownership as some women were able to return to the family farm for employment. The data also appears to suggest that patterns of female employment did not alter significantly as a woman's children aged. This could suggest a number of things: having children rarely appears as statistically significant and, when it does, this may in part be due to collinearity between a woman's marital status and number of children. Alternatively, it may suggest that older children could act as substitutes for a married woman's work.

The patterns in Nogent are once again more difficult to interpret than in Bréauté. Regressions could not be run on the 1796 data as it was not recorded by household. As with Bréauté, marital status appeared as a statistically significant factor in 1856, but the effect disappeared when the regression was restricted to women with an occupation such that it is difficult to assess to what extent the statistical significance was an artefact of the data. Patterns in 1896 closely resemble those observed in Bréauté in 1881 and 1901. Being married and having children significantly reduced the odds of a woman having an occupation by 40% and 9% respectively. Relative to having no occupation, being married significantly reduced the probability of a woman being employed in the secondary and tertiary sectors by 53% and 62% respectively.[103] When restricting the regression to women with an occupation, relative to being employed in the primary sector, being married significantly reduced the probability of a woman working in the tertiary sector by 80% - an effect probably largely due to the importance of domestic service as an employer of single women. Having children significantly reduced the probability of a woman working in the secondary sector by 31% - an effect that may have been due to the fact that secondary sector employment for women in 1896 Bréauté frequently involved working in factories within the town walls.

[103] Note that the textile sector was dropped from the model as the variable did not vary (in part due to small numbers given the near-disappearance of the textile industry at this date).

The Swedish-based Gender and Work project recently came to the conclusion that marital status and household position 'seemed much more important in structuring work patterns and determining access to income than was gender.'[104] The results obtained for Bréauté and Nogent indeed suggest that marital status was, if not more important than gender, a significant determinant of women's work patterns – though perhaps not in the way it might be expected, nor in the same way in different settings. What Ogilvie terms the 'technological approaches' to women's work – i.e. approaches that 'explain gender differences in labour market participation in terms of the interaction between the sexes' physical endowments and the surrounding technologies of production and reproduction' – tend to assume that marriage restricted women's employment opportunities by increasing their reproductive and familial responsibilities.[105] But marriage – or having children – do not appear to have become significant influences on women's work patterns until well into the nineteenth century in Bréauté. And although by the 1880s and 1890s it would appear that being married and having children restricted women's opportunities to enter the labour force, our analysis of the types of employments available to single and married women, combined with the increased probability that married women worked in the primary sector, suggests that, as in early modern Württemberg, marriage at times offered women *opportunities* for employment – though this trend is less obvious in Nogent.[106] Reasons for this will be discussed in the next chapter, where we formulate a hypothesis as to the impact of landholding patterns on patterns of women's work analysed so far.

## IV.2 Across regions: the differentiated impacts of mechanization

Since Marx and Engels wrote about the transforming power of machinery, numerous historians of women's work have sought to place such 'transforming power' within its social context, emphasizing that the impact of mechanization was neither uniform nor operated outside the constraints

[104] Maria Ågren, *Making a Living, Making a Difference: Gender and Work in Early Modern European Society* (Oxford University Press, 2017), 212, http://www.oxfordscholarship.com/view/10.1093/acprof:oso/9780190240615.001.0001/acprof-9780190240615.
[105] Ogilvie, 'Women and Labour Markets in Early Modern Germany', 26.
[106] Ogilvie, *A Bitter Living: Women, Markets, and Social Capital in Early Modern Germany*, 279.

of gender. Scott remarked that 'for women mechanization has confirmed rather than altered their economic and social valuation' – a conclusion repeated by Perrot the next year when she argued that 'mechanisation… at times recomposes work, requalifies it and masculinizes it (spinning); at times fragments it and feminises it (weaving). Women's place is not determined by technique, but by questions of status...'[107] In a recent study of female factory workers in Nantes in the eighteenth and nineteenth centuries, Samuel Guicheteau used communications between workers and management to highlight the extent to which women's place within factories was shaped by confrontation with male labour.[108]

The cantons of Bréauté and Nogent present two apt examples of the above. The two cantons presented different chronologies of mechanization. By 1823, there were already 121 spinning mills in the department of the Seine-Inférieure – although only 10 of those were on the small streams in the Pays de Caux. Mechanical weaving was introduced in 1830 but developed more slowly: by 1847, the department had 7,800 frames, rising to about 10,000 in 1855.[109] Most of these, however, were built along the Seine River: in the Caux, hand weaving survived well into the 1860s, such that, by the early 1870s, hand looms still outnumbered mechanical looms by 5 to 1. By this point, however, hand weavers were mostly producing coarse *rouenneries* for a restricted market.[110] By contrast, in the Perche, mechanized wool spinning did not make its appearance until the 1830s – and even then, of

[107] 'La mécanisation, on le voit, n'a pas d'effets univoques. Tantôt elle recompose le travail, le requalifie et le masculinise (filature) ; tantôt elle le découpe, le parcellise et le féminise (tissage). La place des femmes n'est pas réglée par la technique, mais par des questions de statut…' (own translation)
Joan Wallach Scott, 'The Mechanization of Women's Work', *Scientific American* 247, no. 3 (1982): 187; Michelle Perrot, 'Femmes et machines au XIXème siècle', *Romantisme* 13, no. 41 (1983): 5, 10, https://doi.org/10.3406/roman.1983.4651.

[108] Samuel Guicheteau, 'Ouvrières au travail, travaux de femmes. Nantes, XVIIIe-XIXe siècles', *Les Cahiers de Framespa. Nouveaux champs de l'histoire sociale*, no. 7 (19 April 2011): para. 17, https://doi.org/10.4000/framespa.603.

[109] Christine Le Bozec, *La Normandie au XVIIIe siècle: Croissance, Lumières et Révolution* (Rennes: Editions Ouest-France, 2002), 51; Pierre Dardel, *Commerce industrie et navigation à Rouen et au Havre au XVIIIe siècle* (Rouen: Société Libre d'Emulation de la Seine-Maritime, 1966), 128–29, 139; Sion, *Les paysans de la Normandie Orientale: Etude géographique*, 200; Chassagne, Serge, 'L'innovation technique dans l'industrie textile pendant la Révolution', *Histoire, économie et société* 12, no. 1 (1993): 51; Jean-Pierre Allinne, 'A propos des bris de machines textiles à Rouen pendant l'été 1789 : émeutes anciennes ou émeutes nouvelles ?', *Annales de Normandie* 31, no. 1 (1981): 37, https://doi.org/10.3406/annor.1981.5410; Fernand Evrard, 'Les ouvriers du textile dans la région rouennaise (1789-1802)', *Annales historiques de la Révolution française* 19, no. 108 (1947): 341–42, 350–51.

[110] Gay Gullickson, *The Spinners and Weavers of Auffay: Rural Industry and the Sexual Division of Labor in a French Village* (Cambridge: Cambridge University Press, 1986), 108, 124; Claude Fohlen, *L'industrie textile au temps du Second Empire* (Paris: Librairie Plon, 1956), 203.

four spinning mills in the canton, only one survived for a significant amount of time. As such, by 1830, although mechanized wool spinning represented 26% of spinning equipment and 19% of employment in the department, it only contributed 10% to overall value.[111] Most interestingly, the *effects* of mechanization on patterns of women's work in the two cantons also differed substantially. In 1792 and 1793 in Bréauté, we find 895 and 1423 spinners respectively, but no female weavers or 'siamoisières', for 647 male weavers in 1793. By 1856, we find 494 female weavers, a mere 22 spinners, and only 339 male weavers. By 1881, the number of female weavers had increased to 523, despite the population of the canton diminishing overall, the number of male weavers had fallen to 150. By 1901, there were only 95 female weavers and 27 male weavers left. Analysis of BMD registers was undertaken to establish the link between the mechanization of spinning and the changes observed in the gendered division of labour within the textile industry more firmly.[112] BMD registers for Bréauté show that the 'turn' began in the 1820s and had progressed significantly by 1835: out of 33 BMD register entries that recorded women's occupations in Bréauté in 1820, 23 of these women were spinners, and 3 were weavers. By 1835, out of 58 entries, only 10 were spinners – with 6 of these entries being death certificates for elderly widows – but as many as 17 were weavers. This suggests that the collapse of spinning as a female occupation was a consequence of the mechanization of spinning and its move from the household to the mill. The pattern observed is also identical to that found by Gullickson in Auffay.[113] The case of Nogent stands in sharp contrast. Whereas the canton had 623 spinners in 1796, by 1856 it had only 72. Again, the change appears associated to the mechanization of spinning. Out of 64 BMD register entries that recorded women's occupations in

[111] Cailly, *Mutations d'un espace proto-industriel: Le Perche aux XVIIIe-XIXe siècles*, 501, 504.

[112] Keith Sugden recently used an identical method in a 2017 paper where he analysed occupational data abstracted from parish records for Lancashire and Cheshire between 1777 and 1813 to show that the adoption of Crompton's mule in the regions in 1780 was associated with a rise in adult male spinning – and, relatedly, the displacement of female spinners.
Keith Sugden, 'An Occupational Study to Track the Rise of Adult Male Mule Spinning in Lancashire and Cheshire, 1777–1813', *Textile History* 48, no. 2 (3 July 2017): 167, 169, 172, https://doi.org/10.1080/00404969.2017.1367895.

[113] Gullickson found that no women were listed as weavers on either the marriage or tax records in Auffay between 1751 and 1786. But by 1808, three young married women were listed as weavers in the état civil, 15 in total between 1807 and 1817. Between 1818 and 1850, twice as many brides as grooms were weavers at the time of their marriage, and by 1851, there were three times as many female as male weavers in the village.
Gullickson, 'The Sexual Division of Labour in Cottage Industry and Agriculture in the Pays de Caux: Auffay, 1750-1850', 185; Gullickson, *The Spinners and Weavers of Auffay: Rural Industry and the Sexual Division of Labor in a French Village*, 104.

Nogent in 1820, 26 women were spinners. But by 1835, although there were now 106 entries that recorded women's occupations, the number of spinners remained stationary at 26. However, unlike in Bréauté, no female weavers made their appearance in the documents.

The differences do not stop there. The canton of Bréauté not only saw a significant reworking of the gendered division of labour within the textile industry that was entirely absent in Nogent, it also witnessed the mass entry of women into agricultural labouring when women had previously been entirely absent from that occupational category. Bréauté had virtually no female agricultural labourers in 1792 and 1793. By 1856, there were 88 female labourers for 409 male agricultural labourers. By 1881, the ratios had nearly equalized, with 221 female labourers for 235 male agricultural labourers. In 1901, there were 215 female labourers for 263 male agricultural labourers. Again, this is identical to the pattern observed by Gullickson in Auffay.[114] Nogent, however, had a relatively high female:male ratio for agricultural labourers as early as 1796, with 226 female labourers and 446 male agricultural labourers – though the ratios equalized further by 1896, when there were 446 female labourers for just 468 male agricultural labourers.

The reworking of the gendered divisions of labour in Bréauté no doubt played a role in diminishing the effects of the collapse of spinning as a source of female employment on the female LFPR – although the new employments could not entirely make up for the lost opportunities. But why were gendered divisions of labour different in Bréauté and Nogent to begin with, and why did they respond differently to mechanization? Why did a reworking of gendered divisions of labour in part offset – or delay – the effects of mechanization on female LFPR in Bréauté, but not in Nogent, or Westmorland for that matter?

[114] Whereas only 1 woman was listed as a day labourer in the 1796 census, 63 women were day labourers in 1851.
Gullickson, 'The Sexual Division of Labour in Cottage Industry and Agriculture in the Pays de Caux: Auffay, 1750-1850', 190–91.

Part of the answer is most probably related to the different forms and organizations that the textile industries took in Bréauté, Nogent, and Westmorland. After the 1760s, textile manufacture in the Rouen countryside was never dominated by a small number of town corporations, but the site of constant competition by a multiplicity of putting-out merchants and their intermediaries for the labour of rural men and women.[115] Further, the type of cloth produced, the 'siamoises' and 'rouenneries', were relatively cheap cloths destined for the general working population and the colonies.[116] By contrast, in the Perche, textile manufacture was heavily concentrated in the town of Nogent-le-Rotrou, where it was dominated by a few merchants. Production focused on 'étamines', a luxury cloth destined for national and international markets and associated with the commercial and religious nobility.[117] Although it was not uncommon for both a husband and wife to be involved in the production of textiles, in both the Caux and the Perche, the distribution and collection of materials and product was never the business of male weavers, as it was in England in areas such as Lancashire or Westmorland.[118] The production of low-quality cloth destined for popular consumption presumably required lower skills and was more open to the uptake of female workers into weaving than that of a luxury cloth destined to the nobility and international markets. The uptake of cheap female labour into weaving as an alternative or complement to male labour may also have been facilitated by the network of intermediaries involved in distribution and collection in the Caux – but prevented by the strong geographical concentration of weaving in the *ateliers* of a few specialized producers in the Perche, and by the domination of distribution by male weavers in Westmorland.

Part of the answer would also have to lie in the different ways in which the textile industries of the Caux and the Perche were affected by crises ranging from the subsistence crises of the late 1780s, to the French Revolution, to the cotton famine of the 1860s and the effects of the Anglo-French trade treaty of 1863. The textile industries in both Normandy and the Perche suffered from the economic

[115] Evrard, 'Les ouvriers du textile dans la région rouennaise (1789-1802)', 337, 339.
[116] Chassagne, *Le coton et ses patrons: France, 1760-1840*, 29.
[117] Cailly, 'L'industrie étaminière dans le Perche au XVIIIe siècle', 36; Claude Cailly, 'L'industrialisation du Perche au XVIIIe siècle : l'exemple de l'industrie étaminière', *Annales de Normandie* 35, no. 4 (1985): 298, https://doi.org/10.3406/annor.1985.1691.
[118] Evrard, 'Les ouvriers du textile dans la région rouennaise (1789-1802)', 337, 339; John Styles, 'Fashion, Textiles and the Origins of Industrial Revolution', *East Asian Journal of British History* 5 (2016): 20.

impacts of the French Revolution – but with different results. Despite a series of crises during the Revolution and Empire,[119] a combination of protectionism and a strong drive to mechanize spinning that had begun just before the Revolution and seemed little affected by it contributed to the maintenance of the Seine-Maritime as one of the main producers of cotton cloth in France: in 1812, the department could boast 98,231 spindles, and the largest concentration of water frames in the country.[120] The Perche, by contrast, emerged from the Revolution and First Empire with an irremediably damaged textile industry. The production of étamines had been under severe stress as early as 1787, and with the abolition of monastic orders and ecclesiastical robes in 1790 and 1792 (a major component of the demand for *étamines*), the suppression of convents in 1808, and the cutting-off of major export markets after 1793, the industry was never able to recover its pre-revolutionary levels.[121] As a result, while the Caux would have experienced growing demand for weavers during the later years of the Revolution and throughout the First Empire and Restoration, demand for textile workers in the Perche had significantly diminished: while the incentives for a reworking of the gendered division of labour in textiles existed in the Caux, they did not in the Perche. Indeed, by the time the textile industry in the Seine-Maritime too was experiencing more serious difficulties in the 1870s when the cotton famine of the 1860s and Anglo-French Treaty of 1863 revealed the sector's under-capitalisation, the textile industry entirely disappeared from the countryside and, decades after Nogent, no further possibilities for a reworking of the gendered division of labour in textiles were available to offset a collapse of female LFPR in Bréauté.[122]

[119] Allinne, 'A propos des bris de machines textiles à Rouen pendant l'été 1789', 40; Société Libre d'Emulation de la Seine-Maritime, *Le textile en Normandie: Etudes diverses*, 235; Jean Vidalenc, 'L'industrie dans les départements normands à la fin du Premier Empire', *Annales de Normandie* 7, no. 3 (1957): 302, 304, https://doi.org/10.3406/annor.1957.4358.
[120] Sion, *Les paysans de la Normandie Orientale: Etude géographique*, 302–4.
[121] Cailly, *Mutations d'un espace proto-industriel: Le Perche aux XVIIIe-XIXe siècles*, 297, 435, 438, 465.
[122] For a more detailed overview of different interpretations of the causes of the decline of the Seine-Maritime textile industry in the 1870s and 1880s, see: Alain Leménorel, 'Géographie et structures de l'industrie textile en Haute et Basse-Normandie au XIXe siècle', *Annales de Bretagne et des pays de l'Ouest* 97, no. 3 (1990): 359, 368; Fohlen, *L'industrie textile au temps du Second Empire*, 256, 266; Sion, *Les paysans de la Normandie Orientale: Etude géographique*, 319; Arthur Louis Dunham, *The Anglo-French Treaty of Commerce of 1860 and the Progress of the Industrial Revolution in France* (Ann Arbor: University of Michigan Press, 1930), 210.

However, even at their lowest point, female LFPR in Bréauté were on par with that observed in Nogent as early as 1796, at a time when the Nogentaise textile industry had still been employing large proportions of women. What other factors, then, may explain the differences observed between the two cantons? While there is no doubt that the trajectories of the textile sectors in both regions explained above hold significant explanatory power, the data presented in this dissertation suggest a third explanatory factor: landholding patterns. We saw earlier that the progressive diminution of textile work for women in Bréauté was associated with a progressive rise in the proportion of female day labourers working on the land. On top of this, it was also associated with a rise in the proportion of female farmers – or, more specifically, of farmers' wives working as farmers. While the combination of weaving and agricultural work was not sufficient to offset the fall in female LFPR caused by the disappearance of hand spinning entirely, the parallel timings of the trends of female employment in the textile sector and in agriculture suggest that returning to the land was a strategy pursued by women in Bréauté when they could not find alternative employment. The fact that the wives of farmers were always more likely to also be farmers than the wives of day labourers were to be labourers suggests that the large-scale ownership of land by households could have played a significant role in dampening the effects of falling opportunities for female employment on the labour market.

The pattern of land ownership in the Caux was dominated by the small-scale renting of farmland - but large farms above 40 hectares nonetheless occupied over 50% of the land.[123] The domination of large farms can be explained by the 'coutume du Caux', an inheritance regime unique to the region which specified that the house and all adjacent buildings, plantations, and gardens were to go to the eldest born in their entirety, along with two-thirds of the rest of the succession.[124] In Chapter III.1, we argued that these landholding patterns may have played a role in incentivising households and individuals to adopt cottage industry. But by the nineteenth century, the custom had been abolished, and the small-scale ownership of land most probably become more widespread

[123] Sion, *Les paysans de la Normandie Orientale: Etude géographique*, 65, 262–74.
[124] Sion, 274.

judging by the growing numbers of 'propriétaires cultivateurs.'[125] As a result, women who found themselves without employment may have been able to fall back upon agricultural employment on household land – as suggested by the falling independent:couple ratios and the growing number of farmers' wives working in agriculture over the period. This would not have been possible in Nogent: though the canton presented a pattern of fragmented landownership as early as the 1790s, the Percheron soil was known for its poor quality, and at any rate, with 70% of the canton's population living inside the town walls, it is likely that the majority of households did not own land. As a result, whether in 1796, when the textile industry was still employing women, or in 1856 and 1896, when it had nearly died out, women may have had more limited opportunities to find employment within the household than in Bréauté – which may in part explain the consistently lower female LFPR.

A more in-depth analysis of landholding patterns and their evolution in both cantons – using, for example, the Napoleonic cadastres and tax records on land – would be necessary to test this hypothesis fully. Similarly, the patterns say little about the *nature* of women's employment on household farms: it is plausible that these women were under-employed for much of the year, although not inevitable given the labour intensification of agriculture witnessed in the period and described further in the next chapter. Nonetheless, the fact that Shaw-Taylor and Buyst found similar patterns in Belgium provides encouraging confirmation. Although the mechanization of textile industries led to near-identical reductions in female employment in the sector in Belgium and Britain,[126] in Britain, this was accompanied by a decline in female LFPR of one-third, but in Belgium, 'there was no clear decline in female participation rate before the 1880s.' Shaw-Taylor and Buyst hypothesize that this was due to the high levels of land fragmentation and ownership in Belgium. Whilst agricultural employment was declining rapidly and masculinizing in England and Wales from the mid-eighteenth century onwards, in Belgium, 'there was no decline in agricultural employment between 1846 and

[125] 'Farmer landowners' who would have farmed the land they owned, distinguished from 'landowners' who would have owned lands but not necessarily worked on them.

[126] In Belgium, female employment in the textile industry declined from 31.4% of the labour force in 1846 to 9.8% in 1890. Shaw-Taylor and You had estimated that, in Britain, shares fell from 31.7% in c.1770 to 15% in 1841.
Leigh Shaw-Taylor and Eric Buyst, 'An Anglo-Belgian Comparison of Occupational Structures during Industrialization' (Unpublished, 2015), 9.

1880 and only very modest decline between 1880 and 1890 while agriculture feminised marginally' – such that agriculture absorbed the loss of employment for women in textiles .[127]

## IV.3 Across countries: the 'French path' to industrialisation

The data for Bréauté and Nogent also highlight the extent to which including comprehensive female occupational data in analyses is crucial to our understanding of the French economy in the late-eighteenth and nineteenth centuries. The data produced by Litvine, based on capitation tax records for the period 1695-1790, parish records for 1750-1819 collected by Louis Henry and Jean-Noël Biraben, revised estimates from Marchand and Thélot for 1811-1896, and adjusted total census returns afterwards, concludes that the secondary sector stagnated at around 17% of the male labour force in the eighteenth century and remained below 20% in the first third of the nineteenth century, before rising rapidly between 1841 and 1861. In Litvine's data, adding female data to male sectoral distributions in the nineteenth century makes little difference to sectoral distributions. Female data is unavailable for the eighteenth century, and suffers from low proportions of recording in Litvine's nineteenth-century sources.[128] The data for Bréauté and Nogent suggest very different patterns. Including female employment data significantly inflates the share of the secondary sector and textile sector in the late-eighteenth century, and even in the mid-nineteenth, by 10 to 15% (see Table 2.6). The effect is not so large in the case of Nogent-le-Rotrou – but it must be noted here that the Pays de Caux represents a more typical proto-industrial textile region than the Perche. Where Litvine's full data suggest a pattern of progressively diminishing – though persistently high – primary sector shares and progressively rising secondary sector shares accelerating only after the 1840s, the full data for Bréauté suggest that the secondary sector may have started at much higher levels in the eighteenth century. Of course, the data is not directly comparable: even when looking at male data alone, Bréauté presents far higher shares of men working in the secondary sector than Litvine's national estimates, and it is clear that Bréauté – and Nogent – being both proto-industrial textile cantons, cannot not be

[127] Shaw-Taylor and Buyst, 9, 17–18.
[128] Litvine, 'French Occupational Structure in the Long-Run, 1795-2010', 2–4, 32–34.

representative of the French economy as a whole. Nonetheless, given that, as we remarked when justifying the choice of proto-industrial cantons in the introduction, the textile sector spearheaded industrialisation and the move towards mechanisation in France, the data provide clear evidence of the significance of female occupational data.

As such, the data can provide insights into several aspects of the debate on the 'French path' to industrialisation. O'Brien and Keyder portrayed the 'French path' to industrialisation, with its characteristic persistence of large-scale land ownership, as 'a more humane and perhaps a no less efficient transition to industrial society' than the British.[129] However, the data presented in this dissertation makes clear, first, that an occupational approach inclusive of both male and female data reveals that primary sector shares of labour remained significantly higher than in Britain down to the twentieth century, more so even than previously thought; and second, that industrialisation may have led to a significant loss of welfare for many women and rural households if women were forced out of textile work and into under-employment in agriculture upon mechanization. Optimistic accounts of French economic development – whether those that suggest that France was not significantly lagging behind Britain once figures are brought back to per capita levels, or those that see in the 'French path' a socially preferable alternative to the British – are overstated at best, and at worst plainly wrong.

Nonetheless, the data also refute the idea that the French 'lag' was a result of agricultural retardation – and, in this, agrees with O'Brien and Keyder. As early as the late eighteenth century, Arthur Young had compared the French tenurial system unfavourably with the English. As Heywood succinctly summarized, 'numerous historians have since echoed Young's conclusions, arguing that the small family farms which continued to be of importance in nineteenth-century France retarded the process of industrialization.'[130] Agulhon, Desert and Specklin argued for instance that the 'agricultural revolution' of the eighteenth century had been nothing but a 'myth' in France, with social structures

[129] O'Brien and Keyder, *Economic Growth in Britain and France 1780-1914: Two Paths to the Twentieth Century*, 198.
[130] Colin Heywood, 'The Role of the Peasantry in French Industrialization, 1815-80', *Economic History Review* 34, no. 3 (1981): 359.

and agrarian techniques remaining quasi-constant.[131] But others disputed this interpretation in various ways. Crouzet argued that although a rise in agricultural productivity indeed appears to have been a necessary condition for industrialisation, it was not in itself a sufficient condition.[132] O'Brien and Keyder estimated that 'superior land endowment' (and not labour productivity) 'enjoyed by British farm workers explains somewhere between 58% and 71% of the differential in value added per worker in agriculture' in the nineteenth-century.[133] Others suggested that French industrialisation had lagged behind the British not because of an agricultural 'drag' on the labour force, but rather because of the absence of an 'industrial pull.' Grantham argued that 'the allocation of labour between agriculture and industry was constrained not by technology but by taste.'[134] Heywood argued that 'the persistence of a large subsistence sector well into the nineteenth century reflects above all a lack of outlets for commercialized production, and the limited capacity of the advanced sector to infiltrate "closed" regional economies.'[135]

The case of Bréauté strongly supports this latter hypothesis. Going back to Table 2.6, we notice that although as much as 67% of the total working population was employed in agriculture by 1901 – a figure that would be considered by the likes of Gerschenkron or Agulhon et al. as a sign of 'backwardness' or 'retardation' – in 1792 and 1793 only 42-45% of the labour force had been employed in the primary sector. Further, this dissertation has shown that the (re)growth of the primary sector was entirely concomitant with the progressive collapse of textile employment in the canton. While we are not currently in a position to assess the productivity of labour in agriculture in Bréauté in the period under study, these trends may well suggest that levels of agricultural productivity did not

[131] Maurice Agulhon, Gabriel Désert, and Robert Specklin, *Histoire de la France rurale: Apogée et crise de la civilisation paysanne de 1789 à 1914*, vol. 3 (Paris: Editions du Seuil, 1976), 7.
[132] François Crouzet and Jean-Pierre Poussou, *L'économie française du XVIIIe au XXe siècle: Perspectives nationales et internationales* (Paris: Presses de l'Université de Paris-Sorbonne, 2000), 351, 360.
[133] O'Brien and Keyder, *Economic Growth in Britain and France 1780-1914: Two Paths to the Twentieth Century*, 108.
[134] Although over 50% of the French labour force was reported to be working in agriculture by 1860, Grantham estimated that by that point, and most probably before then, 'the share of the population strictly required to sustain a minimum level of subsistence was probably at most 40%.
George Grantham, 'Division of Labour: Agricultural Productivity and Occupational Specialization in Pre-Industrial France', *Economic History Review* 46, no. 3 (1993): 487–88.
[135] Heywood, 'The Role of the Peasantry in French Industrialization, 1815-80', 372.

prevent the reallocation of labour from agriculture to industry *when attractive opportunities for employment in industry were available*.

No in-depth study of agricultural development in the Perche in the course of the nineteenth century appears to exist at present, while views on agricultural development in the Seine-Maritime differ. Some, such as Vidalenc and Leménorel, emphasize farmers' unwillingness to experiment with crops such as beetroots or potatoes, the persistence of three-yearly crop-rotations systems from the thirteenth century, and the late mechanisation of the sector in the 1890s and early 1900s.[136] But others such as Sion offer a much more positive view – noting that fallow fields had been entirely eliminated in the Caux by 1812 and an ameliorated version of the traditional crop-rotation system including new crops such as beetroots and potatoes universally adopted by 1836.[137] As such, it is plausible that the growth of the primary sector share of employment over the period represented the move towards more labour-intensive forms of agriculture. But the patterns of women's work we analysed in Chapter IV.2 in relation to landholding patterns also suggest that this growth was strongly tied to the collapse of proto-industrial and industrial employment in the region, and that significant proportions of women may have been left either unemployed or under-employed as a result, such that, even if agriculture were moving towards more labour-intensive forms of cultivation, it would not have acted as a 'drag' on industry – and had most definitely not done so in the 1790s.

As such, the case of Bréauté may suggest that a growth model along the lines of Arthur Lewis' economic growth with unlimited supplies of labour may be more appropriate to the debate on the 'French path' than neoclassical models – at least when women's work is taken into consideration. Where neoclassical economics assumes a limited supply of labour such that transfers between sectors necessarily require increases in productivity, Lewis' model accounts for the possibility that, in the early stages of economic development, the existence of a large 'subsistence' sector with negligible

[136] Jean Vidalenc, 'L'agriculture dans les départements normands à la fin du Premier Empire', *Annales de Normandie* 7, no. 2 (1957): 183–94, https://doi.org/10.3406/annor.1957.4347; Alain Leménorel, ed., *Nouvelle Histoire de la Normandie* (Toulouse: Editions Privat, 2004), 230.
[137] Sion, *Les paysans de la Normandie Orientale: Etude géographique*, 346–53, 372.

marginal product of labour made possible the transfer of labour to the 'capitalistic' sector of the economy without such increases.[138] This model may better take into account the existence of potentially unemployed or under-employed female labour in the French economy in the late eighteenth and nineteenth centuries, and help explain, first, why the large-scale uptake of cottage industry was possible prior to mechanization, and second, why the persistence of a large primary sector in the nineteenth century may not have acted as a drag on industry.

[138] For a detailed overview of the model, see: W. Arthur Lewis, 'Economic Development with Unlimited Supplies of Labour', *The Manchester School* 22, no. 2 (May 1954): 139–91, https://doi.org/10.1111/j.1467-9957.1954.tb00021.x; W. Arthur Lewis, 'Unlimited Labour: Further Notes', *The Manchester School* 26, no. 1 (1958): 1–32.

# V. Conclusion: the significance of female employment data

Until now, no full reconstruction of patterns of female employment over the period of industrialisation had been attempted for any region of France. This dissertation has shown that the sources required for this type of study are, in fact, widely available. In addition to the listings resulting from the 1791 Law on Municipal Police, the 1792 dénombrement, and the listings resulting from the 1795 decree – all of which were used for this dissertation – the French Revolution and Empire led to a flourishing of statistical enquiries perhaps unique in Europe for the time period. Other potential sources include the fiscal censuses of 1790 and the January 1791 decree on property, which required municipalities to establish a list of all inhabitants, their resources, their home and its value, occupation, marital status, number of children, and domestic servants; general industrial enquiries, enquiries on draperies and enquiries on the woollen industry in 1794 and 1795; an agricultural enquiry and enquiry on cotton manufactures in 1806; and a general enquiry on the textile industry in 1811.[139] Because they were designed to be carried out nationally, some of these sources will have survived – and may record female employment and/or provide related data – for cantons across the entirety of France, *and* for some of the territories annexed under the Napoleonic Empire. Indeed, following the annexation of Belgium, the revolutionary decree of September 1792 on the institution of secular and compulsory civil registrars was applied to all Belgian territories in June 1796, whilst the first complete and nominal population listing to be completed for Belgium, which included occupational data, was the result of the same 1795 decree which led to the 1795-6 population listing for Nogent used in this dissertation.[140]

[139] Bertrand Gille, *Les sources statistiques de l'histoire de France des enquêtes du XVIIe siècle à 1870* (Paris: Librairie Minard, 1964), 102–3; 113; 125–30; 132–33; 134; 136; Isabelle Guégan, *Inventaire des enquêtes administratives et statistiques, 1789-1795*, Ministère de l'Education Nationale, Commission d'Histoire de la Révolution Française, XLVI (Paris: Editions du C.T.H.S., 1991), 115; 125–30.
[140] Thierry Eggerickx and Jean-Paul Sanderson, *Histoire de la population de la Belgique et de ses territoires: Actes de la Chaire Quetelet 2005* (Presses univ. de Louvain, 2010), 40–41.

Not all of these sources will be equal in their recording of female occupational data – the cases of Bréauté and Nogent revealed that, even for those which did record female occupations, the quality of the data could vary significantly. Nevertheless, this dissertation has shown that, for some regions of France, a number of such sources *and* nineteenth-century censuses not restricted to the 1851 census as suggested by Grantham,[141] are well-suited to critical analysis and, once adjusted for biases, can allow for full reconstructions of patterns of both female and male employment across the period of industrialisation. To paraphrase Edward Higgs, it is only when population listings and censuses are understood as 'culturally mediated texts which need to be interpreted in the same manner as any other historical source' that they can provide valuable insights into the history of women's work in the period of industrialisation.[142] Once this is acknowledged, possibilities for further research appear substantial.

Of course, the various hypotheses presented in this dissertation are by no means definitive. Further work would be required to ascertain the representativeness of cantons such as Bréauté or Nogent. Moreover, further research would need to expand inquiry into determinants of patterns of female employment. Factory books, regional reports on industrial employment, and sources such as Le Play's household budgets could enable a more in-depth study of time-use and its evolution. Napoleonic cadastres, agricultural enquiries and contemporary information on soil type and quality would enable an in-depth assessment of the availability and distribution of arable land. This would allow a number of hypotheses put forward in this dissertation to be refined by establishing the evolution of landholding patterns and labour productivity in agriculture with more certainty. National industrial enquiries of 1839-47 and 1860-65 containing information on regional industries, the types of motors they employed, their gendered distribution of labour, and wages, combined with GIS data on transport and urbanization, could provide further insights into the incentives at work for the reworking of gendered divisions of labour in textiles in both cantons.

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[141] Grantham, 'Occupational, Marital, and Life-Cycle Determinants of Women's Labor Force Participation in Mid Nineteenth-Century Rural France', 99–100.
[142] Edward Higgs, *Making Sense of the Census Revisited: Census Records for England and Wales 1801-1901, a Handbook for Historical Researchers* (London: London Institute of Historical Research and National Archives of the UK, 2005), 154.

Nonetheless, even at this early stage, the data presented in this dissertation allow a number of conclusions to be drawn. The data add a further case study to a growing number of works that have emphasized the limits of proto-industrialisation theory and sought to redefine it, re-emphasizing, first, that proto-industrial activity and commercial agriculture could go hand-in-hand; second, the complementarity of town and country in determining the rise and form of cottage industry; and third, the extent to which chronologies of proto-industrialisation and industrialisation frequently overlapped. Further, it has suggested that the above features of proto-industrialisation are in part explained by specific patterns of sexual division of labour, which created large reserves of unemployed or under-employed women with the skills required by urban merchants at competitive prices, and for whom cottage-industry employment represented an attractive opportunity. Women's work, and gendered divisions of labour more broadly, are shown to be central determinants of the uptake, form, and survival of cottage industry.

The data has also shown that while demographic factors including a woman's marital status and number of children could play a significant role in determining patterns of female employment, these factors were not always as significant as assumed by 'technological' approaches to women's work, nor did they always operate in the direction assumed by these approaches. The data clearly showed that when opportunities for employment in cottage industries were high, being married and/or having children did not constitute significant barriers to entry onto the labour market for women; whilst being married at times appears to have offered women access to a *wider* variety of occupations. The data also provided further evidence that the impacts of mechanization on women's work are never uniform – and instead significantly influenced by the forms and organisations of given industries; by economic conjuncture and its varied impacts on different regions and industries; and, in the French case, by factors such as landholding patterns.

Most significantly perhaps, the dissertation has provided evidence that, as already established for England and Spain, including women in analyses of the economy results in a significantly more industrial pattern of employment before industrialisation.[143] Further, it has established the existence of a major reduction in the importance of women within the secondary sector over the course of industrialisation, and suggested that this was largely the result of the mechanisation of textile production – a pattern already established for England, Belgium, and Ireland.[144] This is likely to have resulted in major negative welfare implications for women. This dissertation has also hypothesized, however, that unlike in England, but as observed in Belgium, part of the negative impacts on women may have been dampened by the persistence of widespread ownership of land. The relative strength of this dampening is unknown at this stage: further research would be required to evaluate the extent to which women returning to agriculture on family-owned land were under-employed relative to previous employment in domestic production of textiles and/or to factory employment in textiles available only upon migration. At any rate, the case of Bréauté suggested that landholding patterns were never able to compensate *fully* for the decline in opportunities for cottage industry employment, and it is likely that women's capacity to earn monetary income was significantly reduced even in France. Nonetheless, significant differences with the English case remain.

Finally, by beginning to add comprehensive female occupational data to Litvine's reconstructions, the data has provided further confirmation of Litvine's conclusions. An occupational structure approach to economic growth reveals the persistence of a large primary sector well into the nineteenth century, larger even than in previous estimates even once female occupational data is included. Optimistic accounts of French industrialisation such as that put forward by O'Brien and Keyder do not hold, and the 'French path' to industrialisation appears clearly distinct from the British,

[143] Shaw-Taylor and You, 'Patterns of Female and Male Employment in England and Wales 1700-1911'; Terki-Mignot, 'Changing Patterns of Female Employment in Westmorland, 1787-1851'; Sarasúa, 'Women's Work and Structural Change: Occupational Structure in Eighteenth-Century Spain'.
[144] Shaw-Taylor and You, 'Patterns of Female and Male Employment in England and Wales 1700-1911'; Terki-Mignot, 'Changing Patterns of Female Employment in Westmorland, 1787-1851'; Shaw-Taylor and Buyst, 'An Anglo-Belgian Comparison of Occupational Structures during Industrialization'; Líam Kennedy et al., *Mapping the Great Irish Famine: A Survey of the Famine Decades* (Bodmin, Cornwall: Four Courts Press, 1999).

contra. Dormois' recent arguments to the contrary.[145] Nonetheless, the data also support Litvine's argument that the apparent 'lag' of French industrialisation was not due to the primary sector acting as a drag on the labour force. Indeed, the data has suggested that, when the secondary sector offered attractive employment opportunities, individuals and at times entire families were able to take advantage of them, and that the persistence of a large primary sector may instead mask significant under-employment and/or the choice to adopt more labour-intensive forms of agriculture in the absence of an industrial 'pull.'

Katrina Honeyman once perceptively remarked that 'some recent strands of economic history, especially that of quantification, have been distinctly inhospitable to women… the neo-classical frame of reference that informs the method of the so-called cliometricians has effectively submerged a gendered perspective.' This dissertation has aimed to show that data on female employment is crucial to our understanding of industrialisation and its mechanisms – and, fortunately, in the French case at least, can be retrieved.[146]

[145] O'Brien and Keyder, *Economic Growth in Britain and France 1780-1914: Two Paths to the Twentieth Century*; Dormois, *The French Economy in the Twentieth Century*, 112.
[146] Katrina Honeyman, *Women, Gender, and Industrialisation in England, 1700-1870*, British Studies (London: Macmillan, 2000), 9.

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