-Working paper-

Marriage Choices and Class Homogamy

Milan, 1890-1899 and 1950-1959

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Introduction

Marriage patterns are a key element in the social reproduction of inequalities because, through marriage, socio-economic resources are distributed among groups and households. Furthermore, the measure by which individuals from different groups marry each other can be considered as an indicator of the grade of openness of a society. Barriers within groups are preserved with homogamy, while they are weakened when heterogamous unions prevail (Kalmijn, 1998).

From a historical point of view, it is generally agreed that homogamy was stronger before industrialization. Such claim belongs to a historical and sociological school of thought denoted as modernization theory (Shorter, 1978; Goode, 1981), that has long dominated historical research in social and marital mobility. According to this theory, industrialization changed the way that personal preferences, third parties, and marriage market played in the partner choice (Kalmijn, 1998; Shorter 1978; Goode, 1981), leading to a decrease of homogamy and an increase of heterogamy across social groups.

Long-term trends in social homogamy have been investigated in the social history field, with the aim of testing different aspects of the modernization theory. However, results are not consistent with the validity of the modernization theory. Indeed, it was found that, in several European and even extra-European contexts, homogamy does not seem to decrease with industrialization (Van Leeuwen et al., 2005).

The aim of this paper is to introduce Italy in this debate, using the city of Milan as a case study. Indeed, Milan has been a forerunner in terms of social and economic development between 19th and 20th centuries in Italy. Exploiting newly collected data from the Civil Archive of Milan, changes in patterns of social homogamy during the industrialization period are analyzed.

1. Theoretical framework and literature review

Sociology is interested in assortative mating for two main reasons. First, partner choice and patterns of couple formation can reproduce – or alter – class structure, and, as a consequence, the maintenance of inequalities within and between generations (Schwartz, 2013). Second, rates of homogamy and heterogamy by groups can be considered as indicators of the openness of a society: with prevalent homogamy barriers are between groups are kept, while they are weakened if heterogamy starts prevailing.

In the literature on marriage and social class, one set of questions focuses on geographical and temporal variations in patterns of social homogamy. More specifically, they ask whether and to what extent the determinants of couple formation changed over time.

1.1. Determinants of social homogamy and their interaction with modernization

In the literature of marital mobility in a historical perspective, a theory that has long dominated historical research in marital and social mobility is that known as the modernization theory The general idea is that the economic and social development that Western societies experiences between the end of the 17th and the beginning of 20th centuries changed the meaning of marriage and the way in which couples were formed. Therefore, heterogamy should became more frequent than homogamy than before the industrialization.

Several theories on how the modernization influenced the way in which factors of partner choice played have been developed. The above cited elements are, as literature has highlighted, mainly three: individual preferences, third parties and the marriage market, that of course are interrelated with each other.

With regards to individual preferences, two aspects are worth of interest. First, there is the romantic-love hypothesis developed by Shorter (1978) states that membership of all kinds of social groups became less important in partner selection as modernization progressed. Indeed, the spread of education and the growing participation in the formal labor market made individuals more independent from their parents, thus making not necessary to find a partner that would please them. On the other hand, even parents became more independent from their children from an economic point of view, because of the development of the welfare state. Thus, it has been argued that a decreased intergenerational dependency between generations would decrease homogamy by social status towards choices based on individualistic values. Second, the modernization changed also the way in which ascribed and achieved individual characteristics played in partner choice. Indeed, in pre-industrial societies partner choice was mainly driven by the ascribed characteristics, such as social status. With industrialization processes and educational expansion individual's own characteristics – such as the educational attainment and the occupation – became more precise indicators of present and future success (Treiman, 1970).

With the term third parties, it is meant the influence played by the family, peers, communities and institutions in shaping partner choice. This can happen through socialization and the social control exerted by public institutions. As stated above, the interdependence between fathers and children weakened with modernization, as well as the control exerted by public institution such as the Church and, in some cases, the State.

Finally, even the composition of the marriage market changed during the modernization, contributing to changes in patterns of couple formation. First, the socio-demographic composition of the population changed considerably with the advent of the industrialization due to several reasons. First, economic development and innovation influenced the distribution of individuals across social classes and occupations, determining the sizes of social groups. Indeed, mating depends also on the size of social groups; as stated by the structuralist theory (Blau, Blum, & Schwartz, 1982), the narrower the pool of potential partners in a given group, the higher the chances to marry outside the group, favoring heterogamy. Thus, changes in the occupational structure and the relative size of occupational groups and classes as the result of industrialization may have fostered, just for structural reasons, shifts from prevalent homogamy towards heterogamy.

Moreover, when looking at marriage market, another important element to consider is that of «marriage horizon» (van Leeuwen et al., 2005). During industrialization, socio-economic processes at the macro-level contributed to expand individuals' horizon and, as a consequence, the chance to meet potential partners. First, the educational expansion that took place between the 18th and 19th centuries allowed individuals to be involved in more mixed environments than before. Second, the expansion of public transport decreased social isolation of groups and increased the distances that could be travelled, thus expanding the geographical marriage horizon. Third, the phenomenon of urbanization was an additional element in making cities more heterogeneous environments, where people from different social backgrounds had the opportunity to meet. Thus, it could be argued that the geographical expansion of the marriage market could have increased contacts between social classes, and so to lead to more heterogamy (van de Putte, 2003).

1.2. Developments in historical research on marriage patterns: a literature review

In the recent decades, research on historical patterns of couple formation has attempted to test different elements of the modernization theory. One of the earliest studies is that of Kocka (1984), that analyzed intergenerational and marital mobility in 5 cities of the German region of Westfalia between the end of the 17th and the beginning of 20th centuries. Results indicated that marital mobility worked as a better channel of social mobility rather than intergenerational mobility, especially for individuals belonging to lower classes. Opposite results have been found by van Bavel and co-authors (1998) in the city of Leuven (Belgium); rates of marital mobility are displayed as a consequence of the ongoing intergenerational mobility. The authors concluded that – in the context analyzed – industrialization had an effect in weakening the strength of the association between father and son's socioeconomic status, but it had none for marital mobility. Exploiting both quantitative and qualitative data van Leeuwen & Maas (2002) have studied trends in couple formation in the Swedish province of Sundsvall during the 19th century, with the aim to test Shorter's romantic-love hypothesis. without finding an empirical corroboration of the theory.

Even when analyzing other types of homogamy, results that emerged from research are not unanimous. For instance, for homogamy by geographical origin van de Putte (2003) analyzed trends in the Flemish cities of Leuven, Gent and Aalst for the period 1800-1913 by means of log-linear regression. The patterns that emerges is that of persistent barriers to marriage between natives and migrants in all the three cities analyzed. On the other hand, opposite results emerged from the study of Dribe and Lundh (2009) on five rural parishes during the 19th century exploiting the Scanian Demographic Database. In this context, homogamy by geographical origin decreased, whereas barriers by social class and age remained.

The only exception holds for age homogamy. In a study about age homogamy in the Netherlands (van Poppel et al., 2011) in the periods 1850-1910 and 1936-1993, log-linear analysis displays an increase in age homogamy, as suggested by the literature of modernization. The same conclusion has been reached by van de Putte and Matthijs (2001) in their analysis of patterns of age homogamy in Leuven starting from the 19th century; however, strong differences among social classes are highlighted.

As it emerges from the literature, results are quite contradictory between each other, that could suggest two reflections. On the first place, it must be acknowledged that the theory must be put in relation with the context under study, and therefore the theory could be adapted to the conditions in which is studied. Secondly, comparative research could help to shed light on these processes, and to better highlight eventual contextual differences. In this sense, historical research on social mobility has experimented the spread of a tool for comparative research. The development of HISCO – a occupational classification scheme – and HISCLASS as a social class schema (van Leeuwen et al., 2002; van Leeuwen & Maas, 2011) has favored the spread of studies that are comparable among each other. A systematic attempt to collect studies in a comparative fashion has been done by Leeuwen and coauthors (2005). Studies from European and extra-European contexts with similar characteristics – the use of marriage act, HISCO and HISCLASS and a similar time span – have been collected, showing similarities and differences in trends of homogamy.

Another, although rarer, stream of research in this topic tries to link trends in marriage patterns with indicators of economic development, with the aim to test empirically the reliability of the modernization theory. One of the first contributes comes from Zijdeman and Maas (2010), that examined changes over time of the importance of ascribed characteristic (the father's status) and achieved characteristics (the bridegroom's status) for partner choice, relating those choices to indicators of modernization. Using data from the Dutch province of Zealand for 1811 to 1915, they found that economic modernization was negatively associated with the father's status, indicating a shift from ascription to achievement. A recent contribution (Maas & Leeuwen, 2019), which exploits data from the GENLIAS database between 1812 and 1922 tested bot the romantic-love and the status-attainment hypotheses for partner choice in relation with indicators of economic and social modernization. According to their data, both a shift from ascription to achievement and a general weakening of status-based marriage choice occurred during modernization.

The majority of contributes to the literature in the past 15 years come mainly from the Netherlands, Belgium and the Scandinavian countries, because of the availability and accessibility of large datasets. On the other hand, studies from other context such as Southern Europe are scarcer due to the lack of proper data. For Italy, the most significant contributes use data from military registers in the city of Sassari (Sardegna) for the period 1866-1925. For instance, a study of Breschi and co-authors (2010) analyzed how physical characteristics of potential grooms could influence their chances to upward marital mobility. Thus, variations over time and space in patterns of marriage choices and their association with processes of socio-economic modernization in Italy are still under investigated, and the main reason is the lack of data.

2. Research question

The present paper aims at introducing an Italian case of study in the international debate around historical patterns of marriage choices and the role played by the modernization. The context chosen for the analysis is the city of Milan. The main reason for this focus is that Milan has been both the forerunner of the Italian economic development and, even when other cities in the country experienced it, it has been one of the main economic and industrial centers at the national level. Thus, in Milan socio-economic processes like the advent

of technologies and new forms of production, urbanization, migrations have been especially present and strong (Dalmasso, 1972; Hunecke, 1982; Guiotto, 1986). Thus, in the Italian panorama, Milan seems an especially privileged context to explore the effects of modernization.

Empirically speaking, the association between groom's and bride's will be analyzed, to assess if it changed in the two periods in the analysis. The time dimension will be considered as an indirect measure of industrialization.

The time span for the analysis includes two periods. The first goes from 1890 to 1899. During this decade, Milan was involved in a first phase of industrialization, characterized by the presence of small farms within the city borders together with the small-scale way of production. The process of industrialization continued with the beginning of the 20th century up to the 50s, known as the «economic boom» of the second post-war. In these years Milan became – together with Turin and Genova – the main Italian industrial city. The biggest firms settled in the city, thus calling massive flows of migration from all the Italian regions. Not only the economic system, but also the occupational structure, the urban conformation of the city, the social and geographical composition of the population changed as well. Thus, comparing these two periods could provide an indirect way to asses if, and to what extent, the modernization theory in the city. More precisely, the main research question that leads this work can be formulated as follows: How did patterns of marriage by social class change in the city of Milan during the industrialization?

Following the paradigm proposed by the modernization theory, it could be hypothesized that the economic, social and cultural processes that took place in the city between the two periods under study could have led to a greater degree of heterogamy in marriage choices. This will be the main hypothesis that will be tested with the data.

3. Data

3.1. Data collection

The present work exploits newly collected couple-level data from the Civil Archive of Milan. Data were collected from 3,924 marriage acts through the years 1890-1899 and 1950-1959. The sample is stratified by year with a nonproportional procedure, with the aim to have the same number of marriages in the two decades. In order to adjust for the different population sizes, in the analyses data are weighted, except for the log-linear analysis.

Three types of information can be retrieved from marriage acts: socio-demographics about the grooms, information about the ceremony and some ancillary information about the social environment of the couple.

With regards to the socio-demographic information of the grooms, several elements can be found such as age, place of birth and residence, civil status and occupation. The place – the parish or the neighborhood where the act was registered – and information about the ceremony – religious (with specification of the confession) or civil – are present as well. Finally, it is possible to reconstruct, although not fully precisely, the social

environment of the couple. Occupation of the witnesses is available in all marriages. With regards the parents, it can be found if they were still alive at the marriage. In a positive case, there is information about their place of residence. With regards to father and mother's occupations, they can be retrieved from grooms' birth acts just for individuals who were born in Milan from 1866 onwards.

3.2. Coding of occupations: HISCO

Since the focus is homogamy by social class, an occupational approach has been adopted. It means that the occupation has been considered as indicator of the social status of the individual (Blau & Duncan, 1967). However, the author is aware of some potential downturns in using it. First, the occupation at the moment of the marriage is recorded in young ages, and it could not represent the final destination in the individual's career. Moreover, some misunderstandings may arise in the use of a self-reported occupation, that can come from unproper registration or the use of wrong terms.

For the coding of the occupations, HISCO (Historical International Classification of Occupations) has been chosen with the aim to avoid problems of misleading titles and to provide a comparable measure. For a detailed description of the structure of HISCO, please refer to van Leeuwen and coauthors' book (2002). All occupations collected – that of the grooms, parents and witnesses – were recoded. Finally, 328 HISCO codes were generated for the grooms, out of 798 occupational titles.

3.3. Building the class scheme: HISCLASS

Once that occupations were coded in HISCO, it has been possible to build the class scheme using HISCLASS (van Leeuwen & Maas, 2011). In some cases, the shift from HISCO and HISCLASS resulted problematic, and leading to the loss of some information, especially among women. Indeed, the under representation of female work careers is quite common in historical research (Moreels, 2010) for a main reason. First, it was common that women performed economic activities, but with unofficial – and thus invisible – in the domestic dimension. Consequently, this kind of information cannot be retrieved from the sources once they are classified as housewives. The same reasoning cannot be applied even for the decade 1950-1959. Indeed, it was in this period that the breadwinning couple model took advantage even in Italy, characterized by a strong gender divide between work outside the household and housework (Jannsens, 1997; Becker, 1974). Thus, it is plausible to assume that women indicated as housewives did not perform any economic activity, but were focused just on housework and childcare. Respectively, there were 299 brides (15,3%) recorded as housewives in the period 1890-1899 (40,06%), where as they were 787 in the decade 1950-1959. It was possible to retrieve the housewife's class in the case there was occupational information of the father, adopting an interegenerational approach that is common in the literature (Delger & Kok, 1998). This could be the case for women born in Milan from 1866 onwards. For the period 1890-1899, for the 22,4% of the housewife it was possible to trace their father's occupation, whereas for the decade 1950-1959 it happened for the 23,37%. Thanks to this, it was possible to include 251 cases to the analyses.

The final version that will be used for the analysis is made of 5 classes; unskilled workers (V), semiskilled workers (IV), skilled workers (III), lower managers and professionals, clerical and sales (II), and higher managers and professionals (I). With respect to 7-classes version of HISCLASS, classes 4 (Farmers and Fishermen) and 5 (Lower-skilled workers) were merged, as well as class 6 (Unskilled workers) and 7 (Farm workers). This choice I justified by the need of having enough cases in each class, but on the other hand made losing the distinction between farmers worker and non-farmers. However, this can not cause relevant problems in a context like that of Milan, where farmers were a minority of the work force.

4. Methods

Given the novelty of the data, it was decided to take a descriptive approach, that allows to explore the data and the relations among variables. For this reason, several descriptive statistics will be provided. First, an analysis of changes in the class structure will be run, with the aim to highlight how it was strongly influenced by economic and social phenomena that took place in Milan between the two decades. Second, marriage tables will be built to see a first measure of the association between grooms' and brides' classes and their marriage behavior. Third, rates of homogamy and heterogamy will be shown as well. All these analyses will be run both on observed and standardized data. More precisely, the population of the 50s will be standardized to the marginal distribution of the previous decade, in order to make them comparable.

As a second step of the analysis, log-linear models will be used to assess the association between our two variables of interest, groom's and bride's class. Indeed, log-linear modeling can be considered the golden standard in social mobility research, since it allows to calculate parameters of association between variables net of marginal distributions. Log-linear analysis is useful even in the presence of a third categorical variable, that in our case is time. For this purpose, uniform layer effect models (Pisati, 2000) are implemented. The notation of the saturated model is the following:

$$\ln F_{ij} = \mu + \lambda_i^X + \lambda_j^Y + \lambda_k^Z + \lambda_{ij}^{XY} + \lambda_{ik}^{XZ} + \lambda_{jk}^{YZ} + \lambda_{ijk}^{XYZ}$$

Where the parameter of interest is λ_{ijk}^{XYZ}, that indicates the variation of the association between X and Y across different layers of Z. In our case, the Z variables is time, operationalized as period 1 (1890-1899) or 2 (1950-1959). The effect of time on the association between X (groom's class) and Y (bride's class) will be tested in two models. The first is a full interaction model (Pisati, 2000), that postulates a complete interaction among the variables. The second is a quasi-crossing parameter model (Hout, 1983; Powers & Xie, 2000), that includes an additional parameter ν_{ij}^{XY} that accounts for the distance among the categories of the variables. In other words, the interaction parameter ν_{ij}^{XY} indicates the height of the step between the categories. In our study, it indicates the distance among classes, that are accumulated across the categories. The formal notation of the model is:

$$\ln F_{ij} = \mu + \lambda_i^X + \lambda_j^Y + \lambda_k^Z + \lambda_{ik}^{XZ} + \lambda_{jk}^{YZ} + \lambda_{ijk}^{XYZ} + \nu_{ij}^{XY}$$

Since the distribution of frequencies of weighted and unweighted frequencies are identical, in the implementation of log-linear models unweighted data have been used.

As a third step of the analysis, logistic models are implemented for assessing how the chances of marrying a housewife changed over time across groom's class. Analyzing their association with their groom's class can help in understanding if it was a common pattern or rather the prerogative of some classes, and how it changed over time.

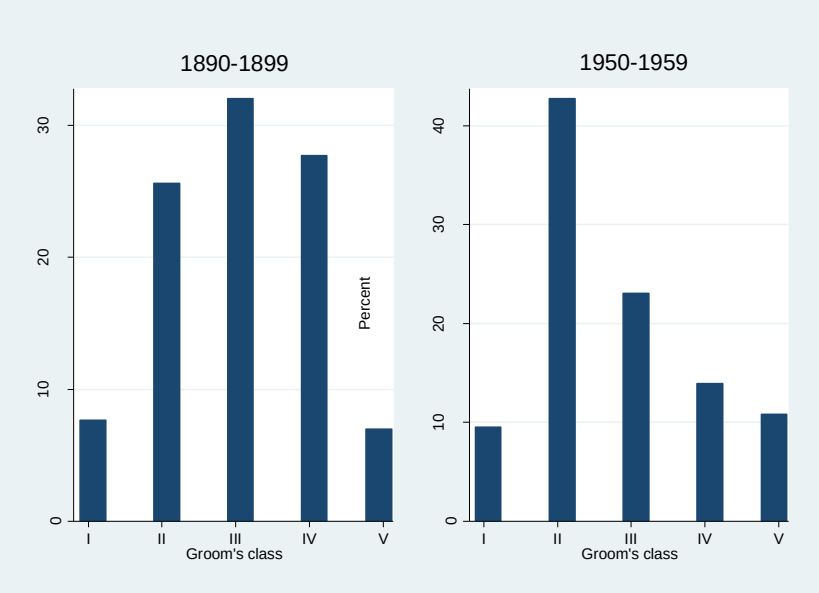
5. Results

5.1. Descriptives

5.1.1. Class structure

Figure 1 and 2 display the distribution of grooms and brides by social class in the two decades. As it could be expected, both experimented significant changes as the result of major changes in the economic and social context. With regards to grooms, some elements are worth of interest. First, it can be observed that the higher class – higher managers and professionals – did not changed its weight with time. The groups that experienced greater changes are those of clerical workers – from 25 to 42% - and unskilled workers (from 7% to 11%). These changes can be traced back to the economic development of Milan. On the one hand, the increase of clerical workers is the result of the growth of the service sector, while the rise of unskilled workers can be defined as the share of factory workers. On the other hand, other classes with were more related to the pre-industrial economic system – such as the skilled workers, who were mainly craftsman with their own shop.

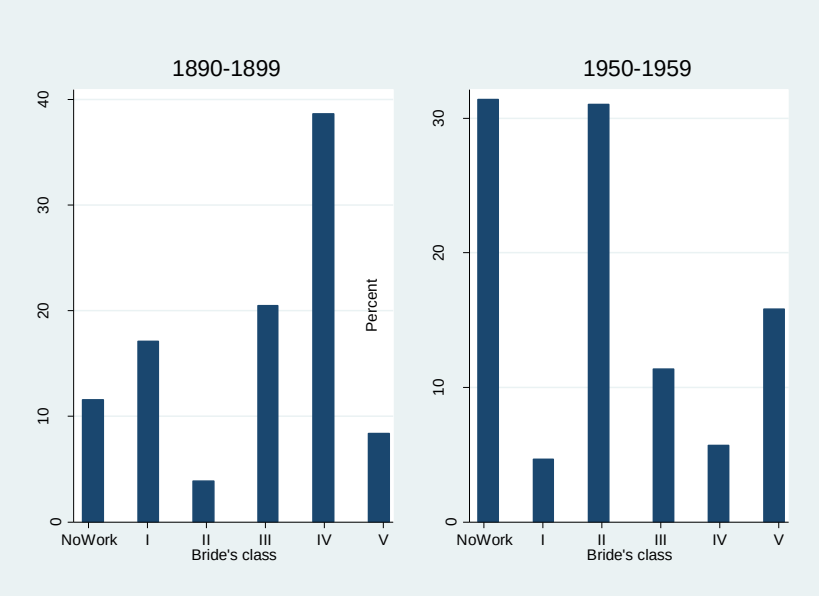
Figure 1. Grooms' social class, 1890-1899 and 1950-1959



With regards to women, two major shifts are relevant. First, the rise of non-working women, which can be interpreted as the rise of the group of the housewives. Indeed, with the industrialization the divide between

work and housework became the rule, with a strong gendered division of the two dimensions (Becker, 19..). Second, the changes in the distribution of working women across classes can be explained considering the dynamics of female work. In the pre-industrial period, when the family was still a unit of production, they were involved in productive activities in the same way as men. With industrialization, female workers shifted from the productive to the service sector, since the new jobs in the public and service sector were characterized by a high female-concentration.

Figure 2. Bride's social class, 1890-1899 and 1950-1959



5.1.2. Marriage tables

After exploring how the class composition of the two samples changed, marriage tables are analyzed with the aim to have a first assessment of the role played by structural factors in marriage choices by the means of marriage tables with both row and column percentages for the two periods. Given the significant share of non-working women, they are included in the tables, whereas non-working men are excluded.

Table 1. Marriage tables, row percentages, 1890-1899

Groom's class	Bride's class						Tot
	NoWork	I	II	III	IV	V	
I	13.4	76.7	3.3	2.7	3.3	0.7	100.0
II	17.3	36.3	8.8	17.1	15.7	4.8	100.0
III	9.1	3.3	2.4	29.4	46.7	9.1	100.0
IV	8.5	2.8	2.0	21.5	55.1	10.1	100.0
V	12.4	1.5	0.7	6.5	59.1	19.7	100.0
Tot	11.6	17.1	3.9	20.4	38.6	8.4	100.0

Table 1 display the marriage table with row percentages for the period 1890-1899. Thus, men's behavior can be analyzed in relation with their social class. Looking at the diagonal cells, it emerges that high-class men

show the strongest tendency towards homogamy, followed by semi-skilled workers. Moreover, from the tables it is possible to observe a strong divide between non-manual (class I and II) and manual workers in marriage patterns. A third element of interest is in the propensity of marrying a non-working woman across men's class. As it can be observed, it does not change significantly across men's classes, although clerical workers show a higher tendency with respect to the others.

Table 2. Marriage table, row percentages, 1950-1959

Groom's class	Bride's class						Tot
	NoWork	I	II	III	IV	V	
I	35.7	22.5	33.9	5.8	1.6	0.5	100.0
II	28.4	5.4	44.5	10.4	3.8	7.5	100.0
III	29.4	0.7	21.3	16.9	10.3	21.4	100.0
IV	38.5	0.4	18.8	11.9	8.3	22.1	100.0
V	33.2	0.4	12.1	7.6	4.3	42.3	100.0
Tot	31.2	4.7	31.1	11.4	5.8	15.8	100.0

Table 2 shows row percentages for the period 1950-59. The first element that emerges is that, for all classes, the share of men married with a housewife increased as a result of the growing presence of housewives in the class structure. As a consequence, even patterns of marriage with working-women change. For instance, we can observe that homogamy for high-class men decreased significantly from one period to the other. In the same way, men belonging to the classes were women increased their presence show higher percentages of homogamy, as it is for clerical and unskilled workers. As in the previous decades, the barriers between manual and non-manual workers are still present. For the analysis of women's marriage behavior, tables with column percentages are displayed.

Table 3. Marriage table, column percentages, 1890-1899

Groom's class	Bride's class						Tot
	NoWork	I	II	III	IV	V	
I	8.8	34.3	6.5	1.0	0.7	0.6	7.6
II	38.3	54.4	57.9	21.5	10.4	14.6	25.6
III	25.1	6.3	19.8	46.1	38.7	34.8	32.0
IV	20.3	4.5	14.5	29.2	39.5	33.5	27.7
V	7.5	0.6	1.3	2.2	10.7	16.5	7.0
Tot	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Let the analysis begin with the observation of housewives' behavior. Unlike for men, they distribute themselves differently across their husbands' classes. They marry more likely men from the clerical class,

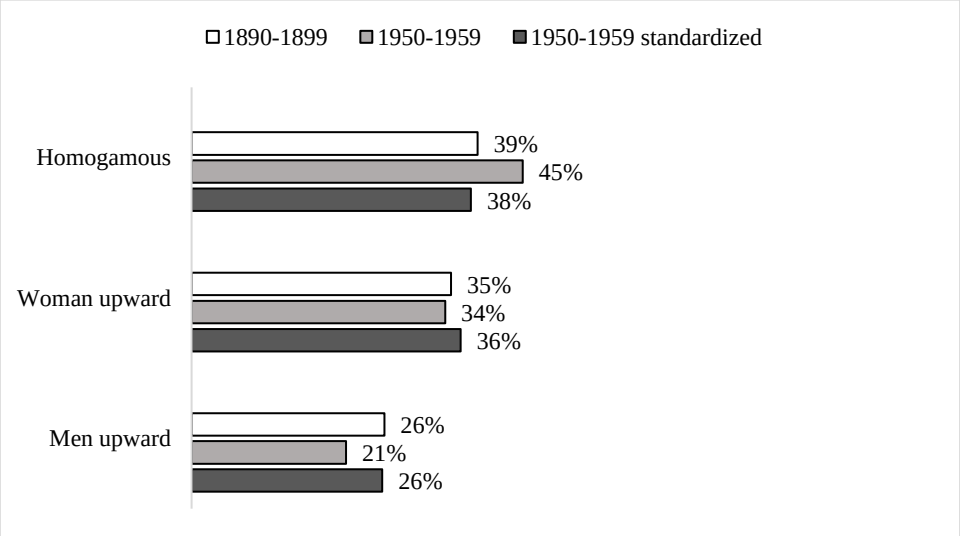
whereas they are less represented in the class of unskilled men[1]. As it was found for men, barriers between manual and non-manual class exists, although they seem to be less strong for women.

Table 4. Marriage table, column percentages, 1950-1959

Groom's class	Bride's class						Tot
	NoWork	I	II	III	IV	V	
I	10.7	45.1	10.2	4.8	2.6	0.3	9.4
II	38.9	49.5	61.3	39.2	27.9	20.1	42.8
III	21.7	3.2	15.8	34.2	41.3	31.2	23.1
IV	17.2	1.2	8.4	14.5	20.1	19.5	13.9
V	11.5	1.0	4.2	7.2	8.2	28.9	10.8
Tot	100.0	100.0	100.0	100.0	100.0	100.0	100.0

As it happened for men, differences between the two periods can be found, and they appear to concentrate especially among the classes that experienced changes in their composition. Housewives' behavior does not change much with respect to the last years of the 19th century, except for a growing share of housewives that marry an unskilled worker. Homogamy of high-class women increases, as that of unskilled workers. As it emerged from the previous period, barriers among classes seem to be less strong for women, that display a more mobile behavior. However, homogamy remains the prevalent choice, especially for women belonging to non-manual classes.

Figure 2. Rates of homogamy, upward mobility for women and for men



An additional confirmation that the observed changes in marriage patterns can be traced back to shifts in the class composition of the population under study comes when looking at rates of homogamy and heterogamy across the two periods. Indeed, when the marginal distribution of the period 1950-1959 is standardized to that

[1] The under representation of housewives married to high-class men can be due to the fact that, in the coding procedure, where it was found the title «benestante» it was coded as belonging to the 1st class, even if, most likely, she did not provide any economic activity.

of the 1890-1899, rates of homogamy are the same, whereas the observed homogamy for the same period was even higher. With regards of the rates of heterogamy, it can be observed that, with standardization, they remain very similar in the two decades.

The analysis for separate classes shown in Table 6 and Table 7 show the same results. When equalizing the marginal distributions, patterns of marriages do not change significantly between the two decades. For men (Table 6), higher-class individual reinforced their tendency towards homogamy, whereas for the other classes it remained almost the same. For women, a general – even if small – decrease in homogamy can be found for all classes, except for the unskilled worker, who increased their tendency in marrying an unskilled worker as well.

Table 5. Rates of homogamy, upward and downward mobility for men, 1890-1899 and 1950-1959 (standardized)

	1890-1899			**1950-1959**		
	Homogamy	**Upward mobility**	**Downard mobility**	**Homogamy**	**Upward mobility**	**Downard mobility**
I	88.5	0.0	11.5	93.1	0.0	6.9
II	10.6	43.9	45.5	7.4	46.5	46.0
III	32.4	6.3	61.3	29.8	4.3	65.9
IV	60.2	28.7	11.0	59.6	29.5	10.9
V	22.5	77.5	0.0	30.9	69.1	0.0

Table 6. Rates of homogamy, upward and downward mobility for women, 1890-1899 and 1950-1959 (standardized)

	1890-1899			**1950-1959**		
	Homogamy	**Upward mobility**	**Downard mobility**	**Homogamy**	**Upward mobility**	**Downard mobility**
I	34.0	0.0	66.0	34.2	0.0	65.8
II	62.9	6.4	30.7	47.0	3.4	49.6
III	46.3	21.8	31.9	43.3	21.8	34.9
IV	39.7	49.3	11.0	38.7	54.5	6.7
V	17.6	82.4	0.0	24.0	76.0	0.0

5.2. Log-linear analysis

Descriptive statistics seem to suggest that the major role in changing marriage patterns was played by the different marginal distributions, as a result of changes in the socio-economic organization of the city. A

statistical technique that is tailored for assessing the association of two or more variables regardless the marginal distributions are log-linear models. Indeed, log-linear modeling can be considered the golden standard for social mobility research (Hout, 1983), and as so they have been applied to our data.

Following the findings suggested by the descriptive exploration, it was decided to perform two models: a full interaction model, and a quasi-crossing parameters model, which includes a parameter that accounts for distances between the categories of the variables, that is, the distances across classes. In both models, the effects of the third variable – in our case, time – is set as zero. This means that we are assuming that time – and, indirectly, modernization – did not change the association among variables.

Table 7. Goodness of fit statistics, full interaction model and quasi-crossing parameters

	gl	X2	p	L2	p	BIC
Cond. Independence	32	1392.5	0.00	1305.3	0.00	1048.5
Full interaction	16	23.9	0.09	24.6	0.08	-103.8
Quasi-crossing parameters	25	62.4	0.00	61.3	0.00	-139.3

Table 8. Standardized cell residuals, full interaction model and quasi-crossing parameters

Groom's class	Bride's class									
	1890-1899					1950-1959				
	I	II	III	IV	V	I	II	III	IV	V
I										
Full interaction	0.1	0.4	-0.9	-0.3	1.1	-0.2	-0.1	0.8	0.4	-0.5
Quasi-crossing	-0.1	-0.2	0.4	0.3	0.2	0.2	-0.9	3.4	1.2	-1.3
II										
Full interaction	-0.1	1.2	-0.3	-0.2	-0.1	0.2	0.3	0.3	1.5	-0.5
Quasi-crossing	0.6	1.2	0.6	-2.5	1.0	-0.1	-0.4	0.9	0.5	-0.3
III										
Full interaction	-0.1	-0.7	0.6	-0.2	-0.1	0.2	0.3	-0.9	0.6	0.1
Quasi-crossing	-1.3	-1.3	0.5	0.1	0.4	-0.3	-0.7	-0.8	1.1	0.9
IV										
Full interaction	0.0	-1.0	0.2	0.2	-0.2	-0.1	0.5	-0.3	-0.7	0.2
Quasi-crossing	0.1	0.1	0.0	0.3	-0.7	-0.2	2.6	-0.7	-0.8	-0.8
V										
Full interaction	-0.3	-1.0	-1.2	1.0	-0.4	0.6	0.3	1.4	-2.1	0.2
Quasi-crossing	-0.5	-0.8	-2.9	2.3	-0.4	0.4	1.5	-0.7	-1.6	0.3

First, the models are assessed according to the goodness of fit statistics and the magnitude of the cell residuals. The full interaction model performs better in terms of the chi-square statistics, whereas the quasi-crossing parameters model has a better BIC. With regards to the cell residuals, that tell about the ability of the model to reproduce the observed frequencies, the full interaction model performs better than the quasi-crossing parameters; however, the low number of critical cell residuals found in the quasi-crossing parameter does not prevent from accepting it as a good model.

Table 9. Full interaction model, standardized interaction effects (multiplicative form)

Groom's class	Bride's class				
	I	II	III	IV	V
I	19.55	1.96	0.69	0.34	0.11
II	2.78	1.54	0.86	0.46	0.59
III	0.32	0.74	1.68	1.55	1.63
IV	0.27	0.74	1.34	1.89	1.96
V	0.21	0.61	0.75	2.18	4.79

Table 10. Quasi-crossing parameters, standardized interaction effects (multiplicative form)

Groom's class	Bride's class				
	I	II	III	IV	V
I	18.25	2.54	0.37	0.27	0.22
II	2.54	1.61	0.84	0.60	0.49
III	0.37	0.84	1.69	1.53	1.24
IV	0.27	0.60	1.53	2.13	1.92
V	0.22	0.49	1.24	1.92	3.94

Table 9 and Table 10 show log-linear interaction effects by bride's and groom's social class. The picture that emerges from the two models is quite similar, and it reproduces what already emerged from the descriptive statistics. The only difference between the two models is that the quasi-crossing parameter reproduces a symmetrical association between grooms and brides. The highest parameters – that stand for a positive association – are the diagonals, with that of the highest class especially high. This means that, among individuals belonging to the top part of the social stratification system, the homogamy was especially common. They are followed by the class of unskilled workers, that display a strong association as well.

About the barriers across classes, the divide between non-manual and manual workers keeps emerging, but it is possible to observe how the classes in the middle of the social stratification system – low professionals and skilled workers – show a more fluid behavior, with a parameter close to 1. In order to explore more in depth the distance among classes, the association parameters provided by the quasi-crossing parameters model can be exploited (Table 11).

Table 11. Association parameters, quasi-crossing parameter model

Association parameter	Estimate	Standard error
I:II	-1.39***	0.10
II:III	-1.43***	0.07
III:IV	-0.39***	0.06
IV-V	-0.46***	0.07

The higher the absolute value of the parameter, the steeper – positively or negatively – is the step between one class and following one. The pattern that emerges from the parameters is the same as observed before: the

stronger barrier are those between non manual and manual workers (II:III), and, as a result of the strong homogamy shown by the highest class, between Higher professionals and clerical workers. Moreover, barriers within manual classes are easier to overcome, indicating more fluidity among these kinds of workers.

To sum up, both models, that postulate the effect of time – and the modernization – to be null, can be statistically acceptable, since they succeed in reproducing the observed cell frequencies. With regards to the association among the classes, they reproduce the pattern that was already evident from the descriptive statistics. Homogamy prevails, especially in the top and bottom part of the stratification system. Moreover, barriers between manual and non-manual workers persist over time, making the exchange among these groups less likely. On the other hand, there seems to be good fluidity among non-manual workers and, to a less extent, among clerical workers and skilled workers.

5.3. An insight on housewives

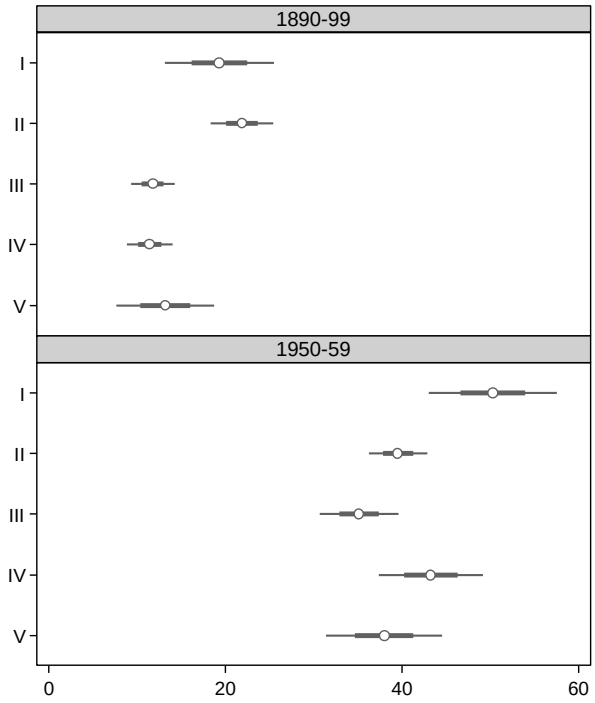
As stated previously, studying social mobility through an occupational approach can face the problem of the under representation of women's career, which is a common problem in historical research. Moreover, the nature of the data does not allow to adopt an intergenerational perspective, that could allow to overcome the lack of information about the bride with that of her father.

However, marriage register are believed to provide relatively complete information on women's employment (Schulz, Maas, & Leeuwen, 2014). Indeed, in the marriage form there was a separate space for women's occupation, that was self-declared by the bride herself. This procedure diminished the problem of female occupations being under-reported. Looking at our data, the framework that emerges is that of a high share of women involved in some economic activity. This is especially true for women that get married at the end of the 19th century; as it emerges from Figure X, the share of women who declare being involved in an economic activity is around 80%. This is due to the fact that, probably, a lot of women were not officially in the labor market, but still performed economic activities in their houses that can be considered as a profession.

As it has been stated throughout the previous paragraphs, the rise of the breadwinning couple model in which the woman was dedicated to the housework leads some problems in terms of the classification of the housewives within the class scheme. Indeed, from this title it is not possible to derive any information about the class of the woman. However, they represent a relevant number in our sample, and excluding them from the analyses can bias the result. For this reason, it has been considered appropriate to perform some analyses about the housewives, with the aim to gain a better understanding of the dynamics related to them,

In order to see the extent to which the likelihood of marrying a housewife changed across classes and time, a logistic regression was performed.

Figure 3. Logistic regression. Predicted probabilities and confidence intervals of marrying a housewife by groom's class, 1890-1899 and 1950-1959



Similarly to what emerged from the descriptive analyses, the likelihood of marrying a housewife increases for individuals of all classes between the two periods. However, some information can be derived. First, it can be observed that, in the decade 1890-1899, the probability of marrying a housewife was higher for men belonging to the non-manual classes with respect to the manual ones. This pattern can be explained by the fact that, in the early phases of industrialization, the family still played a role as an economic unit, and women were likely to perform economic activities. Coming to the 50s, when the breadwinning model became prevalent, women exited the labor market across all levels of the social stratification system. This can be traced from the bottom side of Figure 3, that shows how the predicted probabilities of marrying a housewife became higher for all social strata, and that the divide manual-non manual classes does not emerge clearly anymore.

6. Conclusions and further developments

The aim of this paper is to introduce an Italian case study in the international debate about the effect of modernization on marriage choices. More specifically, the focus is about social homogamy. The theoretical standpoint to be tested was the modernization theory (Shorter, 1978; Goode, 1981). According to this school of thought, the economic and social changes that invested Western societies between the 19th and 20th centuries made heterogamy more frequent, weakening barriers among social groups. Past research has tried to test several hypotheses and mechanisms related to this statement, but results are not entirely consistent with the corroboration. Mainly because the lack of proper data, Italian contributes to the debate have been traditionally scarce.

Using newly collected couple-level data from Milan, the main city of Italian economic and social development, have been used to assess if modernization changed the association between grooms' and brides' social class, taking as time span for the analysis the decades 1890-1899 and 1950-1959. The class scheme is built on HISCO, the occupational classification scheme for historical occupations (van Leeuwen et al., 2005) and HISCLASS (van Leeuwen & Maas, 2011).

As a first step, a deep understanding of data with descriptive analyses has been provided; it emerged that observed changes in marriage patterns by social class can be reduced to the major changes that the class structure of the population experienced with industrialization. When populations were standardized, no significant changes in the distribution of men (and women) across their wives (and grooms) class arose. Indeed, rates of homogamy and heterogamy remained very similar between the two decades. Thus, it could be hypothesized that modernization, and so time, did not play a role in trends of social homogamy.

This hypothesis has been tested through means of log-linear analysis. Indeed, models specified with the parameter referring to time being null display acceptable goodness of fit statistics and replicate what was found in the descriptive analyses. First, the top (high professional) and bottom unskilled workers) classes appear to be the more homogamous in both periods. Second, a strong divide between non-manual and manual classes persists over time, except for middle classes – lower professionals and skilled workers – that display a stronger tendency towards intermarriage. Third, women are found to be slightly more upwardly mobile than men. Thus, it can be stated that, according to the data available, modernization does not seem to increase heterogamy from one decade to the other; in other words, modernization did not make Milan society more open, and barriers among classes endured with industrialization.

This work exploits a new and valuable source of data and contributes to the understanding of processes of social and economic modernization in Italy, which are traditionally understudied in this country. Moreover, with this first contribution, the Italian case could enter in the ongoing international debate about historical patterns of social mobility and its trends over time. However, some limitations of this work have to be acknowledged.

First, it provides just an indirect assessment of the theory, since there is not a direct measure of modernization. Indeed, the passage of time is considered as an indicator of modernization. This is a common practice in the literature, but it would be worth of interest including in the analyses indicators of economic and social modernization, to test their effective effect in modeling the associations of grooms' classes.

Second, as it has been stated throughout the paper, the treatment of women work careers has been problematic, especially those of women in the 50s. This is due to the rise of the figure of the housewife, that cannot be placed in any class. Given the nature of the data, the intergenerational approach that considers bride's father class has been applied just to a few cases. In order to have a better understanding of the dynamics related to this figure, additional analyses were performed. Logistic regression models show that at the end of the 19th century, the likelihood to marry a housewife was higher for non-manual workers. This class gradient is lost in

the results for the decade of the 50s, due to the fact that the exit of women from the labor market during industrialization was equally spread among all social strata.

Third, the analysis of these two decades has allowed to test modernization theory in a long perspective, but, on the other hand, having data from a period between the two could add some understanding, especially in the light of the transformation of the occupational and class structure.

The richness of data provides several suggestions for further research. Besides social homogamy, other types of marriage patterns could be analyzed. One is age homogamy, since the age of the grooms is provided. More promisingly, information about the geographical origin and residence of the spouses could be used to test theories about mixed marriages and migrants' integration in town. Similarly, even the information about the place where the marriage took place (the parish or the neighborhood) could help to test theories about social segregation. Finally, also the information about parents' presence at the time of the marriage could be used to analyze if the experience of orphanage influenced marriage behavior, and to see if there were differences among sexes and classes. These are just some possible directions for further research exploiting this dataset, witnessing its potentials for historical and sociological research.

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