Article

Increasingly Dense and Connected Field: A Longitudinal Co-word Analysis of Youth Sociological Articles from 1990 to 2019

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Abstract: Youth studies represent a research field with visible potential, and its emergence has seen a substantial increase in the last decade. A longitudinal bibliometric analysis of sociological articles on youth was conducted using Web of Science (WoS) entries, with the analysis divided into three distinct decades, 1990–2019. From 41 sociological articles containing the keyword "youth" in 1990 to 704 in 2019, this evolution is reflected in the increasing interconnectedness of keyword co-occurrences. Thus, after 2000, keywords such as gender, adolescence, education, and race became increasingly popular, while keywords such as children and family structure, which were popular between 1990 and 1999, subsequently lost their relevance. The thematic cluster analysis reveals the emergence of new clusters, such as those centered around social media, LGBTQ, or mental health. The growth of occurrences for many keywords demonstrates the complex and heterogeneous development of the youth studies field in the sociological literature, so many future trends in this field remain unpredictable but promising at this time.

Keywords: bibliometric analysis; cluster analysis; keyword co-occurrences; longitudinal analysis; mapping; youth studies

1. Introduction

Although youth is a highly debated topic in the scientific literature, this does not seem to happen for an extended period of time. While there is no unanimous definition of youth, it should be noted that it is rather an intermediate stage, but also socially constructed, between childhood and adulthood [1]. This is because youth should not be confused with adolescence, which is defined as " ... beginning with puberty and ending once physiological and emotional maturity is achieved, and it tends to cover a more protracted time span" [1]. On the contrary, youth have an active social component, which is why it is a topic increasingly addressed in the sociological literature, as we will see. Leaving the sphere of purely anatomical and psychological analysis of youth, Heinz [2] refers to this category as "path-dependent social structures" because it is characterized by certain dependencies of different intensities: if childhood is considered a period of complete dependence, this state gradually diminishes until adulthood. Additionally, the risks and experiences that characterize youth are quite distinct, which is largely determined by socio-demographic predictors. Therefore, some young people stay longer in the educational environment, while others become employees and start their own families, and this structural variation must be studied even in terms of risk [3]. On the other hand, other young people are part of the NEET category, meaning Not in Education, Employment, or Training. Such a social category is relevant in sociology because it shows how the socioeconomic characteristics of some individuals are reflected in the potential choices and values they acquire. This variety of topics related to youth is largely reflected in the related field of knowledge. Therefore, this article aims to conduct a systematic analysis of sociological articles related to youth for three decades (1990–2019). The longitudinal component of this study aims to highlight the main changes in youth studies by observing the emergence of new keywords in co-word

analysis. Additionally, of interest is the identification of potential "poles" that are closely related to the word "youth" in order to see if those classical structural variables (such as gender, education, and race) are still relevant topics regarding sociological publications. Thus, the article is structured as follows: I will describe some essential features frequently encountered in youth studies, such as "structure versus agency" discourse and the related consequences in policymaking. Then, I will highlight the role of bibliometric analysis and co-word analysis, along with previous studies that included youth studies in this type of analysis. Thereafter, all sociological articles in the WoS containing the word "youth" will be included in this bibliometric analysis, divided into three temporal clusters: 1990–1999, 2000–2009, and 2010–2019. Since the number of such scientific articles is on the rise, it indicates new trends and clusters of youth studies over time.

1.1. Youth: A Provocative Scientific Field

According to Furlong [1], the main concerns of youth researchers have changed very little in the last four decades. The socioeconomic background is a topic of interest for sociologists interested in youth studies, knowing that material advantages and disadvantages are transmitted from one generation to another, along with possible opportunities and risks [4–6]. This is a common discussion about the structure–agency dichotomy. This dichotomy has been used for decades to distinguish between structural conditions that limit an individual's perspective (such as socioeconomic status or cultural expectations) and agency conditions, referring to one's ability to access resources that bring power. One of the factors mentioned in youth studies is the opportunities they receive at a point in time, given the fact that these opportunities also influence their socio-professional status. Another structural factor is the welfare regime, which can determine certain national policies regarding youth. Such policies, of course, influence future social and professional opportunities. Thus, it is no coincidence that the main factors influencing the course of youth are topics of interest in sociological studies.

Without considering the main divisions that differentiate young people from each other, it is difficult to develop an effective approach in the field of youth studies. Although these divisions are as diverse as possible, Furlong [1] identifies three such criteria: gender, social class, and ethnicity. While gender is a visible source of youth division, awareness of this problem seems to be gaining ground in academia, especially in the last (two) decades, as will be discussed hereafter. These gender differences are not recent, as boys have been treated differently both in school and at home since childhood [7], with boys being tolerated for aggressive and emotionless behavior over time, while such behaviors are not allowed in the case of girls. On the one hand, gender influences the very choice of the professional sector, owing to the intensive socialization that girls and boys are subjected to at school and at home, which leads to persistent sources of inequality in organizational environments [8]. On the other hand, although it is a declining phenomenon, some professional sectors still practice gender-based remuneration, with men advancing faster on the hierarchical scale as they are considered more competent [9]. Furthermore, women are more likely to be engaged in professions that require a certain level of empathy and understanding, as well as increased communication skills. Sexuality is also related to gender-based divisions among youth, given that young people in many societies are still forced to hide their sexual identity when it goes outside of heteronormativity. It is not surprising that " ... queer youth are often cast as victims of homophobic violence or heterosexist exclusion in ways that inscribe them within tropes of victimization and risk" [10]. "Standard" approaches to relentless sexuality are increasingly being challenged by socially constructed guidelines arguing for culturally dependent sexuality [11,12].

Social class is another frequently mentioned criterion in youth studies, and parents' occupations are a significant predictor in such analyses. According to sociological studies, " ... despite changes in patterns of educational participation that affect all social classes, young people's family of origin remains a strong predictor of occupational destinations" [1]. Around the concept of social exclusion, sociologists are interested in observing how certain

social categories (including youth) unable to advance socially, remaining stuck in different socio-professional contexts lacking career opportunities. State interventions are more than necessary at such times, given that long-term unemployment among youth should be properly managed in states with active welfare benefits [13].

Ethnicity is also a well-known criterion of youth inequality, which social scientists frequently equate with the term 'race' to argue their view on the rather socially constructed origin of this concept. Most often, possible "race effects" are observed to visibly correlate with what we might call "class effects", which is why researchers interested in the ethnic factor in inequality consider transnational phenomena such as migration and colonialism. There are also social infrastructure patterns, such as ethnic minorities frequently living in slums with a high propensity for deviant behavior [14]. Of course, ethnic minorities have experienced a lack of professional opportunities for several generations, as they are disproportionately concentrated in low-status and low-wage occupations. However, some cases of immigration are part of a process of assimilation into the host culture, which is particularly true for younger generations, as Modood [15] illustrates in the case of second-generation immigrants, who are considered to have British identity to an increasing extent, compared to their elder generations of immigrants.

Discussions in the field of youth studies cannot be viewed separately from class analysis, as I have previously argued. Adherence either in the educational environment or in the professional sphere (or maybe even both at the same time) creates a series of structural advantages or disadvantages, being what Bourdieu [16] describes as "field". According to the field theory, social actors are embedded in a variety of hierarchical environments characterized in which they must occupy different positions and perform as expected in that field. Field examples include financial markets, music clubs, etc. Such fields have active components, as they are characterized by conflict or competition, which is why those who are part of such fields systematically seek to obtain benefits and rewards from different social positions [17]. In the discussion regarding the structure–agency dichotomy, the concept of "reflexivity" provides critical conceptual clarification. Thus, debates are frequent about how sociological literature regarding how individuals acquire the different traditions they are engaged in. For example, while structuralist perspectives argue that constraints can easily become routine for individuals so that they unconsciously submit to them, agency-centered perspectives emphasize the idea of reflexivity by causing social actors to decide in favor of some routines and against others [18–20]. Therefore, reflexivity underlies both social reproduction and social change because new generations can question previous customs and values.

Studying the obstacles and difficulties experienced by young people throughout their lives also implies increased reflexivity towards the possible structural shortcomings of this social category. According to some studies, it does not seem coincidental that children from the working class still expect to have some working-class jobs [21]. Threadgold and Nilan [19] state that reflective risk negotiation is beginning to take the place of class consciousness. This can be considered viable in late modernity, given that "the self is reflexively understood by the person in terms of his or her biography" [22]. In a period such as the one we are currently going through, personal aspirations are beginning to gain importance; however, socioeconomic status continues to play a dominant role in determining future expectations.

Research topics such as youth homelessness are also gaining increased attention, especially in the last decade, representing topics frequently researched through ethnography, as demonstrated by a recent study [23] on the internalization of habitus among homeless young people. In addition, positioning "on the fringes of society" entails the acquisition of multiple deviant behaviors, such as drug use [24], violence [25], along with a number of mental and emotional problems [26,27]. Of course, habitus exists even in the case of homelessness, resulting in the internalization of failures and instability discussed by Barker [23] because habitus involves the analysis and interpretation of the present based on past experiences [18,28]. Habitus has a coherent existence at the individual level and at the

group level, which is why the experiences and visions of individuals belonging to the same group are remarkably similar. Therefore, practices adopted among homogeneous groups also tend to follow a variety of patterns, such that what appear to be unique opportunities and obstacles become structural in nature.

For such social categories, instability is felt in almost every aspect of social life. According to Barker's ethnography [23], homeless young people end up experiencing uncertainty, including elements related to where they will sleep, the food they will eat, etc. In addition, transition periods between different types of accommodation are a recurring problem, given that the families from which homeless young people come are unable to fulfill their essential roles of providing emotional and material support in difficult times [29,30]. Thus, it is certain that the youth's problems are not just about them but rather about interconnected perspectives that bring together several cohorts and socio-demographic categories. The following excerpt justifies the multidimensional importance that youth studies have in defining new social, demographic, and cultural realities: "In these settings, adult anxieties about the public and private behaviours and dispositions of young people means that youth, understood largely as a process of transition and becoming, looms large in popular, policy, and academic discourses. Powerful narratives of risk, fear, and uncertainty structure a variety of processes and practices aimed at regulating the identities of young people" [31].

These essential research directions in youth studies were only briefly presented to demonstrate that youth are not a homogeneous category in the literature, but are determined by a variety of predictors. Thus, multiple studies in the youth area demonstrate that variables such as race, gender, and class influence the very distinction between normal and deviant youth, as well as the emergence of juvenile delinquency [32,33]. Furthermore, as Kelly [31] argues, the discursive complexity surrounding youth studies deserves to be highlighted, as it encompasses a range of scientific fields, such as sociology, criminology, psychology, and cultural studies, along with a variety of social categories in which youth can be included: unemployed, homeless, offenders, etc.

1.2. Co-word Analysis as a Bibliometric Approach

Co-word analysis is one of the most popular methods of mapping some research topics. In general, different clusters of words are formed depending on the emergence of recurring words in titles, keywords, or abstracts [34]. Given that co-word analysis, in its standard sense, has certain disadvantages—such as the fact that simple word chaining is not enough to outline a viable mapping context—some studies talk about the connections between main keywords based on common references [35].

The word "co-occurrences" is the main measure in this type of bibliometric analysis, as it gives different importance to words depending on their frequencies and connections. Co-word analysis was first introduced by Callon et al. [36] and is currently used in a wide range of fields and topics, such as climate change [37], suicide among black youth [38], sociology of science [39], computer games [40], iMetrics intellectual structure [41], social media research [42], tourism research [43], sharing economy [44], etc. As in the study by Mushunje and Graves Jr. [38], this article aims at a longitudinal examination of the characteristics of a certain social category in sociology publications to see if recurring phenomena in the literature are consistent with the arrangement of nodes in the mapping process.

Co-word analysis offers the advantage of visualizing the interactions between several keywords during the mapping process, which is why it is often used to identify trends and topics in specific scientific fields. Such features of co-word analysis include one of the shortcomings, namely their ability to frequently change over time [45]. The advantage of this method is worth mentioning to highlight different clusters that emerge, which is why different software applications appear to provide some high-quality data visualizations. Therefore, it is no coincidence that researchers from diverse fields use bibliometric analysis to review a large number of papers. However, bibliometrics should not be confused with systematic review. Such a review method aims to produce complete documentation of scientific sources in a certain field and in a certain time frame. In contrast, bibliometric

analysis has a rather analytical character [46], encompassing a diverse array of component methods such as co-word analysis, co-citation analysis, co-authorship analysis, etc.

Some studies use bibliometrics, including in the area of youth studies. For example, Simões et al. [47] conducted a study on "Not in Employment, not in Education or Training" (NEET) youth in order to see if the papers that discuss this topic are centered around structured and homogeneous clusters. They conclude that the literature on NEETs is still marginal, with no active and structured implications.

1.3. The Current Study

The aims of this bibliometric analysis are to (1) describe the knowledge about youth studies from a sociological perspective and (2) highlight the extent to which the main themes change over time. Such a longitudinal approach highlights how youth as a scientific field brings new topics of interest to scholars. The rationale of this bibliometric approach is that it pursues, longitudinally, the interest of sociologists for youth as a scientific topic in the last thirty years. A longitudinal approach is welcome as it shows how the popularity of youth-associated phenomena is reflected in an increasing number of word occurrences associated with this topic.

2. Materials and Methods

For this study, all sociological articles containing the word "youth" that were published between 1990–2019 were selected. The WoS was used to extract these articles, resulting in a total of 6705 articles: 734 published between 1990–1999, 1286 published between 2000–2009, and 4685 published between 2010–2019. Figure 1 shows the evolution of the number of articles from one year to another precisely.
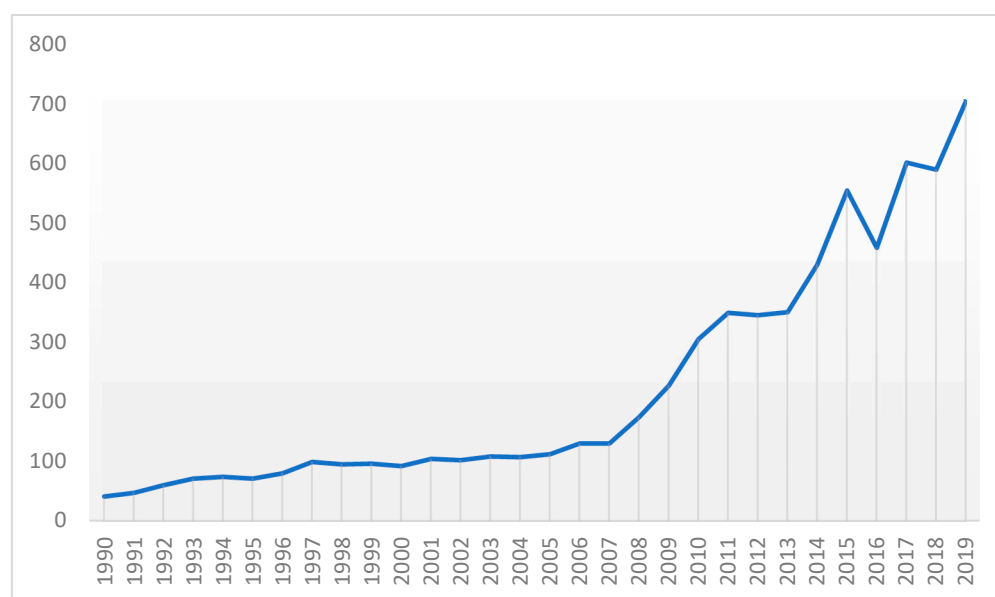
Figure 1. The evolution of sociological articles' frequencies related to youth between 1990–2019.

The very frequency of youth studies increases significantly from one decade to the next (as seen in Table 1 below), for example the word "youth" was used 65 times more in the period 2010–2019, compared to the 1990–1999 interval, in the sociological studies. After manually checking the exported files (no duplicate data were found), VOSviewer was used to visualize the data, given that this application is cluster-sensitive and highlights the main joining patterns between some keywords. For this analysis, only author keywords were retained, although further studies may investigate the extent to which author keywords differ from Keywords Plus maps. Words from the latter category are automatically generated by analyzing recurring words from the titles found on the reference list [48].

Table 1. Most important 20 keywords related to "youth" theme for the three intervals (link strength in parentheses).

No.	1990–1999 Interval	2000–2009 Interval	2010–2019 Interval
1.	Youth (18)	Youth (138)	Youth (1174)
2.	Children (11)	Gender (95)	Gender (499)
3.	Family structure (8)	Adolescence (61)	Education (332)
4.	Gender (8)	Adolescents (51)	Race (281)
5.	Migration (8)	Education (51)	Young people (249)
6.	Adolescence (7)	Race (51)	Identity (244)
7.	Culture (6)	Ethnicity (45)	Ethnicity (183)
8.	Divorce (6)	Identity (41)	Adolescence (178)
9.	Attitudes (5)	Children (31)	Class (162)
10.	Community (5)	Family (31)	Adolescents (146)
11.	Employment (5)	Sexuality (31)	Family (144)
12.	Fathers (5)	Immigrants (23)	Culture (140)
13.	Identity (5)	Class (22)	Religion (132)
14.	Marriage (5)	Delinquency (22)	Mental health (120)
15.	Oil (5)	Young people (22)	Ethnography (116)
16.	Social change (5)	Assimilation (19)	Inequality (115)
17.	Social class (4)	Citizenship (19)	Migration (106)
18.	Adolescents (4)	Social capital (19)	Racism (106)
19.	At-risk youth (4)	Divorce (18)	Sexuality (104)
20.	Behavior problems (4)	Family structure (18)	Social class (104)

The data analysis process is represented by the generation of relevant clusters, so that the main themes found on a keyword map are distributed according to their density [49]. The data analysis procedure was largely consistent with Simões et al. [47]: first, the most important keyword trends among publications were established, followed by the mapping of the cluster thematic analysis. In order to track the density of the keywords involved, the strength of the internal ties of a specific cluster was also tracked. Thus, the more intensive the combination of two keywords, the thicker the connection between them. Additionally, the size of a particular word on the map is determined by its frequency of use, so multiple occurrences of a particular word result in a larger circle for that word. Joining recurring links between certain words increases the possibility of those words being included in the same cluster, according to how VOSviewer was designed [50,51].

A recurring issue in the bibliometric analysis is the establishment of thresholds for highly frequent keywords. For example, some studies were limited to retaining 55% of the keyword list when the database did not include a very large number of words [52], whereas studies containing hundreds of words in the database were only able to retain less than 30% of these words, depending on their frequency and connectivity [53]. Setting thresholds in the bibliometric analysis is very context dependent, given that it largely depends on the degree of connection between the main keywords. Thus, a database of several thousand words leads to the maintenance of a corresponding threshold of about 5%.

3. Results

As previously mentioned, this analysis comprises 6705 articles grouped into three temporal intervals: 1990–1999, 2000–2009, and 2010–2019. It is worth noting right away that the number of youth-related articles has increased dramatically, particularly in the last

decade, as approximately 11% of the articles included in this bibliometric analysis were published between 1990 and 1999, 19% between 2000 and 2009, and the remaining 70% between 2010 and 2019. Table 1 lists the 20 most recurring keywords in each time slot, along with the link strengths of each word. The link strength, in our case, indicates the number of links that a word has with other words.

(1) The range of 1990–1999 contains a total of 345 author keywords related to youth. However, these words are mainly used in isolation in scientific publications, as can be seen in Figure 2, below. Therefore, when the minimum number of keyword occurrences is increased from 1 to 2, only 48 keywords meet the new threshold. This shows that, in this range, words related to youth are highly disconnected, so they do not form relevant clusters with other words. "Children" and "family structure" are the next most prevalent words in this time frame. Although the small number of words does not form some very cohesive clusters, the formation of thematic patterns in this field of knowledge is still noticeable. For example, the word "children" communicates with words from several clusters, and thus with a variety of thematic directions in youth studies, such as those generated by family difficulties such as "divorce" (red cluster), or even with aspects related to poverty (purple cluster). The yellow cluster includes words such as "health" and "family leisure", but also topics in the field of deviance, such as "delinquency" and "at-risk youth", the latter two words being used together in this bibliometric analysis. Another word that communicates with several clusters is "gender", which demonstrates the multidimensionality of this category, having links with words such as "social change" (blue cluster), "social class" (orange cluster), and "employment" (purple cluster). However, most co-word links from 1990–1999 contain a close link equal to one, demonstrating that the emergence of youth studies in sociological literature remained low in the 1990s.

Figure 2. Keywords co-occurrences for the youth articles, 1990–1999.

(2) The 2000–2009 interval contains visibly several publications. However, due to a fairly high level of disconnectedness among keywords with few occurrences, the minimum threshold was set to four in order to avoid the occurrence of some completely isolated keywords. In this context, only 102 keywords out of 2022 were retained during the mapping process. As can be seen in Figure 3, new words are gaining in importance in this range, such as "gender", "adolescence", "education", "race", and "ethnicity", in the order of their link strings. Gender also forms links with multiple clusters, determined by words such as "depression", "race", "family", "divorce" (blue cluster), "education", "ethnicity",

and "immigrants" (orange cluster). Gender appears to correlate with both "delinquency" and "social class" (brown cluster). The words in the sphere of deviance do not have a homogeneous exposition, being present in several clusters. For example, "substance use" is part of the green cluster, along with words such as "religion" or "violence", "smoking" is part of the yellow cluster, along with words such as "young people", "risk", and siblings. Drugs are part of the main cluster (the red one), along with "youth". "Ethnography" and "violence" are part of the green cluster. This time interval also brings "sexuality" into the cluster represented by gender, forming connections with other words such as "alcohol" and "class". Although not so strong in terms of co-occurring words, the turquoise cluster pays close attention to the concepts of "social capital" and "cultural capital", illustrating the consequences of access to various opportunities. It is no coincidence that "social capital" is associated with several clusters of words, such as "youth transitions", "social class", and "citizenship" (brown cluster); "families" and "social exclusion" (yellow cluster); and "education" and "ethnicity" (orange cluster). Employment and unemployment both point in other important directions. Moreover, both are placed in the yellow cluster, and even though they have a relatively small number of occurrences (seven for employment and four for unemployment), it is observed that both have links with words from different clusters. For example, unemployment is related to "social policy" (same cluster) and also to "earnings" (blue cluster) or "gender differences" (green cluster). "Employment" forms links with "race", "family", "marriage" (blue cluster), and "education" (orange cluster). Such concepts seem to be sociologically driven through the structural links they form with other words that are theoretically rich.

Figure 3. Keywords co-occurrences for the youth articles, 2000–2009.

(3) The 2010–2019 interval provides the most insightful data for the current bibliometric analysis due to the much larger number of publications and implicitly of the keywords that connect with each other. Thus, we notice many useful words in terms of occurrences and ties. A total of 6914 keywords were obtained from articles between 2010 and 2019. However, in order to maintain a weighting according to (1) the total number of keywords in the database and (2) the degree of connection between the most relevant words, 326 most relevant keywords were retained, as the minimum number of occurrences of a keyword was set to 7. Given that the 2010–2019 map does not provide visibility for all words, see Table 2 below for the full list of keywords for each cluster. The name of each cluster was established by combining the most impactful words in that cluster (according to their occurrences), such as youth, class, and identity for the first cluster.

Table 2. Clusters and related keywords for the 2010–2019 co-word map.

Cluster	Cluster Theme	No. of Keywords	Specific Keywords
1	Youth, class, and identity (red cluster)	73	Ageing; Australia; authenticity; China; citizenship; class; community; consumption; democracy; diaspora; discourse analysis; diversity; ethics; Europe; fear; future; generation; globalization; identity; ideology; India; islamophobia; lifestyle; marginalization; memory; moral panic; multiculturalism; music; Muslim; narratives; parents; participation; performance; place; play; policing; political engagement; political participation; politics; popular culture; power; privilege; public space; racialization; racism; reflexivity; relationships; representation; resistance; rural; Russia; security; social class; social exclusion; sociology; space; stigma; subculture; subcultures; temporality; time; transitions; visual methods; whiteness; women; young people; youth; youth culture; youth cultures; youth participation; youth sport; youth subculture; youth transitions
2	Education, race, and ethnicity (green cluster)	56	Adolescents/youth; African American; aggression; aggressive behavior; Asian; bullying; civic engagement; coping; cyberbullying; dating violence; delinquency; depression; deviance; drug use; education; educational achievement; emotion; ethnicity; families; focus groups; gangs; general strain theory; health; health disparities; incarceration; internet; Latino; media; neighborhood context; parent support; parenting; peer support; peers; physical activity; political behavior; propensity score matching; prosocial involvement; qualitative methods; quantitative methods; race; race/ethnicity; resiliency; risk; school dropout; school-based programs; sexual behavior; smoking; social inequality; status; stress; structural equation modeling; technology; urban context; victimization; wealth; youth development
3	Adolescence, culture, and poverty (blue cluster)	45	Adolescence; adolescents; African Americans; alcohol; cohabitation; conflict; crime; culture; depressive symptoms; development; disadvantage; divorce; drugs; emergent adulthood; extracurricular activities; family structure; fathers; fertility; girls; intergenerational transmission; Italy; juvenile delinquency; latent class analysis; Latinos; life course; marriage; military; neighborhood effects; neighborhoods; Northern Ireland; obesity; poverty; prevention; resilience; risk factors; schools; segregation; socialization; socioeconomic status; sports; substance use; union formation; young adulthood; young women; youth violence

Table 2. *Cont.*

Cluster	Cluster Theme	No. of Keywords	Specific Keywords
4	Social capital, employment, and social mobility (yellow cluster)	30	Acculturation; adaptation; age groups; aspiration; assimilation; children of immigrants; educational attainment; employment; ethnic identity; expectations; Finland; higher education; immigrants; immigration; labor market; race and ethnicity; school-to-work transition; second generation; secondary education; self-esteem; social capital; social mobility; social networks; social stratification; social support; Spain; undocumented; unemployment; welfare state; youth unemployment
5	Family, migration, and social change (purple cluster)	27	Adulthood; age; belonging; disability; exclusion; family; football; generations; Germany; Hong Kong; inclusion; inequalities; leisure; locality; migration; motherhood; political socialization; refugees; school; social change; social inclusion; sport; Sweden; transitions to adulthood; transnationalism; well-being; youth activism
6	Gender, religion, and sexuality (turquoise cluster)	26	Affect; Africa; attitudes; civil society; emerging adulthood; gay; gender; hegemonic masculinity; homophobia; integration; Islam; language; masculinity; migrants; narrative; police; policy; religion; sexuality; social cohesion; spirituality; students; suicide; urban; values; volunteering
7	Inequality, work, and homelessness (orange cluster)	21	Academic achievement; Bourdieu; cultural capital; Czech Republic; educational inequality; habitus; homelessness; human capital; individualization; inequality; mobility; motivation; neoliberalism; networks; precarity; social justice; subjectivity; transition; transition to adulthood; work; youth employment
8	Agency, children, and violence (brown cluster)	19	Agency; autonomy; childhood; children; children and youth; conversation analysis; discourse; disputes; embodiment; emotions; ethnography; friendship; masculinities; morality; performativity; qualitative research; stratification; violence; youth policy
9	Social media, social movements, and young adults (pink cluster)	15	Activism; digital divide; discrimination; emerging adults; Facebook; ICTs; immigrant; intersectionality; LGBTQ; qualitative; social media; social movements; South Africa; symbolic boundaries; young adults
10	Life satisfaction and positive youth development (pink powder cluster)	14	Adolescent; Chinese adolescents; earnings; family functioning; life satisfaction; longitudinal; longitudinal study; measurement; mental health; positive youth development; psychological well-being; quality of life; religiosity; subjective well-being

It is observed that the main keywords in this cluster are those associated with structural division, such as "gender", "education", "identity", and "ethnicity". The Education, Race, and Ethnicity (colored green) cluster groups a series of words from the sphere of deviance, such as "deviance", "delinquency", "stress", "risk", "victimization", "smoking", "cyberbullying", "gangs", etc., so that the origin of these deviant phenomena is frequently discussed in terms of structure, through the repeated links in youth studies with educational and ethnic factors. The blue cluster encompasses adolescence/adolescents, along with the phenomena with which they are frequently associated in the literature, such as "alcohol", "substance use", "culture", and "neighborhoods". Although not very developed, the orange cluster mainly includes aspects related to structural inequality. Thus, relevant words in this cluster are "inequality", "habitus", "Bourdieu", "neoliberalism", etc. As with the previous interval, gender is the most significant keyword associated with youth. This word links to words from many other clusters, the most relevant being "identity", "class", and "stigma" (red cluster); "education", "race", and "ethnicity" (green cluster); "adolescents",

"culture", and "poverty" (blue cluster); "homelessness" and "inequality" (orange cluster); and "family", "migration", and "age" (purple cluster) etc. This turquoise cluster includes multiple concepts from youth studies that are gender related. Such a cluster is relevant because it discusses a number of phenomena associated with gender-based discrimination: "sexuality", "homophobia", "gay", "hegemonic masculinity", "suicide", and "narrative". Additionally, there is the yellow cluster in youth studies, which contains 30 keywords related to social capital, employment, and social mobility. As the cluster's name implies, it is focused on the potential opportunities that youth can get at the socio-professional level. However, an interesting pattern emerged: although "social capital" is part of the yellow cluster, along with words such as "immigration", "higher education", and "social networks", the orange cluster includes both "cultural capital" and "human capital", which are included in the inequality cluster.

As can be seen in Figure 4, some clusters remain underdeveloped; however, they point to promising theoretical and conceptual directions. For example, the pink cluster encapsulates current issues in communication studies through the increased importance given to the emergence of digital technologies. Thus, the most important words in this cluster include "social media" and "social movements". However, some contributions from the field of youth studies show the role that youth have in active participation in social change through words such as "activism", "Facebook", and "digital divide". The pink powder cluster, although quite marginal, includes theoretical perspectives focused on the quality of life among youth. Thus, the main keywords in this cluster include phenomena such as "mental health", "life satisfaction", "positive youth development", and "subjective well-being". An explanation for the (still) marginal nature of such an important topic could be given by the exclusion of youth from discussions on the quality of life and well-being, probably due to the neglect of this social category to the detriment of adults.
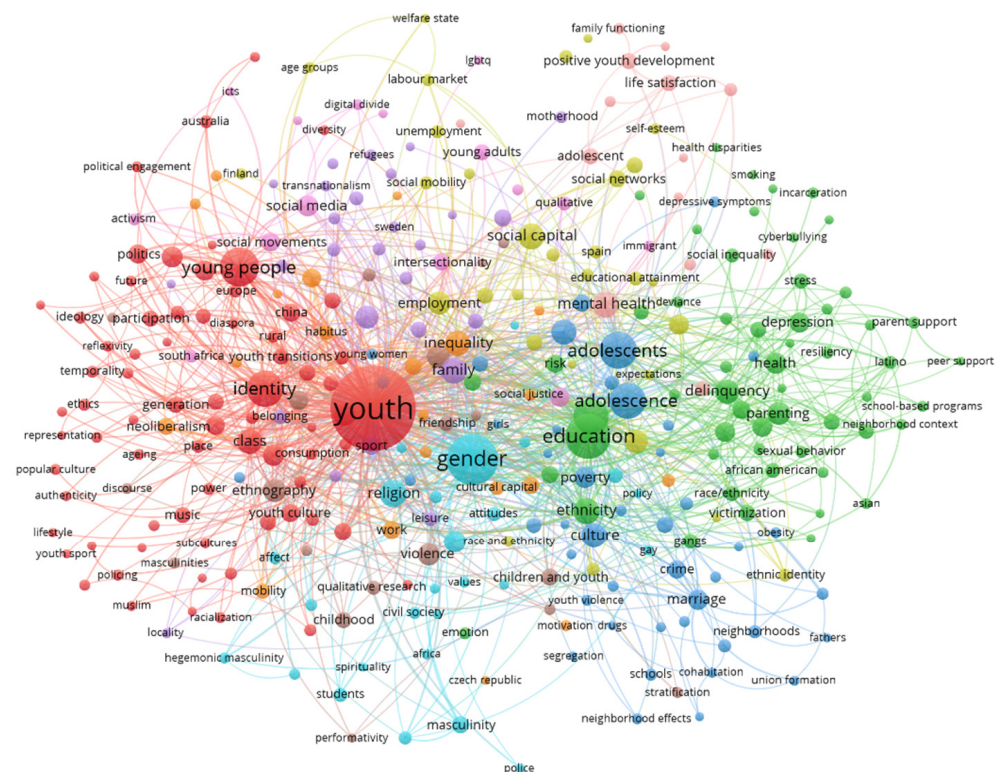

Figure 4. Keywords co-occurrences for the youth articles, 2010–2019.

4. Discussion

This longitudinal bibliometric analysis demonstrates a significant increase in the emergence of youth studies in sociological literature over the last decade, both in terms of

co-occurrences of keywords and link strings among keywords. Although certain youth-specific phenomena remain isolated in terms of raw numbers [47], youth studies as a whole remain a rapidly expanding field. Regarding the top 20 keywords, it is observed that new trends appear from one decade to another: if in 1990–1999, youth was followed by "children" and "family structure", the intervals 2000–2009 and 2010–2019 make gender the most popular topic in youth studies. "Children" reached 9th place in the 2000–2009 interval and 21st place between 2010–2019. Such a change coincides with the far-reaching changes in the social institution of the family, where the general progress of living conditions, together with the diminishing role of religion, especially among urban communities, causes the interest in having children to diminish considerably [1].

The order of the recurring words in this co-word analysis is quite suggestive, as it provides a visual basis for the theoretical discourse of "structure versus agency". Thus, the increased prominence of words such as "gender", "education", and "race" in sociological publications over the last two decades demonstrates that structural factors continue to be significant and relevant predictors in youth studies [7,13,14]. Of course this effect is largely generated because this analysis only preserved sociological articles, allowing for future bibliometric analyses of the emergence of youth in psychology or political science. The fact that discussions about adolescents' agency are almost absent from sociological literature is not necessarily surprising, as there are some explanations for this: "This construction of the adolescent as the 'self-guiding/self-governing subject', is principally shaped within psychological discourses. These discourses successfully articulated this truth of human motivations, behaviours and dispositions . . . " [31].

As can be seen, discussions on structural constraints remain relevant in youth studies, as confirmed by the 2010–2019 orange cluster on Bourdieu, inequality, and habitus. These words are frequently associated with social institutions, including family and phenomena that propagate structural inequalities, such as gender and ethnicity. Thus, the discussion of the "field" in Bourdieu's sense [16,17] remains relevant in explaining the inequalities that make social actors militate for superior positions in social hierarchies to which they have access.

To reiterate the argument mentioned in the introduction, this article aims to highlight potential new themes that emerged in the sociological literature related to youth studies between 1990 and 2019. Some clusters, such as the green cluster from the 2010–2019 interval, heavily incorporate concepts from the deviance field via words such as "depression", "delinquency", and "victimization", as well as the green cluster from the 2000–2009 interval, which contains words such as "violence", "mental health", and "suicide". According to the literature [14], a lack of opportunities, together with very limited possibilities for socio-professional advancement, could explain the co-word occurrences between words in the sphere of deviance and words referring to structural phenomena and belonging to different clusters, such as depression–gender; depression–culture, bullying–gender, bullying–ethnicity, etc.

This analysis highlights that certain academic topics within youth studies are still underdeveloped, and addressing these topics could provide a broader justification for the structural differences frequently debated in youth studies. For example, newly underdeveloped academic interests include words such as "intersectionality" and "LGBTQ" (pink cluster), given that they are in the same cluster as social-media-related topics.

As can be seen, various topics that started simply as niche literature have gained increasing importance over the years. For example, concepts such as "identity", "gender", and "class/social class" began as simple nodes in 1990–1999 but gained much more importance over the next two decades. As noted in the bibliometric analysis regarding NEET youth, emerging or declining themes that currently appear unstructured at the moment may achieve unprecedented relevance in the coming years [47]. Such emerging trends seem to be present in the 2010–2019 interval, where the rise of new media technologies is increasingly visible in youth studies. Thus, words such as "social media" and "digital activism" form a common cluster with "LGBTQ" and "intersectionality", highlighting how awareness

of one's sexuality and the ability to advocate for the protection of one's rights intersect with the growing interest in the role that social media and digital technologies are beginning to play in youth studies. Research topics in the LGBTQ field are gaining increasing interest in youth studies, and this is due to a growing awareness of the need for this topic in the sociological literature. As can be seen in Table 1, topics such as "sexuality" become more and more recurrent after 2000, so that the standard structural criteria—composed of education, race, and ethnicity—no longer fully explain the heterogeneity of youth in contemporary society. Thus, sexual orientation becomes a credible and coherent criterion for explaining inequalities in the field of youth studies, along with adjacent concepts in the field of delinquency, such as bullying and victimization.

As can be seen in other studies focused on bibliometrics [38], there has been an exponential increase in studies in recent decades, which confirms a growing interest in youth as both a social and a demographic category. This pattern is to be expected, given that youth studies is a growing academic field, the complexity of which is consistent with an increasing number of empirical articles that are being published.

However, there is a specific reason why the data obtained should be addressed carefully. Although the sociological significance of this subject is becoming increasingly apparent, this study only includes English language publications. Additionally, a recommendation for future studies focused on bibliometrics could include Scopus as a database for certain knowledge fields, given that it includes several academic fields under the umbrella of social science publications. In addition, future analyses could determine whether there are significant differences between author keywords and the Keywords Plus system, as other studies have investigated [48].

In conclusion, a bibliometric approach with longitudinal valences has the visible advantage of capturing the evolution of youth as a knowledge field over time. Such an approach is important because it shows how this topic has evolved over the years in the sociological literature. There are also some recurring limitations when using a bibliometric approach. For example, co-word analysis could have an increased impact if it were accompanied by other adjacent approaches, such as co-citation analysis or other bibliometric coupling features, such as the authors' country of origin.

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