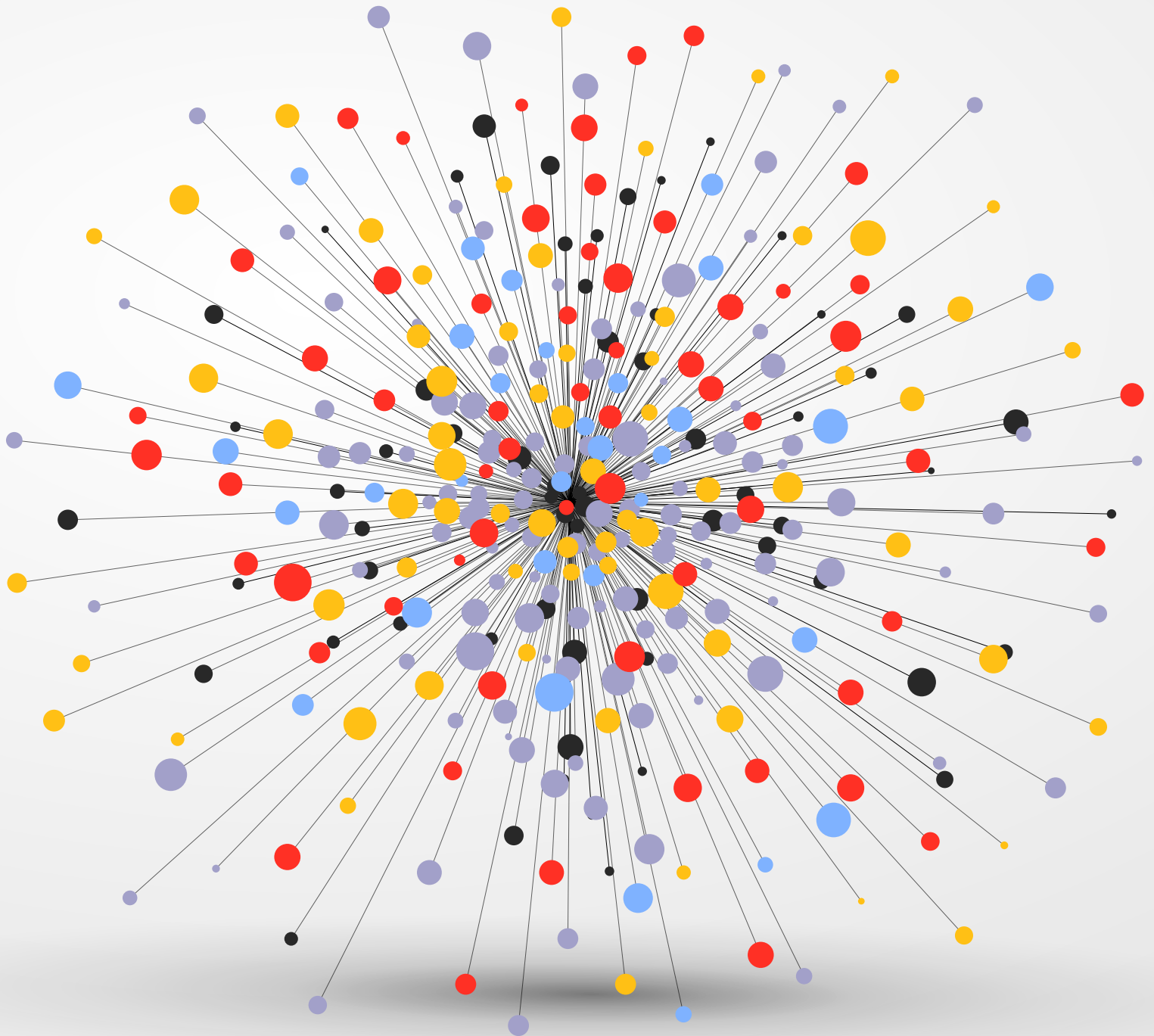




European Research Council
Established by the European Commission



Frontier Research on Diversity





In a nutshell

The European Research Council (ERC) encourages researchers and their teams to push the frontiers of knowledge to enrich our understanding of the world. One area gaining attention is gender and diversity, particularly given that various kinds of minorities are increasingly more visible in society and vulnerable to discrimination and harassment. Supporting researchers to push the boundaries of research in these areas can lead to transformative insights that pave the way for more inclusive societies.

The Gender and Diversity Working Group of the ERC's Scientific Council asked the European Research Council's Executive Agency to map the scope of gender and diversity research that the ERC supports. This factsheet offers a brief overview of the ERC's portfolio of projects on gender and diversity. It also includes highlights from a selected number of relevant projects across scientific domains.

Defining diversity in research

Researchers have become more aware of the complexities of societal structures in the last few decades and are in a unique position to contribute to the advancement of research on gender and diversity by exploring social and gender norms, cultural expectations and individual experiences. A diversity-oriented perspective calls for the need to carefully consider the experiences and views of marginalized groups, traditionally overlooked in scientific research, during the design of research projects. Factors such as sex/gender, race or ethnicity, culture or religion, disability, age, sexuality and gender identity- while not an exhaustive list of all social differentiation - often highlight deeply established structures of inequality and social-economic exclusion. These factors exert a significant influence on human behaviour which is often underestimated or overlooked if researchers do not explicitly account for them. Many studies demonstrate the importance of including sex, gender and a diversity analysis in a wide range of topics, often cutting across scientific disciplines. These studies range from climate change, marine science, clinical and health research to the societal impacts of engineering and advanced technology, among many others.


Taking account of sex, gender, age, cultural backgrounds and other dimensions of diversity when composing research questions and designing studies can broaden the frontiers of scientific knowledge and promote excellence. Incorporating factors such as sex/gender and the perspectives of different ethnic, religious, gender, age, etc. groups can prompt researchers to pose novel and innovative research questions. It can also result in findings that have more validity and applicability across the whole spectrum of society. A typical example is the need to integrate gender and diversity factors into clinical trials, i.e. when testing a drug for efficacy and safety. Collecting and analysing data in a way that it breaks it down between different sexes, genders, ethnicities or other groups, can improve the accuracy of results and facilitate the interpretation of data. It can also shed light on variability within studied phenomena and conditions that would remain unknown without explicit consideration of diversity.

Key concepts

Sex refers to the biological attributes that distinguish organisms as male, female and intersex, including chromosomes, gene expression, hormone levels and function and reproductive organs.

Gender refers to psychological factors, social norms and cultural expectations that shape attitudes, human behaviour, stereotypes, technologies and knowledge. Gender norms powerfully shape the family, the workplace, public institutions and economic structures.

Race and ethnicity (often used interchangeably) are considered social categories and key markers of group identity usually defined by a common language, ethnic or national origin, culture, beliefs

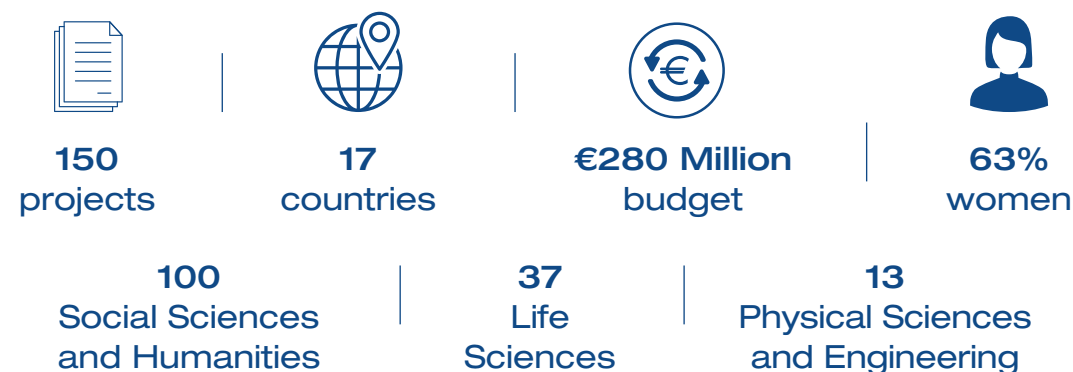


and customs and migration histories. Ethnic groups may form minorities distinguished from the majority population.

Other dimensions of diversity include age, religion, sexual identity and orientation, educational level, disability, language, geographic location, migration history, social and economic status, and many others.

Intersectionality describes how overlapping forms of discrimination or differences, which may be related to gender, sex, ethnicity, age, religion, socioeconomic status, sexuality, etc., may be more intensive and affect an individual or group.

Diversity in ERC projects



During the Horizon 2020 programme (2014-2020) and the first two years of Horizon Europe (2021-2022), the ERC has funded 150 projects that integrate a gender and diversity-oriented perspective within their research topics, questions and methodologies. These projects were identified and collected through a comprehensive search of keywords across the entire database of projects that have been completed or are ongoing. The following keywords were used: (in) equality, gender/sex, ethnicity, minorities, disability, bias, discrimination, diversity, migrants and immigration, identity, culture and human rights.

The selected projects include a wide range of scientific fields with many interdisciplinary projects. The vast majority of these projects are in the Social Sciences and Humanities (SH) domain, a significant number are in Life Sciences (LS) and a smaller number are in Physical Sciences and Engineering (PE): 100 from SH, 37 from LS and 13 from PE. There is a substantial variation of diversity issues and concerns in research projects across the three domains.

Most prominent keywords associated with ERC gender and diversity projects:



Gender and diversity across scientific domains

Topics of ERC projects related to gender and diversity:



The Social Sciences and Humanities domain


ERC projects with a diversity-oriented perspective within the SH domain have examined the social, psychological, economic and political factors shaping inter-ethnic relations and emergence of ethnic divisions. These projects explore, for example, how negative attitudes and stereotypes towards minorities are formed through cognitive processes; the role of dual identities among ethnic minority individuals in facilitating integration and inter-group relations; and the socioeconomic implications of ethnic segregation and inter-group discrimination in the labour market. Other interconnected projects focus on how workplaces shape ethnic stratification across different generations of immigrants.

A significant number of ERC-funded projects with a diversity perspective focus on immigration. These projects examine the causes and dynamics of intra-European and international migration, and how this influences citizens' political views and voting patterns. For example, the extent to which immigration affects the labour mobility of native workers; how political mobilization and grassroots movements challenge racial inequalities and the rise of populism and anti-Islamic discourse in European politics, among others.

ERC projects also inquire about whether immigration and the evolving composition of European societies negatively affect host communities, giving rise to segregation and conflict as well as how and why religious-based radicalization among native European youth of migrant background takes place. Altogether, these projects seek to contribute to the development of economic, educational and social policies that can alleviate tensions and promote integration. Several ERC-funded projects within the SH domain focus on gender related issues or incorporate a gender dimension in their research questions and methodology. These projects comparatively examine the effects of maternity leave policies on the labour market participation of women of child-rearing age; how different welfare state systems address gender inequalities (or fail to do so) and whether a high concentration of women in particular sectors leads to lower wages and reduced occupational prestige.

Exploring the causes of the gender gap in politics across different professions, other projects ask why women's careers in political office are shorter and less enduring than those of men; in what ways everyday sexist attitudes impede women's efforts to run for and win in public office and how political systems can become more inclusive.

Last but not least, ERC projects explore feminist political thought and discourses on women's rights in East Central Europe and the power, but also ambivalence of human rights, in debates around abortion in different countries.



ERC-funded projects with a diversity perspective also investigate domestic and gender-based violence in peace and in contexts of conflict. These projects inquire about the causes for high levels of domestic violence and gender discrimination in Europe, Africa, and elsewhere and how to tackle them through effective health policies. They also explore why cultural traditions that are harmful to women persist, such as child marriage and female genital mutilation.

At the crossroads of gender and ethnicity, ERC projects also explore how gender permeates political violence contexts and how political and domestic violence are inter-linked in the construction of male identity. Furthermore, they explore how gender is a crucial factor in building community resilience in peace-building and post-conflict conditions.

ERC projects with an intersectional approach to diversity examine gender inequalities in climate-induced migration and in ethnographic research on the delivery of maternity among migrant pregnant women in European peripheries. Similarly, these projects address multiple and intersectional inequalities: In what ways and to what extent do gender, class and racial disparities underpin the operation of digital platforms and what factors contribute to digital hate speech? How do children encode and transmit socially biased information, serving as the root for racial and gender discrimination? Does the European Union promote socio-legal advancements in LGBTI+ rights in member states confronted with rising populism and anti-gender backlash?


The Physical Sciences and Engineering (PE) domain


Within the PE domain, ERC projects with a diversity perspective prioritize the human factor in the development of cutting-edge technology and incorporate social concerns related to equality and fairness in machine learning. ERC-funded research, for example, has aimed to activate the human brain in order to enable amputees to perceive prostheses as integral parts of their bodies, thereby facilitating rehabilitation. Similarly, ERC projects have studied the brain dynamics of human learning in order to develop state-of-the-art human-computer interfaces capable of assisting paralysed people to regain control and communication. They also apply innovative methods to deliver personalised rehabilitation approaches for those suffering from neuromuscular impairment.

Alternatively, ERC projects in this domain address the potential for implicit bias in machine learning algorithms and seek to introduce linguistic diversity into the creation of algorithms; or to develop new methodologies and tools to reduce bias and polarization in online deliberation. These projects also aim to increase the exposure of users to diverse ideas and foster inclusive training datasets for artificial intelligence systems that can tackle digital hate and disinformation.

The Life Sciences (LS) domain

ERC projects within the LS domain explore a diversity perspective span from evolutionary biology, neuroscience and epidemiology to public health. A number of projects investigate the vulnerability of minorities and women and the higher incidence of specific health conditions among them. For example, these projects examine both epigenetic and environmental factors to understand why migrants from Sub-Saharan Africa are disproportionately affected by hypertension and they seek to understand how experiences of emotional distress trigger biological and psychological mechanisms that account for the high incidence of psychotic disorders among migrant and minority groups. The findings of such research hold the potential to reduce the risk of psychosis and improve poor mental health during adolescence.





ERC-funded research in this domain has also sought to determine the underlying mechanisms influencing immune responsiveness to vaccinations and how social, regional and cross-national income inequalities influence vaccine immunogenicity. Several research projects have also shed light on the striking inequalities between low- and high-income countries that shape women's vulnerability to breast cancer. ERC projects in the LS domain have also addressed the under-diagnosis of cardiovascular disease (CVD) in women. This stems from the distinct physiopathology between sexes, as well as from the under-representation of women in clinical studies. Another distinctive set of ERC projects focus on pregnancy, a period during which women are particularly vulnerable to certain health issues (i.e. preeclampsia, preterm birth). These projects explore the impacts of a pregnant women's obesity on fetal development and the next generation's health or seek to establish a standard for cancer care during pregnancy by simultaneously addressing the challenges for both the health of the fetus and the mother.

The impact of medications prescribed during pregnancy on young mothers and children and the risk of neurodevelopmental disorders, the neural behavioural adaptations to pregnancy and how pregnancy shapes information processing in the brain are topics explored in other ERC-funded projects.

Last but not least, ERC projects study the inter-generational transmission of childhood trauma on the child's brain linked to physical or sexual violence. These findings open new avenues for prevention and intervention strategies to tackle the perpetuation of poor health.


Selected projects incorporating gender and diversity analysis

A handful of ERC-funded projects exemplifying the incorporation of a gender and diversity-oriented approach are briefly described below.



The [INTEGRATOR project](#), led by PI Dirk Hovy, Associate Professor of computer science at Bocconi University (IT), is concerned with the systematic bias present in Artificial Intelligence tools, preventing these tools from reaching human-like performance. Current artificial intelligence-based language technologies are not intelligent enough to understand how words or phrases carry different meanings depending on social context. For instance, in slang used by young

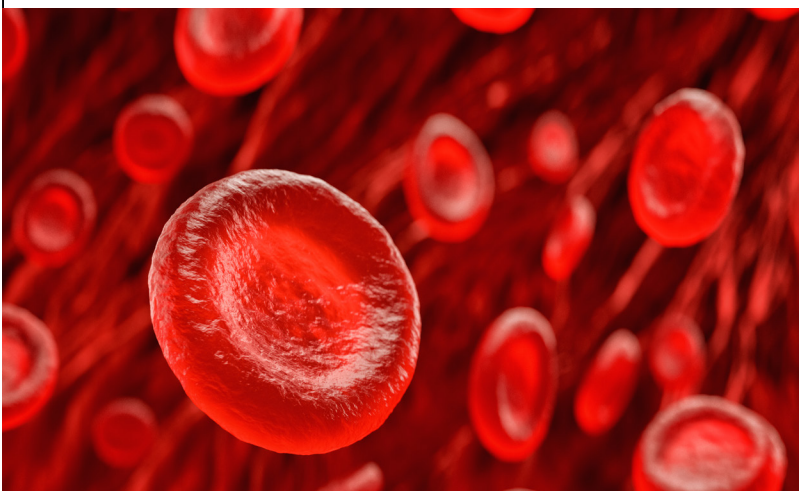
people, words like “sick” mean “great” or “cool”. In fact, demographic factors such as age, location, race or gender shape the way we speak. Machine translation, internet search, chatbots and smart assistants, however, are designed as if everyone communicates in the same way. This makes them less effective and embeds demographic biases that lead to racism, sexism and ageism. Dirk Hovy and his team seek to incorporate demographic factors into Natural Language Processing models. By collaborating with scholars in machine learning, sociolinguistics, sociology, demography, ethics and philosophy, they can examine and measure demographic bias. Their research findings will lay the foundations for systems capable of understanding a speaker's intent and adapting their language to the user to facilitate equal access to these vital, new technologies.



Adolescence is a crucial period of emotional and behavioural development during which most adult mental health problems first emerge. The [Resilience, Ethnicity, and Adolescent Mental Health \(REACH\)](#) study funded by the ERC examined the prevalence, nature, and progression of mental health challenges among young people from diverse social and ethnic backgrounds in inner-city areas. Led by Professor Craig Morgan and colleagues at the ESRC Centre



for Society and Mental Health, King's College London (UK), they studied mental health, risk and resilience factors by recruiting, assessing and following a large number of ethnically diverse, inner-city adolescents – one of the largest samples of its kind. In order to understand the developmental origins of psychosis, the research examined a) psychotic and other experiences of emotional distress, b) socio-environmental risks, and c) psychological and biological mechanisms. The project brought together over 4,000 young people from twelve secondary schools in south London, as well as community partners, in order to produce and share research results as well as engage with interested groups and the general public.



Cardiovascular disease (CAD) is responsible for 51% of deaths in women and 42% of deaths in men across Europe. Women account for a greater proportion of increased hospitalizations for coronary artery disease at younger ages. Missed and delayed diagnoses are more common in women than men, likely due to sex-based differences in CAD pathophysiology. While men often experience atherosclerotic plaque rupture as the underlying mechanism for myocardial

infarction, women more frequently suffer from plaque erosion. There is limited knowledge about the mechanisms explaining sex-based differences in CAD and plaque erosion. This is due, in part, to the underrepresentation of women in clinical trials for CAD and biobank studies. The [UCARE project](#) (Uncovering the epigenetic signature of female-specific biological networks and key driver genes of coronary artery disease), led by Professor Hester den Ruijter at UMC Utrecht (NL), examined sex-specific mechanisms driving atherogenesis and identified important sex differences in gene regulation related to atherosclerosis with the goal to identify target genes that prevent the development of symptomatic eroded fibrous lesions. The project seeks to close the knowledge gap on atherosclerosis in women and promote health equity between women and men with coronary artery disease. During the last decade, European governments have implemented a variety of asylum and integration policies without sufficient evaluation of their impact.

The [INTEGRATE project](#) (Shedding light on the potential of asylum and integration policies in Europe) led by Professor Dominik Hangartner at ETH Zurich (CH), addresses this gap by examining how key parameters in the asylum process influence the integration of refugees and their families in Denmark, France, Germany, Sweden and Switzerland. The project also investigates whether effective integration programmes can alleviate hostility and moderate support for extreme-right parties in host communities by leveraging policy-induced variation in integration success.



The project's findings show that ethnic residential networks transmit information about employment opportunities and play an important role in facilitating refugee integration. They also find that comprehensive language training programmes since 2015 in Germany have contributed to increased refugee employment. The research extends to labour market access, welfare support and integration measures in Switzerland and France. Through a large-scale randomized control trial, it seeks to evaluate the benefits of data-driven, algorithmic geographic placement to optimize employment outcomes. The project findings contribute to the design of asylum policies that promote integration and mitigate conflicts between refugees and native communities.

LGBTQ+ individuals are increasingly more visible in society, and they can be vulnerable to discrimination and harassment. While these stressful experiences are well documented, little is known about the socioeconomic and family outcomes of sexual minorities.



The [MINEQ project](#) (Sexual Minorities and Inequality of Opportunity) led by Diederik Boertien at the Centre for Demographic Studies at the Autonomous University of Barcelona (ES), draws on the data of several large-scale representative surveys to shed light on the inequality of opportunity experienced by sexual minorities. It explores social mobility patterns and partnering relations, paying attention to often-overlooked groups like bisexuals and individuals identifying as sexual minorities from

lower socioeconomic backgrounds. The second part of the project focuses on the mechanisms hindering sexual minorities from attaining outcomes in life. Can gender egalitarianism reduce inequality of opportunity experienced by sexual minorities? How big is the impact of hate crimes and legislation on the family life of sexual minorities? Contextual information on regional differences in attitudes, hate crimes and laws are compiled and connected to surveys to document their relationship to socioeconomic achievements and the family lives of sexual minorities.

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