

Exploring Global Family Change Through Over a Million Family Pictures

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1 Introduction

Families worldwide are undergoing significant changes, marked by a de-standardisation of the traditional life course (Lesthaeghe, 2014; Van De Kaa, 1987). These changes have led to lower fertility rates and the emergence of new family structures, characterised by a shift towards progressiveness and individualism, resulting in decreased marriage and parenthood rates, as well as an increase in single-parent families and greater ethnic diversity (Cherlin, 2010; Teachman et al., 2000). There are exceptions to this trend; for example, fertility transitions in sub-Saharan Africa are stalling and not following the same pace as those in other developing regions; however, it is still expected to decrease (Shapiro and Gebreselassie, 2008; Casterline and El-Zeini, 2022). The legalisation of same-sex marriage in over 30 countries, including the Netherlands (2000), England and Wales (2013), and the US (2015), has given rise to sexual- and gender-minority families, which are increasingly accepted Reczek (2020). This global demographic and family change is characterised by falling fertility rates, smaller family and household sizes, decreasing marriage rates, and increasing age at marriage and first birth (Teachman et al., 2000). New family forms, such as LGBTQ+ families (Reczek, 2020) and non-married cohabiting couples (Teachman et al., 2000), are gaining acceptance and prevalence.

We propose a novel way of measuring the evolution of the cultural imagination of the family via the analysis of the biggest commercial corpus of images, sold worldwide for mass-media consumption. The role of mass media in shaping social behaviours and influencing populations has long been theorised, going back to mid-century critical theory (Adorno and Horkheimer, 1979; Debord and Nicholson-Smith, 1994). Recent empirical work supports the idea that mass media exposure alters demographic behaviours (Barber and Axinn, 2004; La Ferrara et al., 2012; Bönisch and Hyll, 2023). Our work aims to measure the evolution of the cultural imagination of the family by analysing a vast commercial corpus of images. Our work builds on these ideas as well as on recent work in computational social sciences, demonstrating how content analysis of images can be used for social science research (Schwemmer et al., 2023). Our objective is to map out how families have been portrayed in mass media and how this portrayal varies across counties and changes over time.

We aim to answer questions about the interplay of demography and culture by analysing newly assembled data from the biggest commercial provider of stock images, Getty Images Holdings, Inc.. Specifically, we investigate how the idea of “family” as consumed through mass media changes over time and whether the families depicted in these images reflect the actual families surrounding us. Additionally, we explore how these depicted families differ across countries and whether the families in these images precede, go along with, or follow demographic trends.

2 Data and Methods

Our dataset, compiled in collaboration with Getty Images Holdings, Inc., the world’s leading provider of stock images and editorial photography with over 477 million media assets, focuses on three main markets: creative professionals, the media, and corporate clients. It encompasses all 1,588,019 images available on their

platform from 2005 to 2022, tagged under “families” for creative use. Each image typically includes 30 to 75 descriptive tags, a crucial service offered by Getty for connecting image creators and buyers. For every Getty Images picture in our dataset, we can access essential information such as the master ID, upload country, upload year, caption, terms and tags, image URL, and sales data from 2005 to 2022. We aim to analyse this data longitudinally, examining how the market share of specific pictures changes over time. Additionally, we are complementing the analysis with data from international surveys such as the World Values Survey, Gallup, and Ipsos Mori, as well as the Demographic Health Survey for low and middle-income countries to study intentions, desires, and opinions regarding families. This will allow us to analyse differences between the actual composition of families in a given country and their representation in the images purchased by media producers in that country. It will also enable us to model the demographic and value determinants of country-level demand for family characteristics in images, such as family size, queer families, ethnicity, and the gender of family members.

3 Preliminary Results

Figure 1 displays the amount of family images created (uploaded) and purchased (downloaded) by different countries. The data reveals that the majority of these photos originate in northern regions worldwide but are distributed and sold globally. Europe stands out as the largest producer, with an increasingly significant volume of photos uploaded from Asia, nearly matching that of the American continent. Additionally, our analysis unveils year-to-year variations. In 2022, Thailand emerges as the leading producer in Asia, while China becomes the second-largest global buyer. Notably, the United Arab Emirates also contributes to the diverse geographical sources of these images.

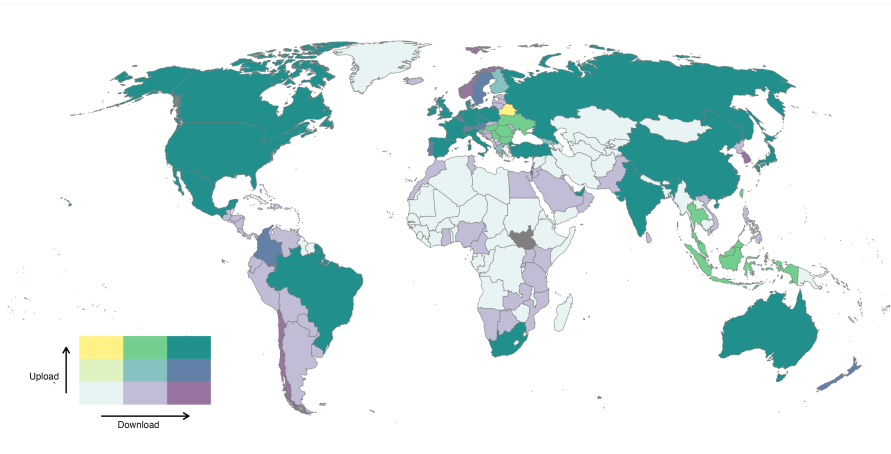


Figure 1: Bivariate Map of Download and Upload Counts (2005-2022) for Family Images on Getty Images.

Figure 2 provides a classification of images featuring children on Getty Images. These pictures are categorised into three groups: those with one child, two children, and more than three children (with a total of 10 children in the pictures). The data reveals that approximately 75% of the global market purchases images with one child, while 21% opt for images with two children. The remaining 4% is dedicated to families with more than three children. In the figure, we have also included the average Total Fertility Rate at the global level, which is slightly higher than 2 children per woman. We would have expected to see more images of two children being sold. Moreover, Figure 3 illustrates that images featuring daughters are sold more frequently than images featuring sons across all five continents. This trend might be related to marketing choices (Durante et al., 2015).

Figure 4 displays the global distribution of “queer” family images (uploaded and downloaded), with notable gaps in Africa. In Figure 5, we break down the presence of “queer” in family images by continent. The trend

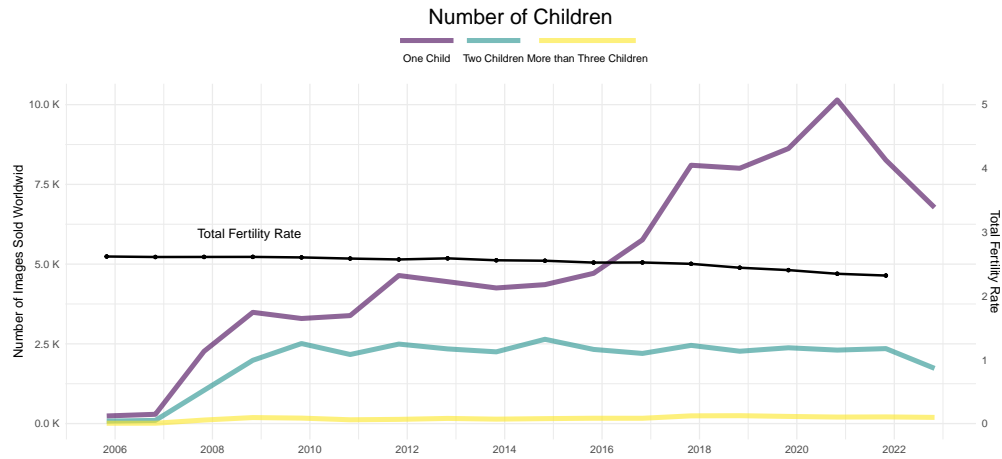


Figure 2: Classification of Family Images Featuring Children on Getty Images, illustrating the distribution of images with varying numbers of children (ranging from one to two and more than three) from 2005 to 2022. The Getty Images data is compared with the global average Total Fertility Rate from 2005 to 2021.

reveals that the increased consumption of queer family images began in the Americas in 2015, spreading to Europe, Oceania, and more gradually to Asia in the 2020s. Remarkably, there was a significant surge in the representation of queer families in 2016, following the U.S. Supreme Court’s decision to legalise same-sex marriage in all fifty states. Despite a brief dip in 2018, the purchase of “queer” family images continued to rise at an accelerated pace, extending into 2022.

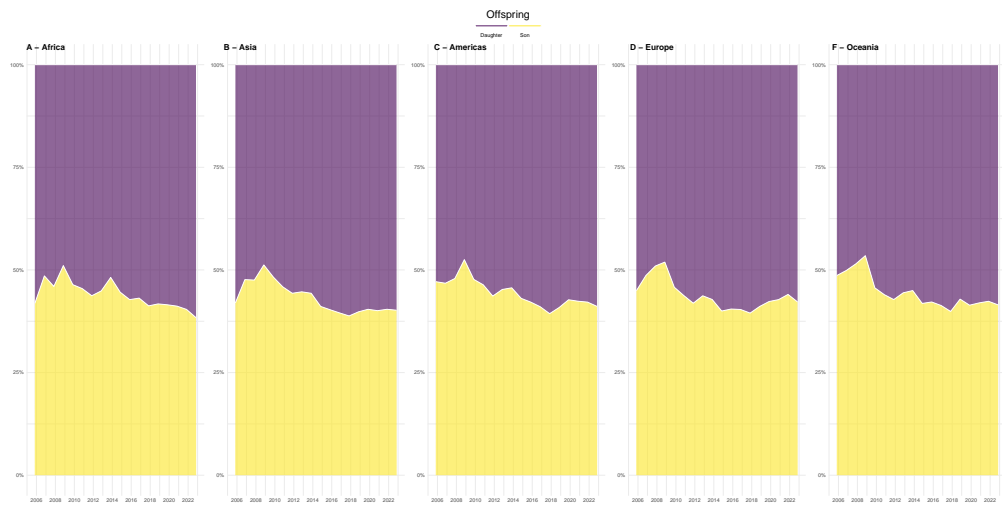


Figure 3: Classification of Family Images Featuring Children on Getty Images, illustrating the distribution of children in pictures by their gender (daughter or son) and market share by continent from 2005 to 2022.

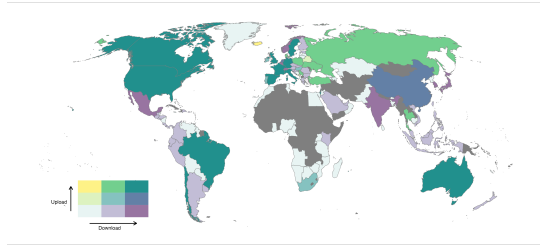


Figure 4: Bivariate Map of Download and Upload Counts (2005-2022) for Queer Family Images on Getty Images.

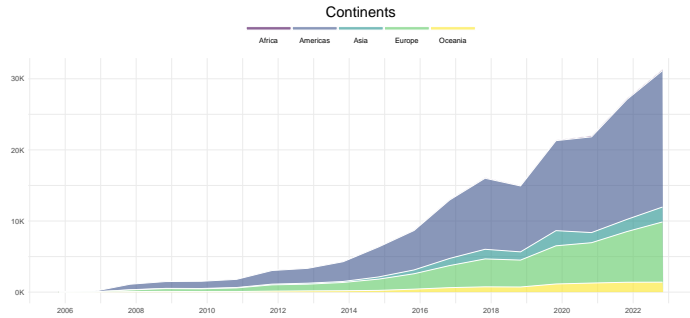


Figure 5: Count of Pictures Sold (2005-2022) Depicting Queer Families in 'Family' Images on Getty Images, Sorted by Continent.

4 Next Steps

Additional analysis will involve creating profiles for each country based on family characteristics, including one-parent families, couples, couples with children, and multi-generational families. We will further enhance these profiles by considering additional factors such as heterosexual and “queer” families, as well as ethnicity. This expanded analysis will place particular emphasis on the portrayal of fathers and mothers and their involvement in various activities with their children.

Furthermore, we will establish connections between country-level demographic and value characteristics to clarify the demand for images featuring diverse family characteristics using multivariate time series analysis.

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