

1. Mark your confusion.
2. Show evidence of a close reading.
3. Write a 1+ page reflection.

Most Work Is New Work, Long-Term Study of U.S. Census Data Shows

Source: Peter Dizikes, MIT News, April 1, 2024

In 1900, Orville and Wilbur Wright listed their occupations as “Merchant, bicycle” on the U.S. census form. Three years later, they made their famous first airplane flight in Kitty Hawk, North Carolina. So, on the next U.S. census, in 1910, the brothers each called themselves “Inventor, aeroplane.” There weren’t too many of those around at the time, however, and it wasn’t until 1950 that “Airplane designer” became a recognized census category.

Distinctive as their case may be, the story of the Wright brothers tells us something important about employment in the U.S. today. Most work in the U.S. is new work, as U.S. census forms reveal. That is, a majority of jobs are in occupations that have only emerged widely since 1940, according to a major new study of U.S. jobs led by MIT economist David Autor.

“We estimate that about six out of 10 jobs people are doing at present didn’t exist in 1940,” says Autor, co-author of a newly published paper detailing the results. “A lot of the things that we do today, no one was doing at that point. Most contemporary jobs require expertise that didn’t exist back then and was not relevant at that time.”

This finding, covering the period 1940 to 2018, yields some larger implications. For one thing, many new jobs are created by technology. But not all: Some come from consumer demand, such as health care services jobs for an aging population.

On another front, the research shows a notable divide in recent new-job creation: During the first 40 years of the 1940-2018 period, many new jobs were middle-class manufacturing and clerical jobs, but in the last 40 years, new job creation often involves either highly paid professional work or lower-wage service work.

Finally, the study brings novel data to a tricky question: To what extent does technology create new jobs, and to what extent does it replace jobs?

The paper, “[New Frontiers: The Origins and Content of New Work, 1940-2018](#),” appears in the *Quarterly Journal of Economics*. The co-authors are Autor, the Ford Professor of Economics at MIT; Caroline Chin, a PhD student in economics at MIT; Anna Salomons, a professor in the School of Economics at Utrecht University; and Bryan Seegmiller SM ’20, PhD ’22, an assistant professor at the Kellogg School of Northwestern University.

“This is the hardest, most in-depth project I’ve ever done in my research career,” Autor adds. “I feel we’ve made progress on things we didn’t know we could make progress on.”

“Technician, fingernail”

To conduct the study, the scholars dug deeply into government data about jobs and patents, using natural language processing techniques that identified related descriptions in patent and census data to link innovations and subsequent job creation. The U.S. Census Bureau tracks the emerging job descriptions that respondents provide — like the ones the Wright brothers wrote down. Each decade’s jobs index lists about 35,000 occupations and 15,000 specialized variants of them.

Many new occupations are straightforwardly the result of new technologies creating new forms of work. For instance, “Engineers of computer applications” was first codified in 1970, “Circuit layout designers” in 1990, and “Solar photovoltaic electrician” made its debut in 2018.

“Many, many forms of expertise are really specific to a technology or a service,” Autor says. “This is quantitatively a big deal.”

He adds: “When we rebuild the electrical grid, we’re going to create new occupations — not just electricians, but the solar equivalent, i.e., solar electricians. Eventually that becomes a specialty. The first objective of our study is to measure [this kind of process]; the second is to show what it responds to and how it occurs; and the third is to show what effect automation has on employment.”

On the second point, however, innovations are not the only way new jobs emerge. The wants and needs of consumers also generate new vocations. As the paper notes, “Tattooers” became a U.S. census job category in 1950, “Hypnotherapists” was codified in 1980, and “Conference planners” in 1990. Also, the date of U.S. Census Bureau codification is not the first time anyone worked in those roles; it is the point at which enough people had those jobs that the bureau recognized the work as a substantial employment category. For instance, “Technician, fingernail” became a category in 2000.

“It’s not just technology that creates new work, it’s new demand,” Autor says. An aging population of baby boomers may be creating new roles for personal health care aides that are only now emerging as plausible job categories.

All told, among “professionals,” essentially specialized white-collar workers, about 74 percent of jobs in the area have been created since 1940. In the category of “health services” — the personal service side of health care, including general health aides, occupational therapy aides, and more — about 85 percent of jobs have emerged in the same time. By contrast, in the realm of manufacturing, that figure is just 46 percent.

Differences by degree

The fact that some areas of employment feature relatively more new jobs than others is one of the major features of the U.S. jobs landscape over the last 80 years. And one of the most striking things about that time period, in terms of jobs, is that it consists of two fairly distinct 40-year periods.

In the first 40 years, from 1940 to about 1980, the U.S. became a singular postwar manufacturing powerhouse, production jobs grew, and middle-income clerical and other office jobs grew up around those industries.

But in the last four decades, manufacturing started receding in the U.S., and automation started eliminating clerical work. From 1980 to the present, there have been two major tracks for new jobs: high-end and specialized professional work, and lower-paying service-sector jobs, of many types. As the authors write in the paper, the U.S. has seen an “overall polarization of occupational structure.”

That corresponds with levels of education. The study finds that employees with at least some college experience are about 25 percent more likely to be working in new occupations than those who possess less than a high school diploma.

“The real concern is for whom the new work has been created,” Autor says. “In the first period, from 1940 to 1980, there’s a lot of work being created for people without college degrees, a lot of clerical work and production work, middle-skill work. In the latter period, it’s bifurcated, with new work for college graduates being more and more in the professions, and new work for noncollege graduates being more and more in services.”

Still, Autor adds, “This could change a lot. We’re in a period of potentially consequential technology transition.”

At the moment, it remains unclear how, and to what extent, evolving technologies such as artificial intelligence will affect the workplace. However, this is also a major issue addressed in the current research study: How much does new technology augment employment, by creating new work and viable jobs, and how much does new technology replace existing jobs, through automation?

Possible Response Questions

- What are your thoughts about the evolution of jobs? Explain.
- Did something in the article surprise you? Discuss.
- Pick a word/line/passage from the article and respond to it.
- Discuss a “move” made by the writer in this piece that you think is good/interesting. Explain.