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How Aligned is Career and Technical Education to Local Labor Markets?



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What we wanted to find out...

1. To what extent do *national* CTE course-taking patterns reflect the distribution of jobs across fields and industries?
2. To what extent is CTE course-taking linked to *local* employment and industry wages?
3. How do patterns of CTE course-taking differ by race and gender?

• OUR APPROACH

- Data on CTE course-taking come from the High School Longitudinal Survey (HSLs).
- Data on employment and wages come from the Bureau of Labor Statistics (BLS).
- To connect these data sources, we assigned each of the 459 occupations in the BLS classification system to one of the sixteen CTE career clusters. (For example, we assigned the BLS occupation “Food Scientists and Technologists” to the “Agriculture, Food & Natural Resources” cluster.)
- This allowed us to calculate employment shares and average wages for each cluster, so we could compare the distribution of course-taking to the distribution of jobs – both nationally and at the local level.

Just in case you need a reminder...

AFNR Agriculture, Food & Natural Resources

AC Architecture & Construction

AV Arts, A/V Technology & Communications

BM Business Management & Administration

ED Education & Training

FIN Finance

GOV Government & Public Administration

HS Health Science

HOSP Hospitality & Tourism

HUM Human Services

IT Information Technology

LAW Law, Public Safety, Corrections
& Security

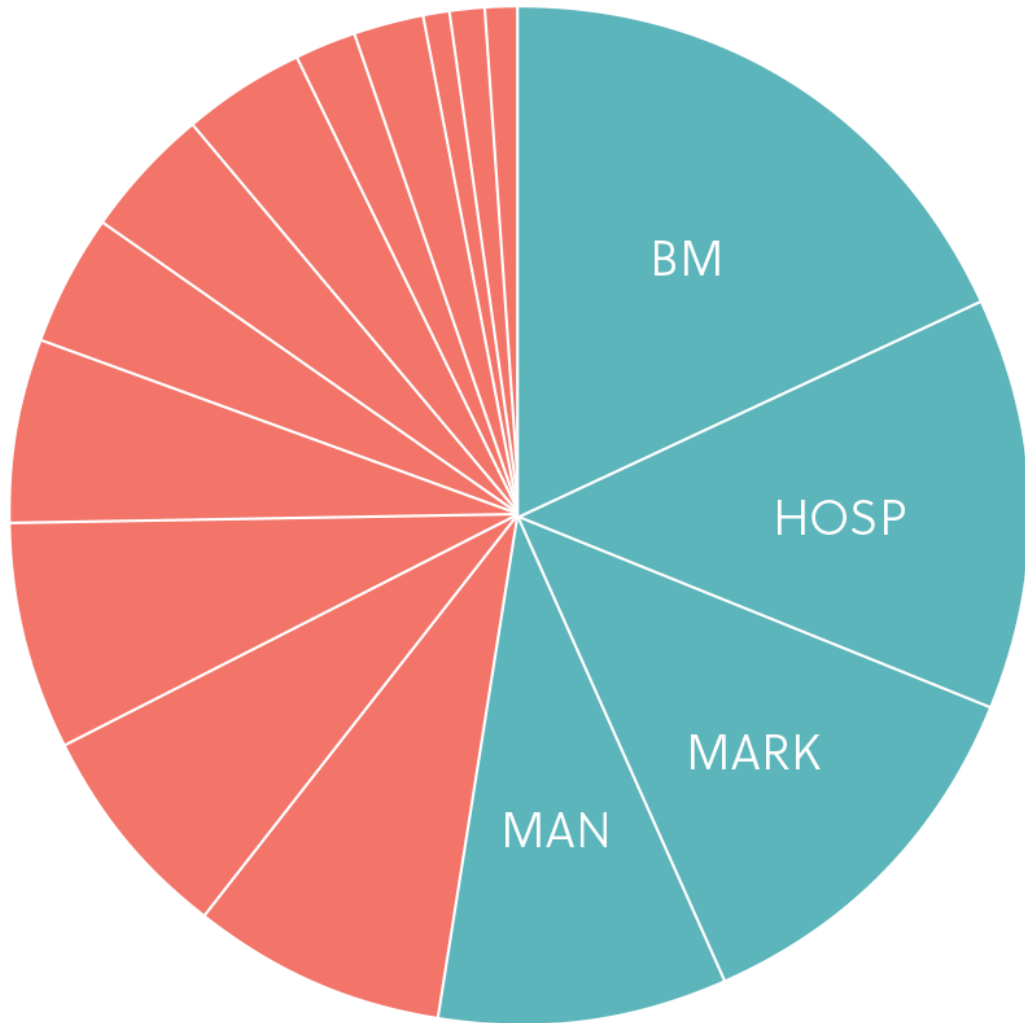
MAN Manufacturing

MARK Marketing

STEM Science, Technology, Engineering
& Mathematics

TRAN Transportation, Distribution
& Logistics

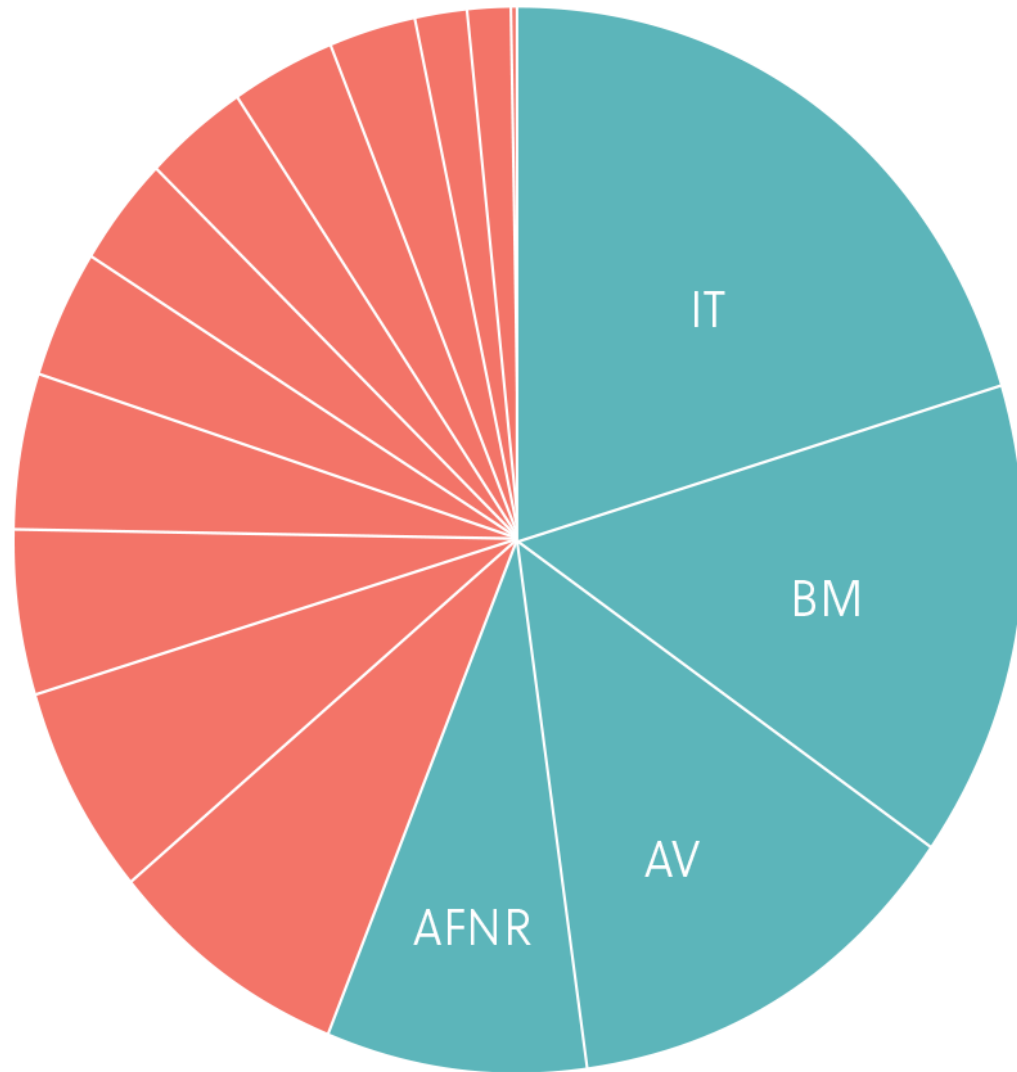
FIGURE 1 Half of the jobs in the U.S. are in one of four fields.*



| | | | |
|------|-------|------|------|
| BM | 18.0% | FIN | 3.9% |
| HOSP | 12.5% | LAW | 3.7% |
| MARK | 11.6% | HUM | 3.4% |
| MAN | 8.9% | IT | 2.0% |
| TRAN | 8.2% | STEM | 1.5% |
| HS | 7.2% | AV | 1.4% |
| ED | 6.8% | AFNR | 1.0% |
| AC | 6.2% | GOV | 0.8% |

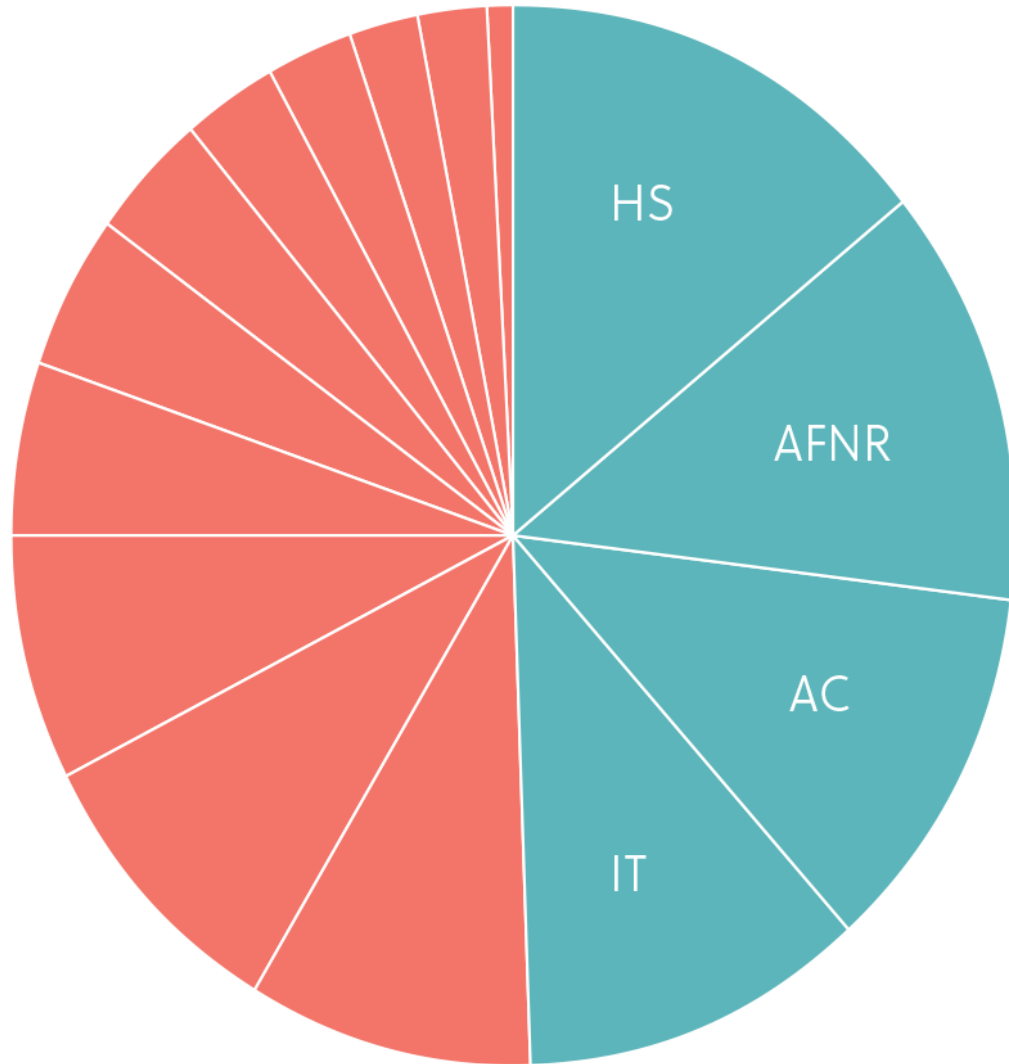
*Individual percentages may not sum to 100 percent due to inconsistent reporting for some BLS occupations.

FIGURE 2 Nationally, four fields account for over half of CTE course-taking.



| | | | |
|------|-------|------|------|
| IT | 19.3% | LAW | 3.7% |
| BM | 14.0% | TRAN | 3.4% |
| AV | 12.4% | FIN | 3.3% |
| AFNR | 8.7% | MAN | 3.3% |
| AC | 7.9% | MARK | 3.0% |
| HS | 7.0% | HUM | 2.7% |
| HOSP | 5.1% | ED | 1.5% |
| STEM | 4.7% | GOV | 0.1% |

FIGURE 3 **Four fields account for approximately half of CTE concentrations.**



| | | | |
|------|-------|------|------|
| HS | 14.4% | STEM | 4.8% |
| AFNR | 12.8% | HUM | 4.0% |
| AC | 11.3% | MAN | 3.0% |
| IT | 11.2% | MARK | 2.7% |
| AV | 9.0% | ED | 2.2% |
| BM | 8.9% | LAW | 2.2% |
| TRAN | 7.5% | FIN | 0.8% |
| HOSP | 5.2% | GOV | 0.0% |

FIGURE 6 In most fields, students are more likely to take related CTE coursework when there are more local jobs.

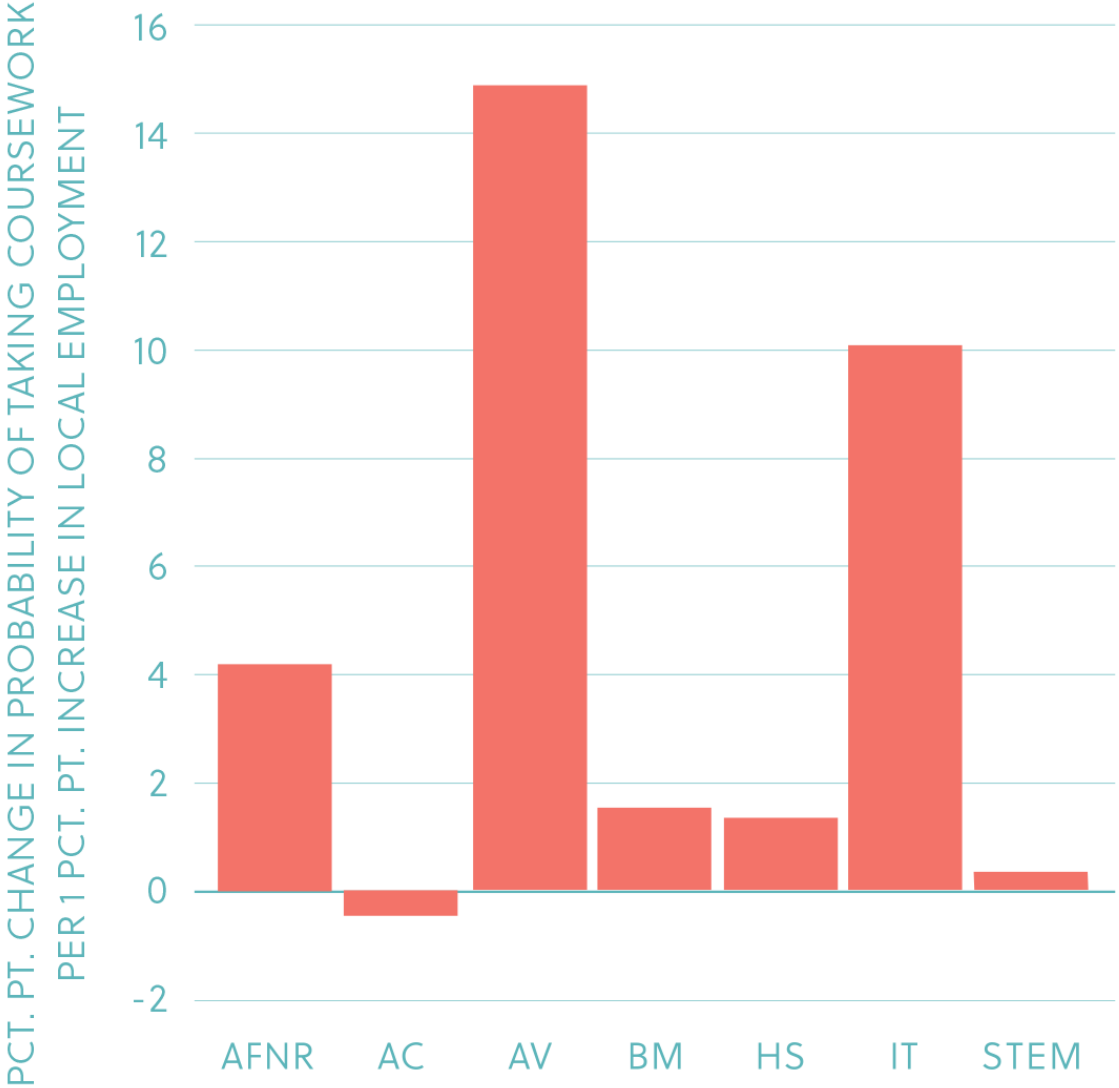


FIGURE 8 In most fields, students are less likely to take related CTE coursework when local industry wages are higher.

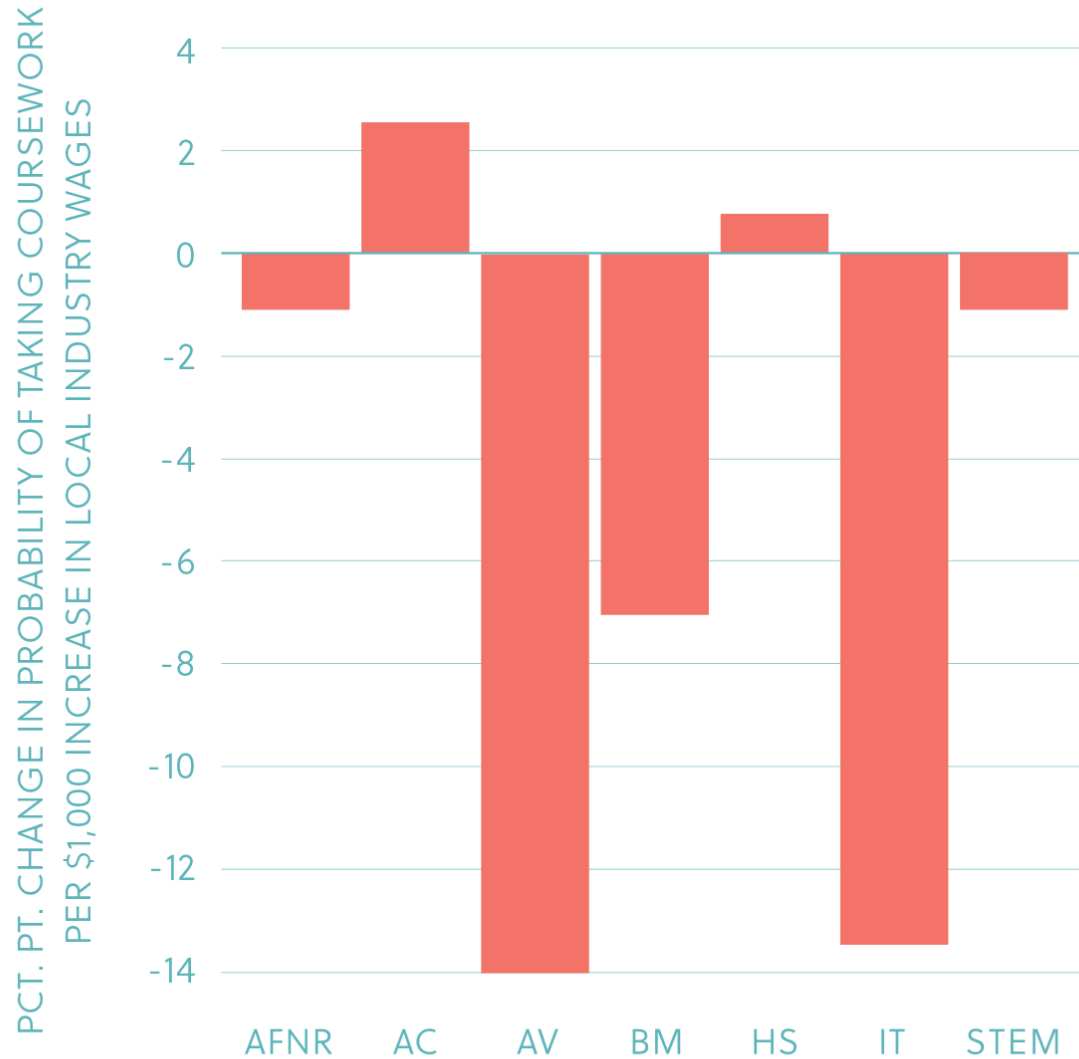


FIGURE 11 Female students are more likely to concentrate in Health Science and Human Services, while male students are more likely to concentrate in IT, STEM, and Architecture & Construction.

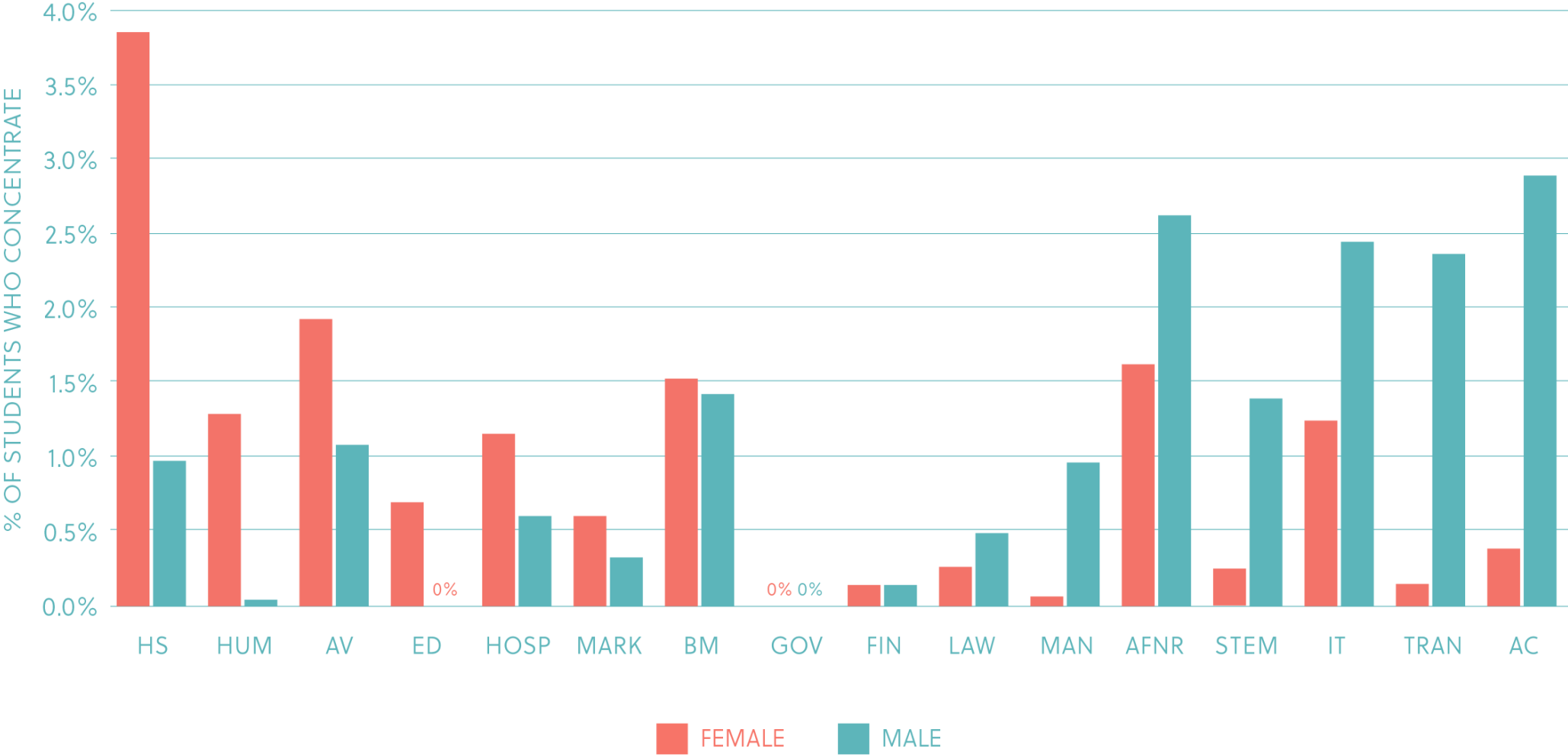
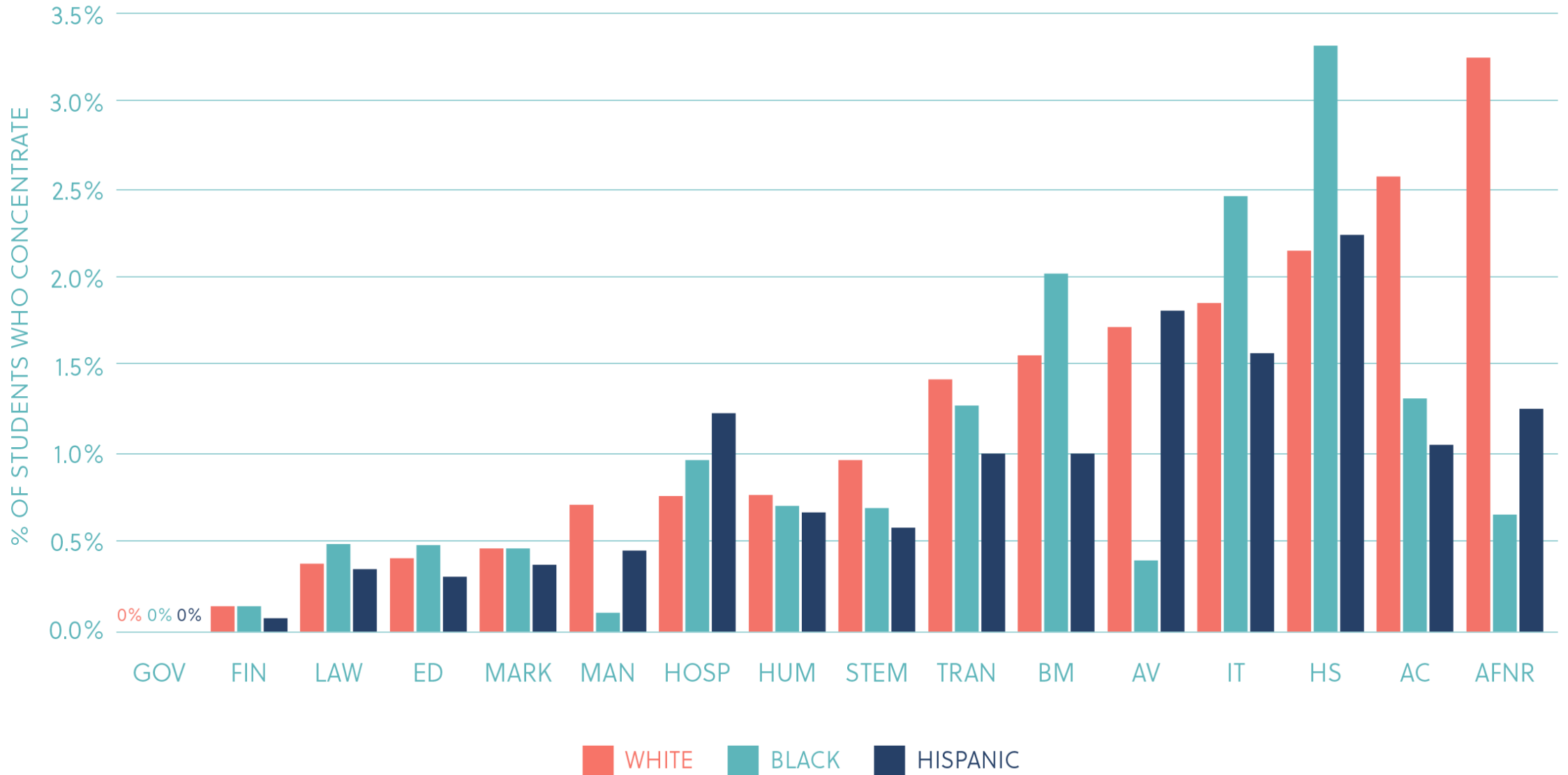


FIGURE 13 **White, black, and Hispanic students exhibit different patterns of CTE concentration.**

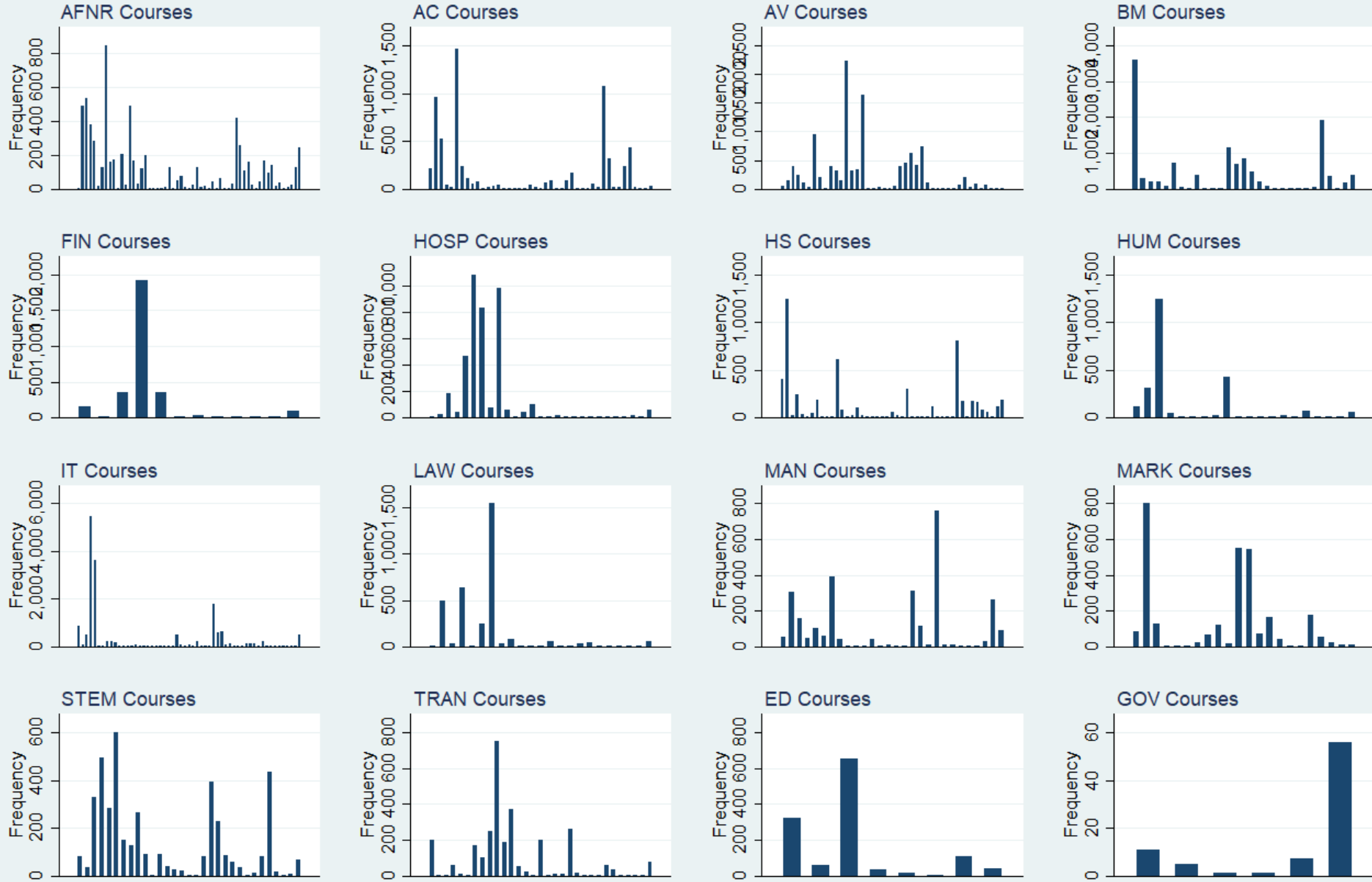


Caveats

- Older data--story could be different now
- Career clusters could mask differences by program level
- Course codes are sometimes problematic
- States define concentration differently
- Results reflect both students' decisions about which courses to take *and* districts' decisions about which courses to offer.

Figure 1

HS CTE Coursetaking by SCED Code



Takeaways

- 1. There is significant potential for greater “alignment” in most fields.**
- 2. At least some local alignment is occurring, but we don’t know why.**
- 3. If the goal is to connect kids with higher-paying jobs, we have some work to do.**
- 4. The CTE community needs a clearer definition of alignment.**
- 5. Some historical inequities persist, but there’s no evidence of “tracking.”**