



**NEW ZEALAND
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Gender and ethnic pay gaps: An industry level portrait for New Zealand

Commissioned by the Ministry for Women

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Disclaimer

These results are not official statistics. They have been created for research purposes from the Integrated Data Infrastructure (IDI) and Longitudinal Business Database (LBD) which is carefully managed by Stats NZ. For more information about the IDI and LBD please visit <https://www.stats.govt.nz/integrated-data/>.

The results are based in part on tax data supplied by Inland Revenue to Stats NZ under the Tax Administration Act 1994 for statistical purposes. Any discussion of data limitations or weaknesses is in the context of using the IDI for statistical purposes, and is not related to the data's ability to support Inland Revenue's core operational requirements.



Research aims

- Aim 1: Estimation of gender, ethnic, and intersectional (gender-ethnic) pay gaps by industry in New Zealand over 2016 to 2022, using survey and administrative data
- Aim 2: Exploration of structural and contextual drivers of pay gaps
- Building on previous work on gender (Pacheco et al., 2019) and ethnic (Cochrane & Pacheco, 2022) pay gaps, our contribution is focus on *industry level*, exploration of an *administrative data source*, and examination of *intersectional pay gaps*
- This presentation reports results for:
 - *Gender pay gap*: women vs. men
 - *Māori pay gap*: Māori vs. Europeans
 - *Pacific pay gap*: Pacific vs. Europeans
 - *Asian pay gap*: Asians vs. Europeans



Data sources

| Household Labour Force Survey | Inland Revenue administrative data |
|---|--|
| <ul style="list-style-type: none">• Primary data source, used in previous pay gap research• June quarter HLFS 2016-2022• Collects data on <i>hours worked</i>✓ Detailed info on hourly earnings and characteristics of individual, household, and job✗ Relatively small sample size limits ability to do disaggregated analyses | <ul style="list-style-type: none">• Exploratory data source, not previously used to estimate pay gaps• Population-wide administrative data for June quarter 2021• Captures data on <i>hours paid</i> (only recently added)✓ Detailed disaggregated analyses are possible✗ Hours data only for recent years, only ~40% employee coverage, large firms over-represented✗ Number of explanatory variables more limited than HLFS |



Variables and sample selection

- Variables defined the same in HLFS and IR:
 - *Pay*: total real hourly earnings
 - *Industry*: industry of main job at level 1 of ANZSIC (collapsed to 14 industries)
 - *Gender*: male or female
 - *Ethnicity*: administrative prioritisation into mutually-exclusive categories
Māori > Pacific > Asian > MELAA > Other > European
- Sample selection:
 - Paid employees aged 16 to 64
 - Trim top and bottom 1% of hourly earnings distribution
- In HLFS, to mitigate small cell sizes:
 - Pool data over two years – 2016/17, 2017/18, 2018/19, 2019/20, 2020/21, 2021/22
 - Collapse 19 ANSZIC codes to 14 industry groupings



Industry variable

| | ANZSIC level 1 | | Collapsed to 14 industries |
|----|---|----|----------------------------|
| 1 | Agriculture, Forestry, and Fishing | 1 | Agriculture |
| 2 | Mining | | |
| 3 | Manufacturing | 2 | Manufacturing |
| 4 | Electricity, Gas, Water and Waste Services | 3 | Construction |
| 5 | Construction | | |
| 6 | Wholesale Trade | 4 | Wholesale |
| 7 | Retail Trade | 5 | Retail |
| 8 | Accommodation and Food Services | 6 | Hospitality |
| 9 | Transport, Postal and Warehousing | 7 | Logistics |
| 10 | Information Media and Telecommunications | 8 | Media & Finance |
| 11 | Financial and Insurance Services | | |
| 12 | Rental, Hiring and Real Estate Services | | |
| 13 | Professional, Scientific and Technical Services | 9 | Professional Services |
| 14 | Administrative and Support Services | 10 | Administrative Services |
| 15 | Public Administration and Safety | 11 | Public Administration |
| 16 | Education and Training | 12 | Education |
| 17 | Health Care and Social Assistance | 13 | Healthcare |
| 18 | Arts and Recreation Services | 14 | Arts & Recreation |
| 19 | Other Services | | |



Method

- Aim 1: Pay gap calculation uses *mean* earnings rather than median:

$$\frac{\text{Men's mean real hourly earnings} - \text{women's mean real hourly earnings}}{\text{Men's mean real hourly earnings}} \times 100$$

- Aim 2: Blinder-Oaxaca decomposition uses HLFS data pooled across all years (2016-2022) to apportion each pay gap into 'explained' and 'unexplained' components
 - Explained component = portion of pay gap that is statistically accounted for by group differences in earnings-related characteristics
 - Unexplained component = portion of pay gap not accounted for by such differences
 - Components estimated by posing counterfactual question, "*What would the pay gap be if women had the same characteristics as the pooled sample of women and men?*"
 - Heckman correction applied to account for selection bias



Method

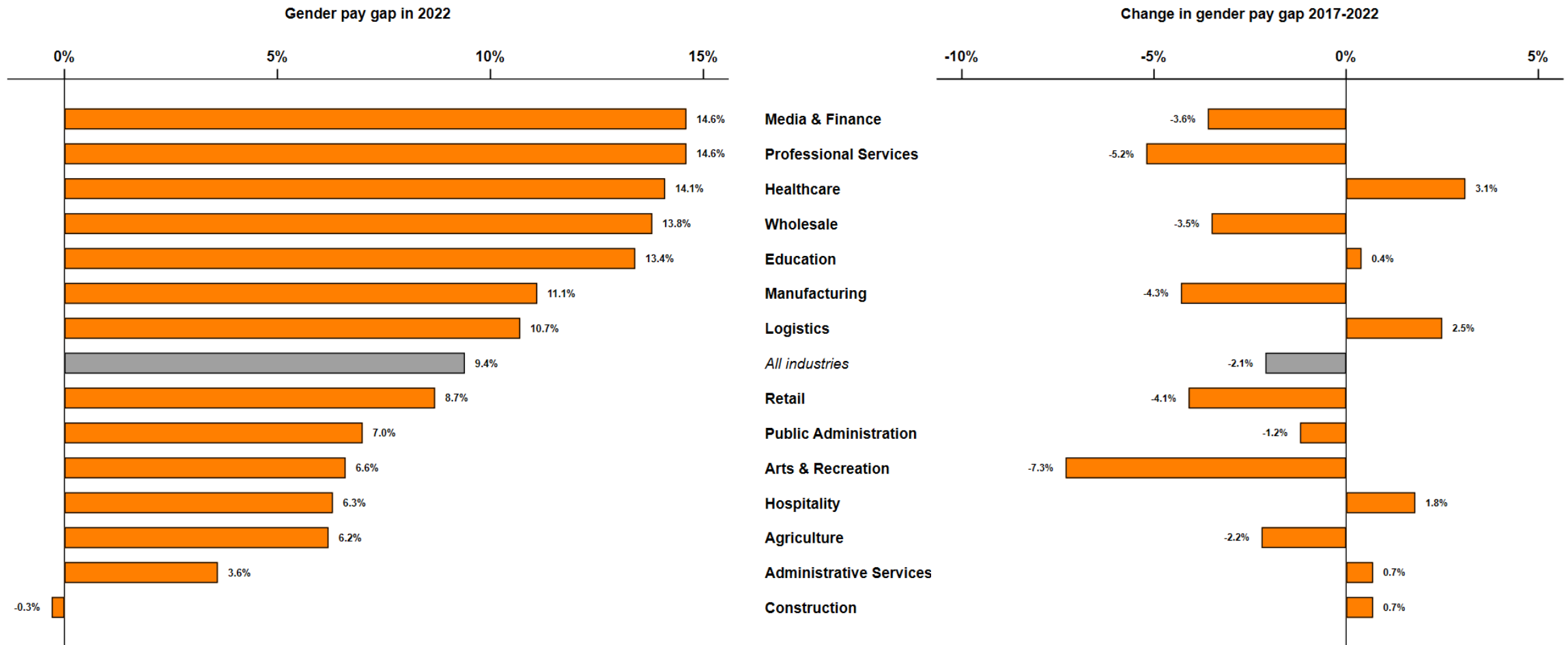
- Earnings-related characteristics used in Blinder-Oaxaca decomposition:

| Category | Variables |
|-----------------------------|--|
| Demographic characteristics | Sex, age, age-squared, ethnicity, country of birth |
| Household characteristics* | Sole parent, partnered status, number of dependent children, household income |
| Regional characteristics | Region of residence |
| Education characteristics | Highest qualification attained |
| Job-related characteristics | Occupation, part-time work, permanent job, job tenure, employment continuity, union membership |
| Industry characteristics | Industry of main job |

* Household characteristics are excluded from the decomposition in order to identify the Heckman selection model.

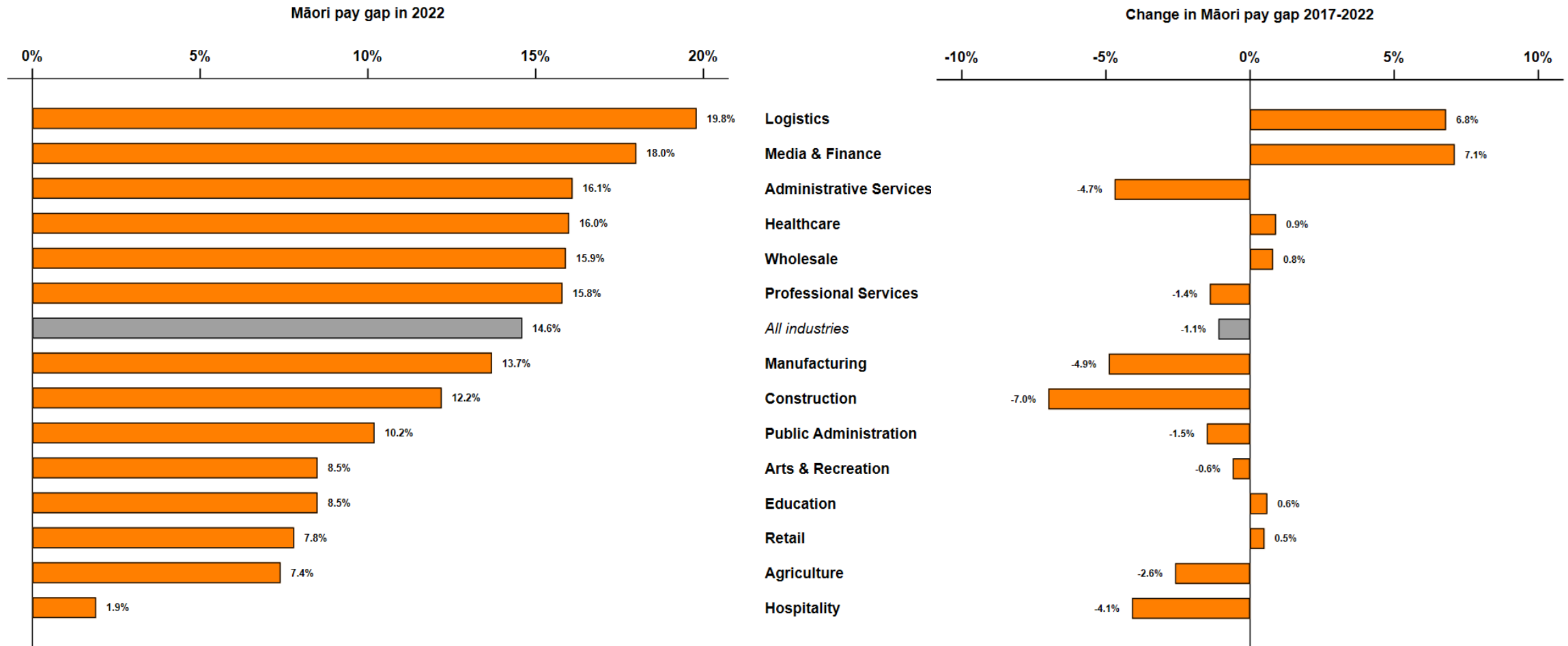


Gender pay gap level and trend (HLFS)



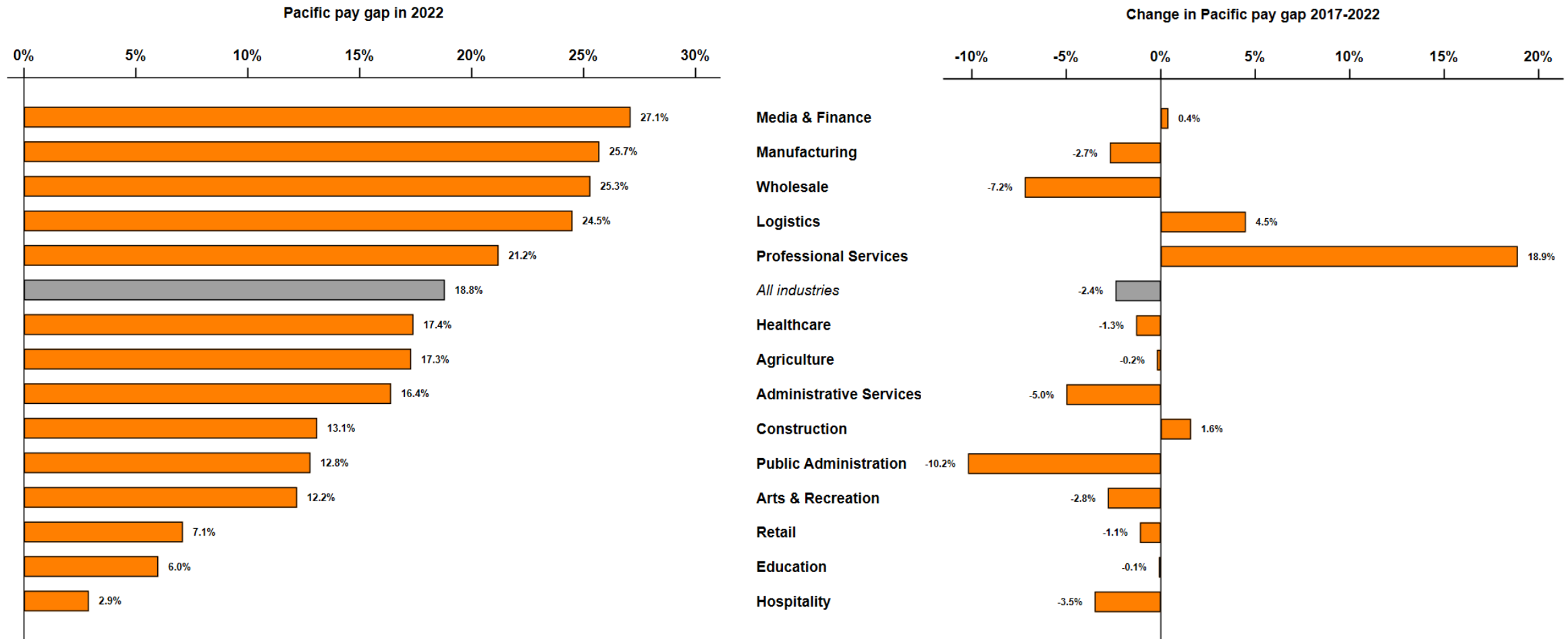


Māori vs. European pay gap level and trend (HLFS)





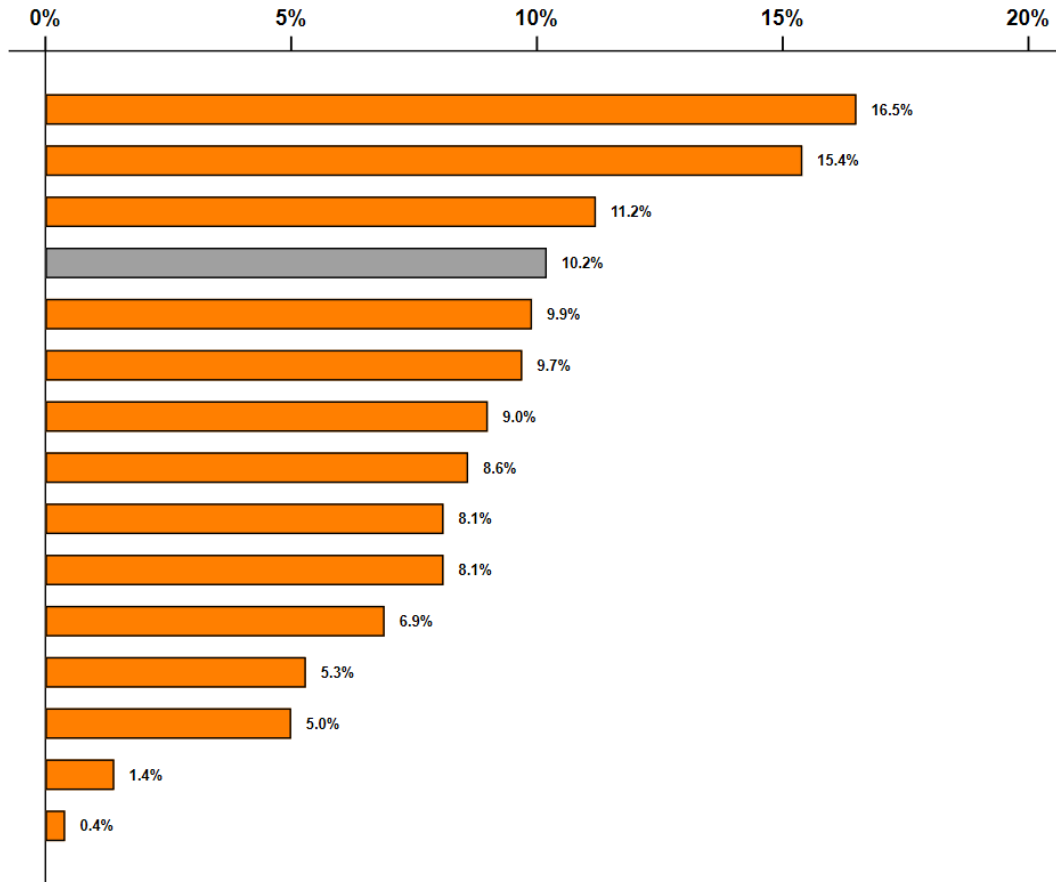
Pacific vs. European pay gap level and trend (HLFS)



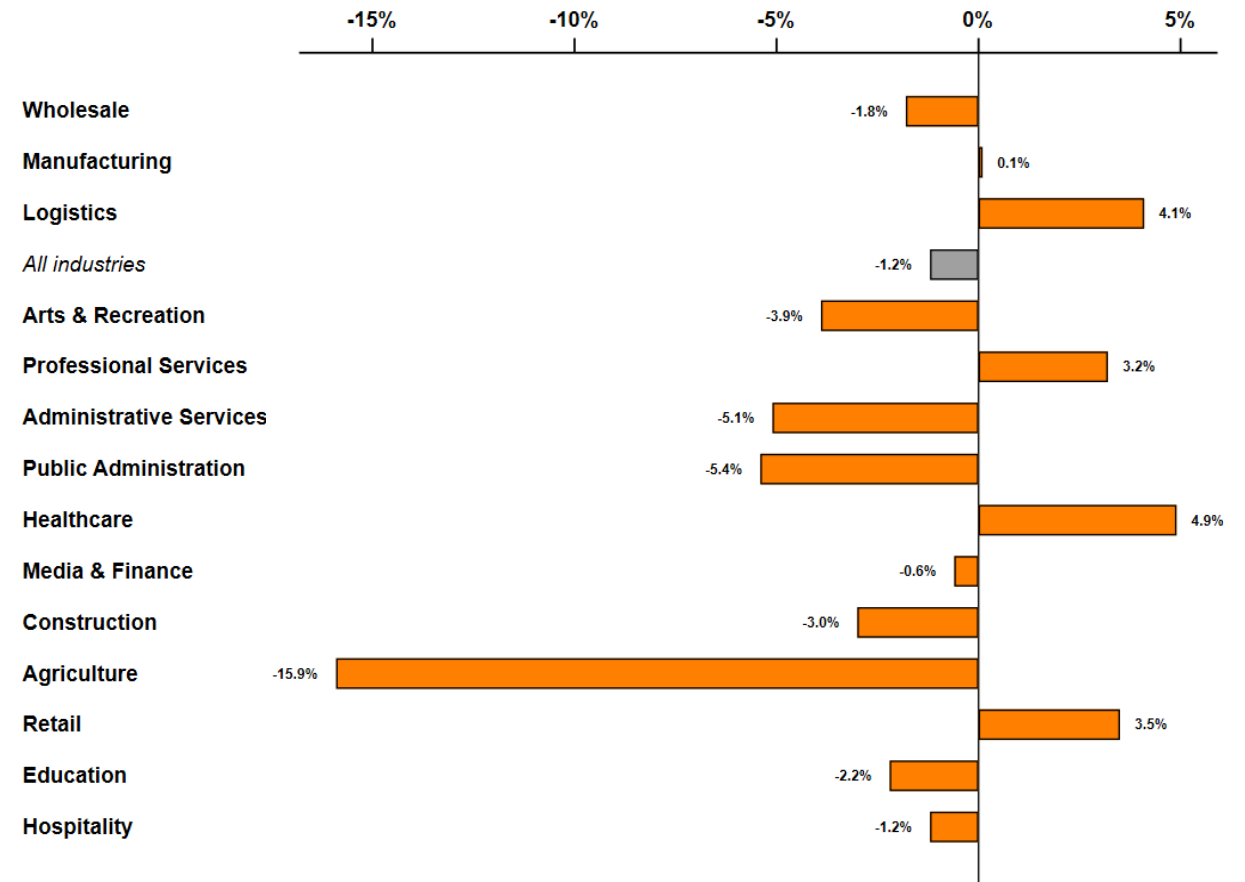


Asian vs. European pay gap level and trend (HLFS)

Asian pay gap in 2022

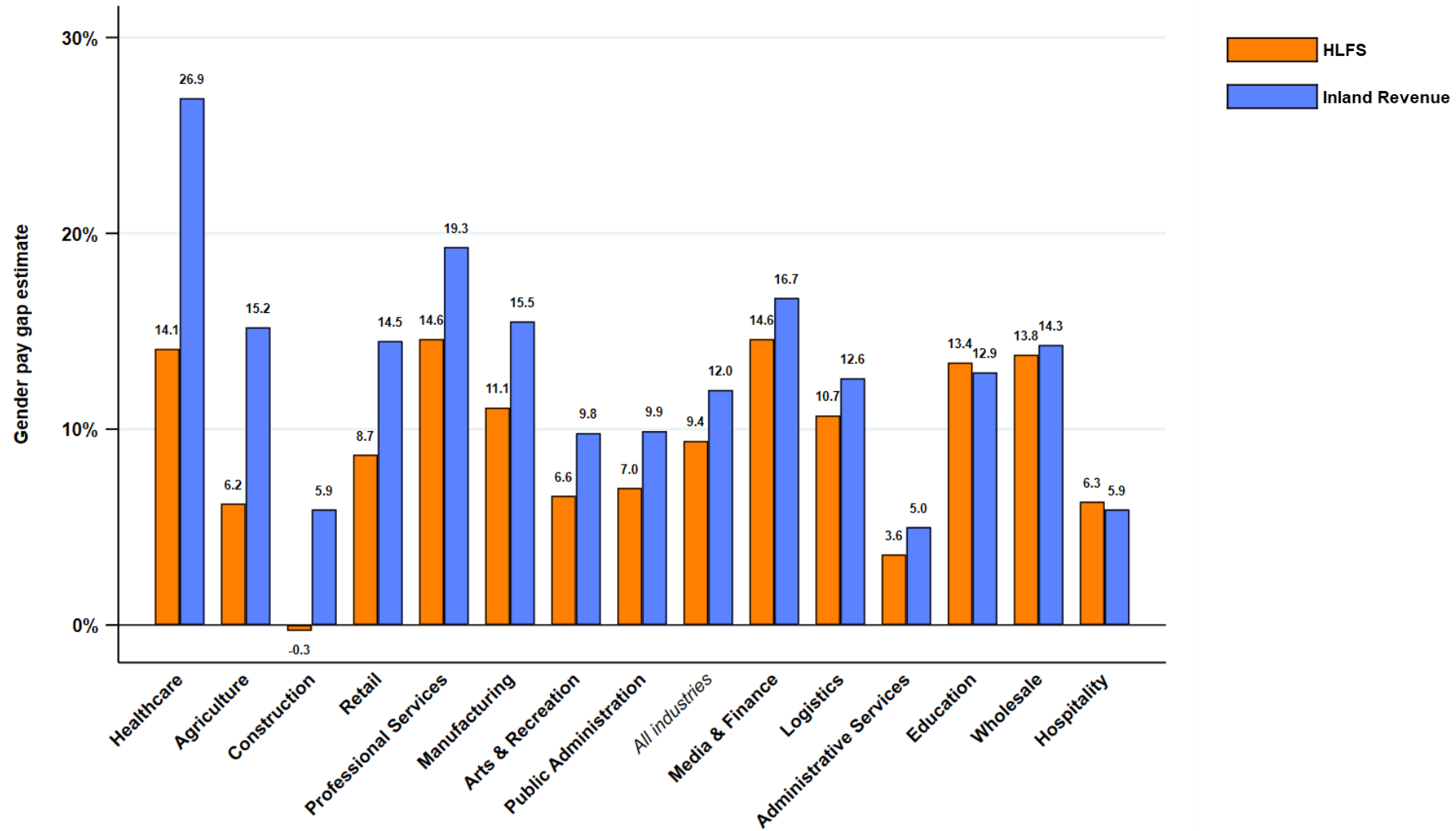


Change in Asian pay gap 2017-2022

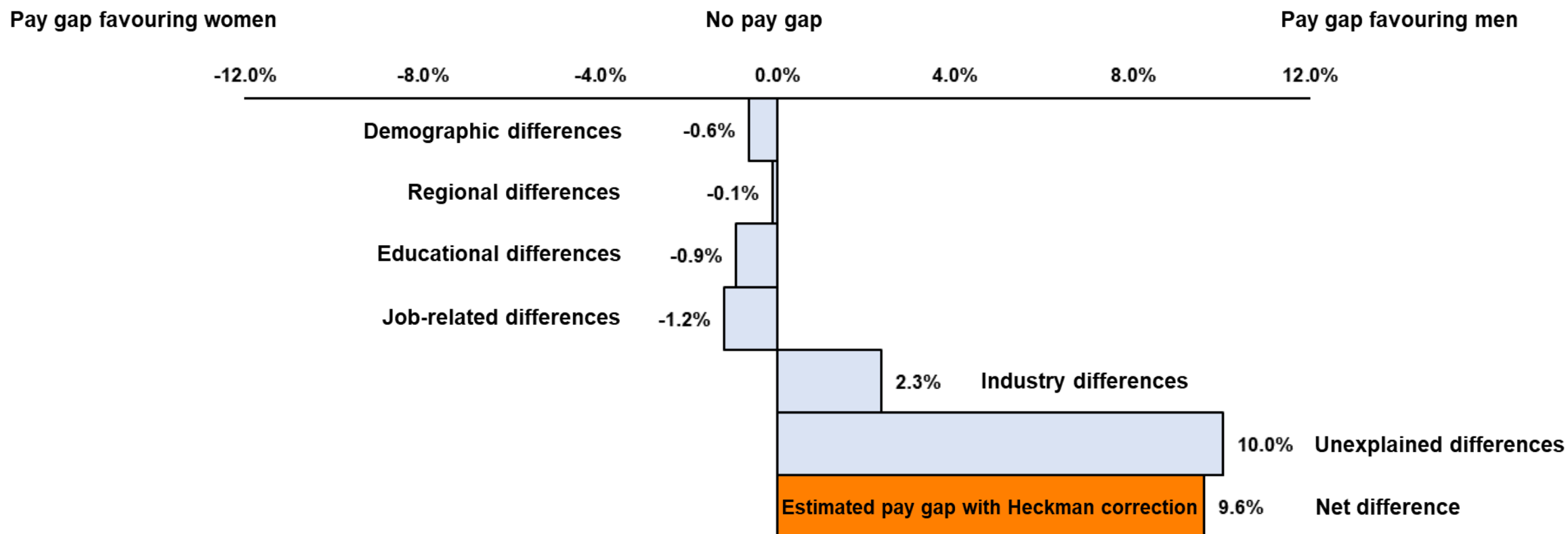




Gender pay gap – HLFS vs. IR

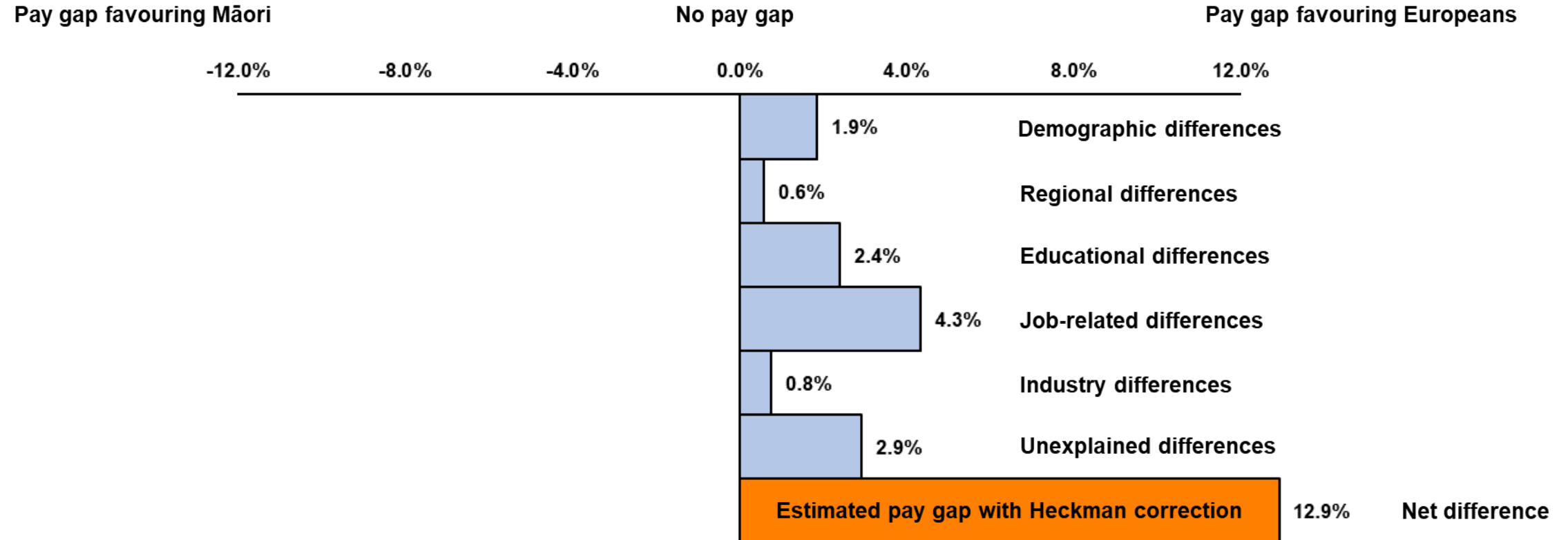


Gender pay gap for *All industries* – Blinder-Oaxaca decomposition (HLFS)

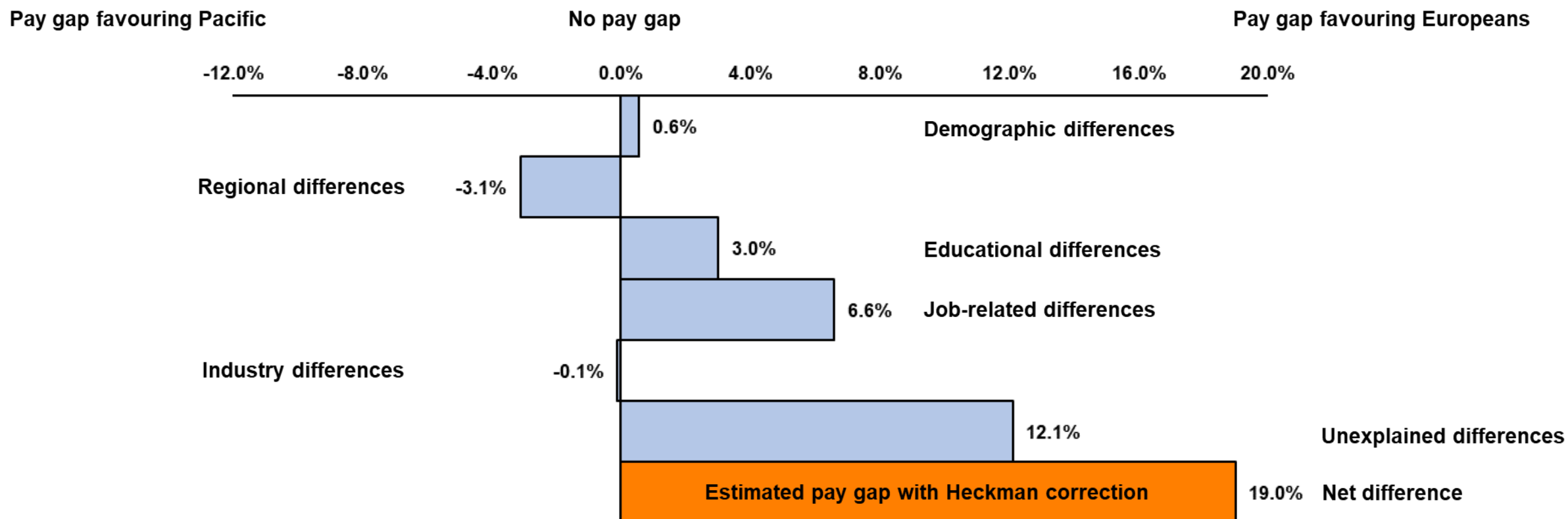




Māori pay gap for *All industries* – Blinder-Oaxaca decomposition (HLFS)

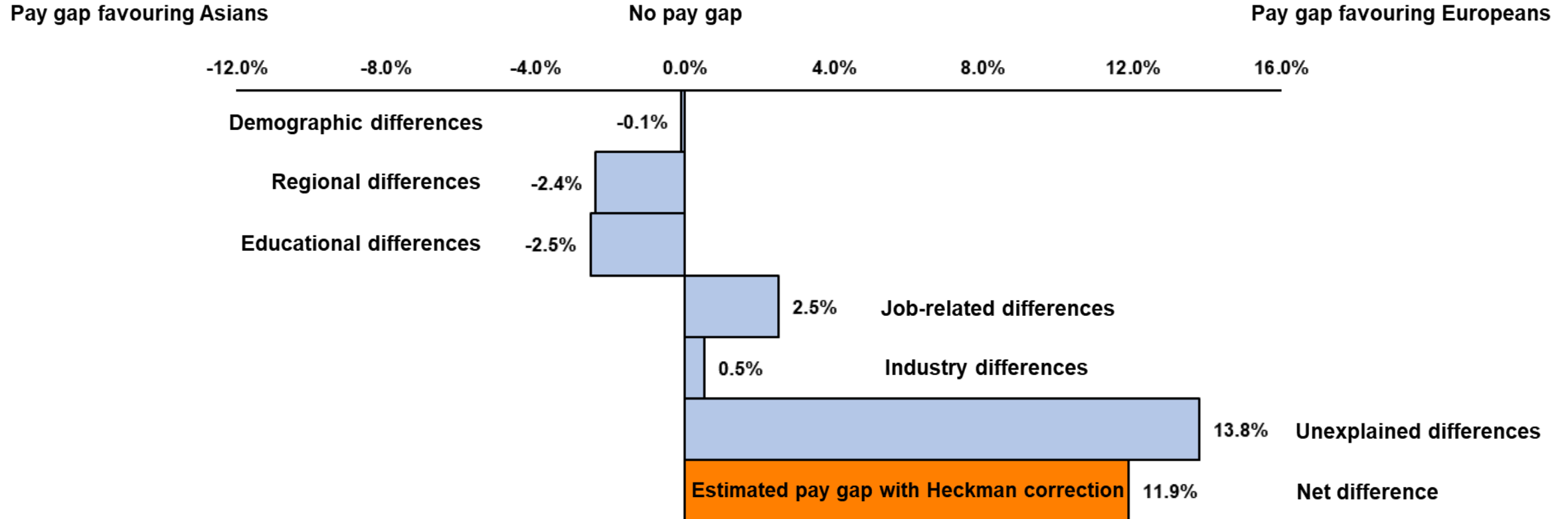


Pacific pay gap for *All industries* – Blinder-Oaxaca decomposition (HLFS)





Asian pay gap for *All industries* – Blinder-Oaxaca decomposition (HLFS)





Conclusions

- In 2022, Pacific pay gap = 18.8%, Māori pay gap = 14.6%, Asian pay gap = 10.2%, gender pay gap = 9.4%
- High-paying industries (e.g., Media & Finance, Professional Services) tend to have larger pay gaps, low-paying industries (e.g., Hospitality, Retail) tend to have smaller ones
- Overall (all industries), all gender and ethnic pay gaps have decreased over recent years (but Logistics industry stands out – all four pay gaps have increased)
- Admin data from Inland Revenue generates larger pay gaps than survey data (overall and for most industries), industry rankings similar for largest and smallest gaps
- Gender, Pacific, and Asian (all-industry) pay gaps are mostly unexplained, while Māori pay gap is mostly explained
- For gender pay gap, industry differences account for one-quarter of gap
- For Māori and Pacific pay gaps, educational differences account for one-fifth, and job-related differences (especially occupation) account for one-third, of pay gaps