

# Enhancing social policy outcomes: How important are structural factors?



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**THE UNIVERSITY OF AUCKLAND**

Whare Wānanga o Tāmaki Makaurau

Sociology Seminar Series

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COMPASS Research Centre

University of Auckland, New Zealand

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**MINISTRY OF BUSINESS,  
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HIKINA WHAKATUTUKI

# Enhancing social policy outcomes



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- ❑ Social policy goal to improve outcomes for disadvantaged
- ❑ Need to know most influential factors, i.e. best policy levers
- ❑ An influential perspective is *social determinants* framework (*WHO Commission 2008, Marmot Review 2010*) - applied to health – argues primacy of structural factors - sociological
- ❑ How do we show if structural factors are most important?
- ❑ Further, how do we show if efforts to tackle disparities will make a difference to the most disadvantaged?

# What we are offering



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- ❑ Empirical model of what social factors influence outcomes
- ❑ Captures social complexity, heterogeneity, change
- ❑ Mechanisms contextualised in social system (theory)
- ❑ Pathways may be amenable to intervention (policy)
- ❑ Use simulation to test scenarios - ask 'what if' questions, i.e. impact of changing social determinants on outcomes
- ❑ Model developed in health but applicable to other domains

- Rationale
  - Social determinants of health
  - Data source
  - Our conceptual model
  - Research questions
- Method
  - Microsimulation
- Policy application
  - Scenario testing – answering ‘what if’ questions
- Conclusions

# Social determinants (SDs) of health



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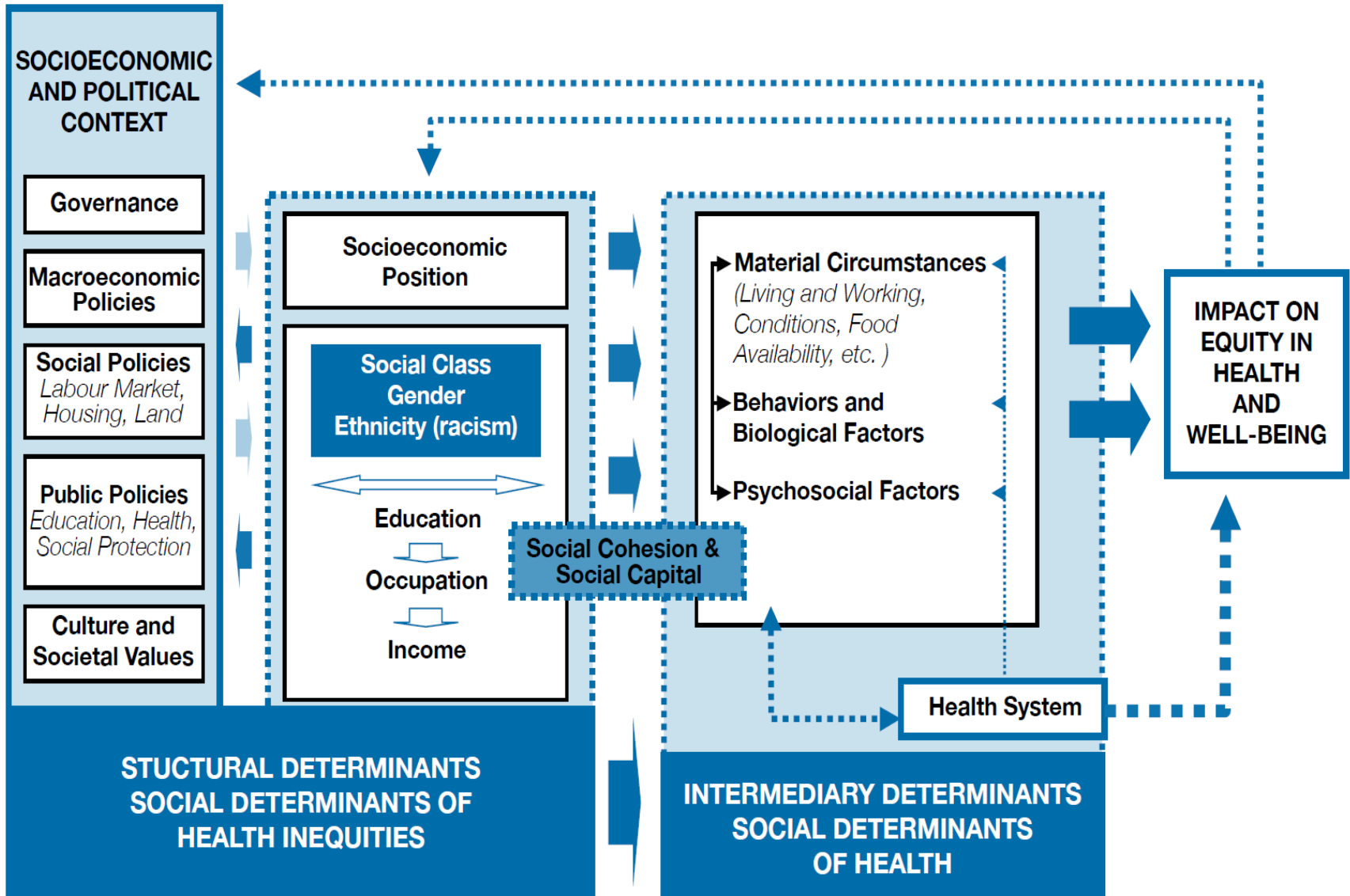
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- ❑ Health disparities are rooted in SDs that confer differential vulnerability to poor health or exposure to conditions that produce poor health
- ❑ *Structural* factors comprise SDs of health disparities (that are also SDs of health) while *intermediary* factors comprise other SDs of health (only)
- ❑ Debate as to relative importance, as effective policy levers, of structural or intermediary factors

# Social determinants of health framework

*Solar & Irwin, 2010 (WHO)*



# Data source



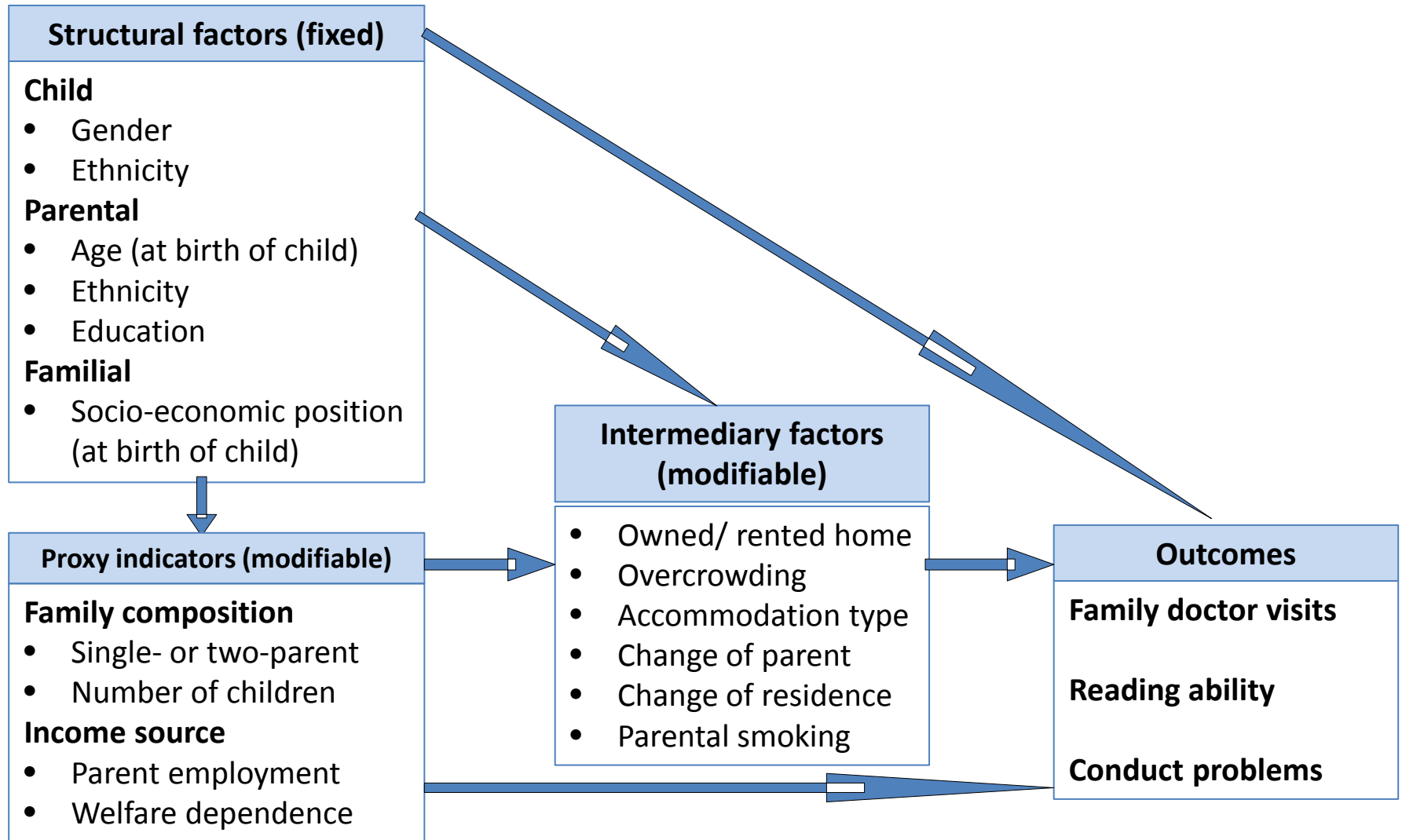
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- ❑ Christchurch Health & Development Study
- ❑ Longitudinal study of birth cohort born in 1977 (on-going)
- ❑ Used for our model - 1017 children from birth to 10-years-old

# Our model of social determinants of child well-being





# Research questions



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- What is the effect of improving various factors (potential determinants) on child outcomes?
  - Q1. Are structural or intermediary factors more influential?
  - Q2. Is there greater impact on socially disadvantaged groups?
  - Q3. Do the same mechanisms operate for outcomes in a range of domains: GP visits, reading ability or conduct problems?

# What is microsimulation?



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- **Begin with a starting sample of children**
  - Based on Christchurch Health & Development Study (CHDS)
- **Derive statistical equations from CHDS**
- **Apply equations to starting sample to reproduce original CHDS patterns**
  - A sample of children with typical synthetic biographies
- **We have created a virtual world**
- **Predict what might happen if conditions were to change**
  - Change the original settings to pose ‘what if’ scenarios

# Virtual versus real cohort: family doctor visits, reading ability, and conduct problems, by year of age

Year	Real cohort (CHDS) n=1017	Virtual cohort (simulated) n=1017	Absolute error	Absolute error / CHDS mean
<b>Family doctor visits (mean (95% CI))</b>				
1	5.82	5.82	-	-
2	5.34	5.28	0.06	-
3	3.31	3.18	0.13	-
4	3.13	3.15	0.02	-
5	3.22	3.12	0.10	-
6	3.35	3.32	0.03	-
7	2.43	2.41	0.02	-
8	2.14	2.15	0.01	-
9	1.96	1.90	0.06	-
10	1.65	1.68	0.03	-
<b>All years</b>	3.24	3.20 (3.15-3.25)	0.04	1.2%
<b>Reading ability: BURT score (mean (95% CI))</b>				
8	45.3	45.3	-	-
9	54.4	54.7	0.3	-
10	64.1	63.7	0.4	-
11	72.8	71.9	0.9	-
12	79.5	78.9	0.6	-
13	85.2	84.6	0.6	-
<b>All years</b>	66.9	66.5 (65.7-67.4)	0.4	0.6%
<b>Conduct problems (mean (95% CI))</b>				
6	10.6	10.6	-	-
7	24.6	24.8	0.2	-
8	24.4	25.0	0.6	-
9	24.7	25.3	0.6	-
10	24.9	25.6	0.7	-
<b>All years</b>	21.8	22.3 (22.1-22.4)	0.5	2.3%

# What is microsimulation?



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# Scenario testing



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- ❑ What if there was a policy intervention that changed social determinants? What would be its impact on outcome?
- ❑ Base simulation (no change) vs. ‘improvement’ simulation (modifying factors in a direction expected to advantage people, e.g. father employed, family not welfare dependent)

# Scenario testing procedure



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1. We ‘improved’ *single* factors and assessed the degree of impact on outcome (little effect)
2. We ‘improved’ *multiple* factors simultaneously (bigger effect)
3. We compared the relative effects of ‘improving’ structural and intermediary factors
4. We posed ‘best case scenarios’ by ‘improving’ structural and intermediary factors *simultaneously*

# Outcome: GP visits



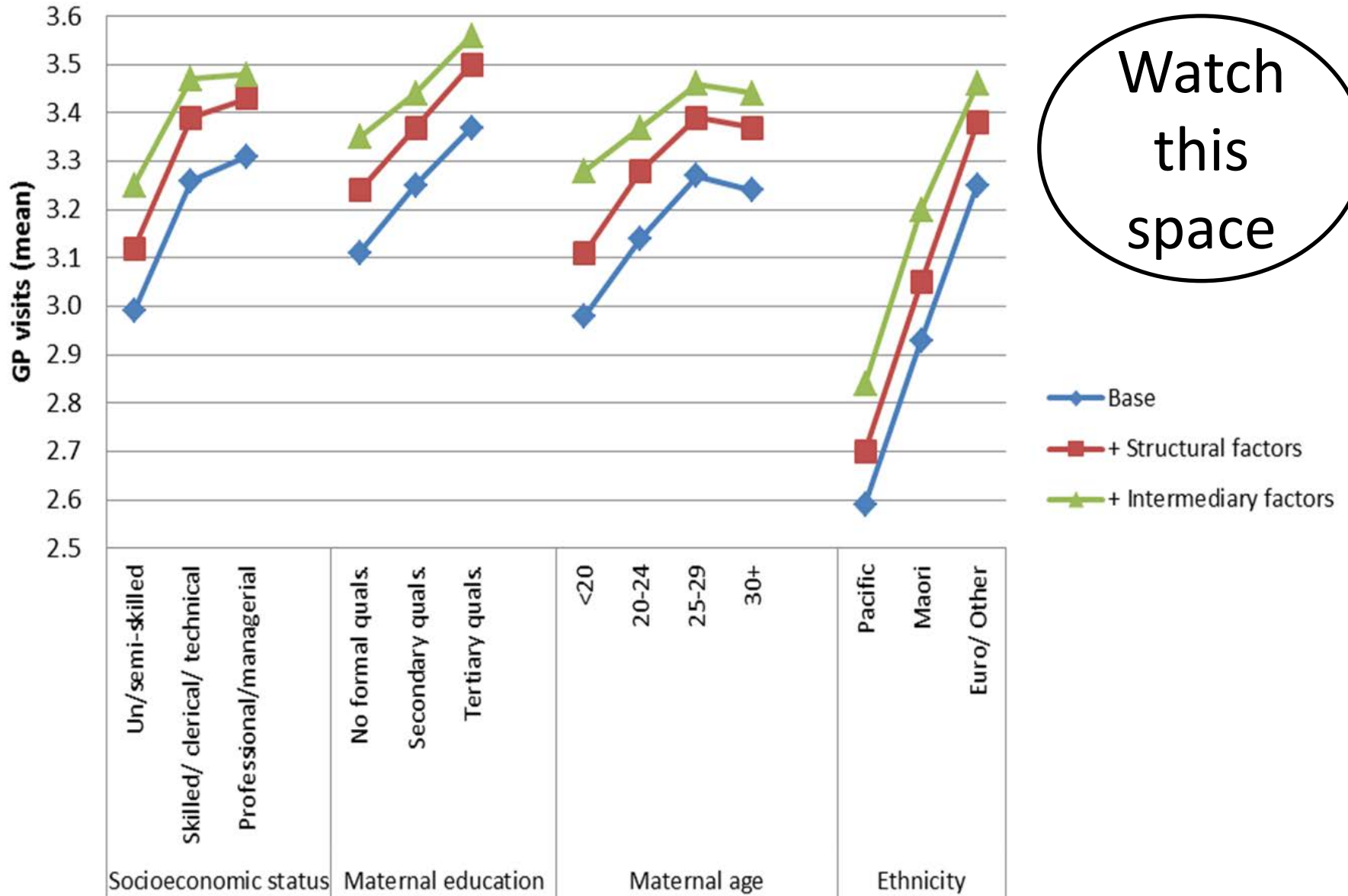
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Increasing the number of visits per year –  
i.e. increasing access to GP care – is  
interpreted as an improvement in outcome

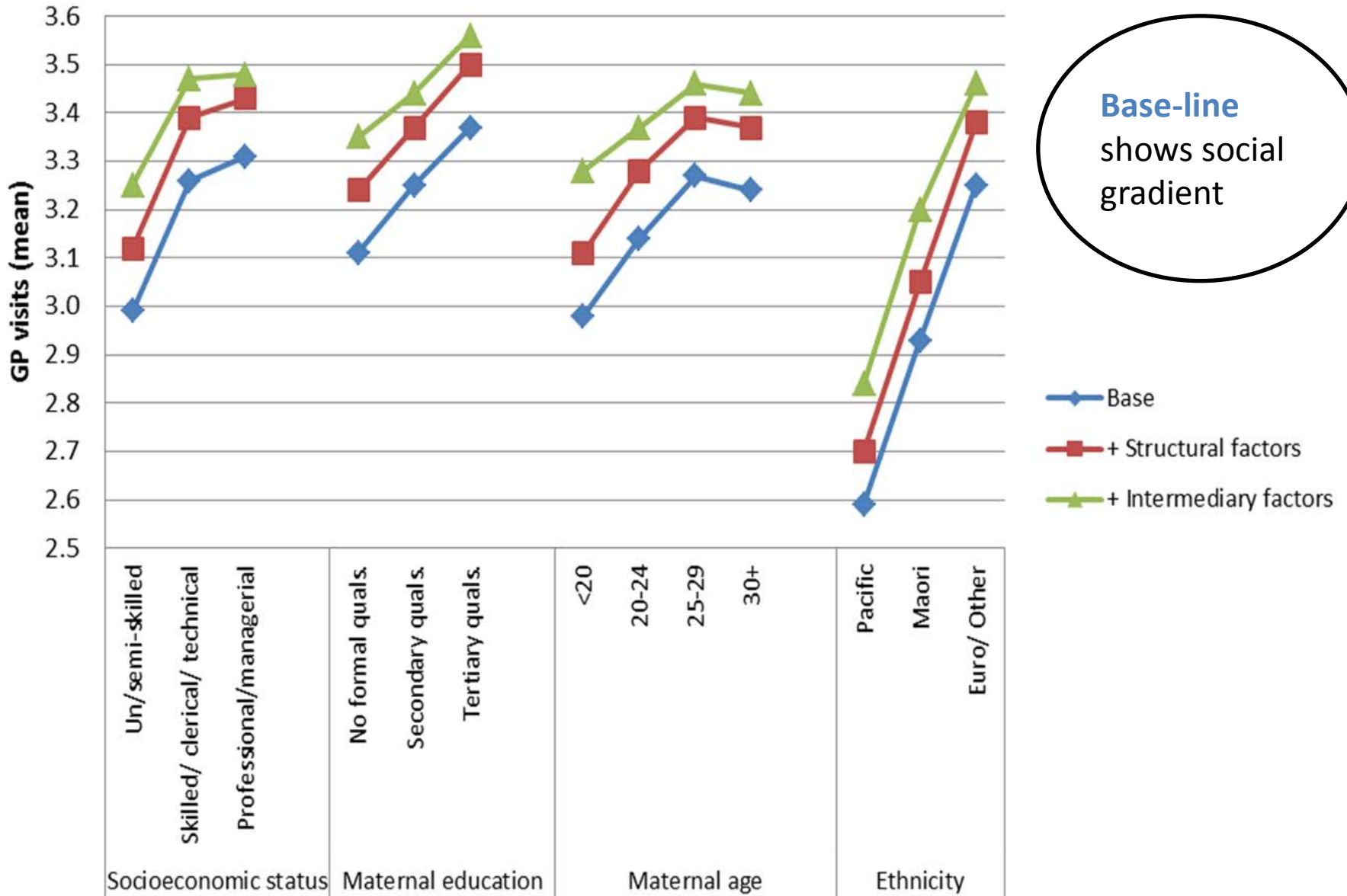
# GP Visits. Disparities: absolute change



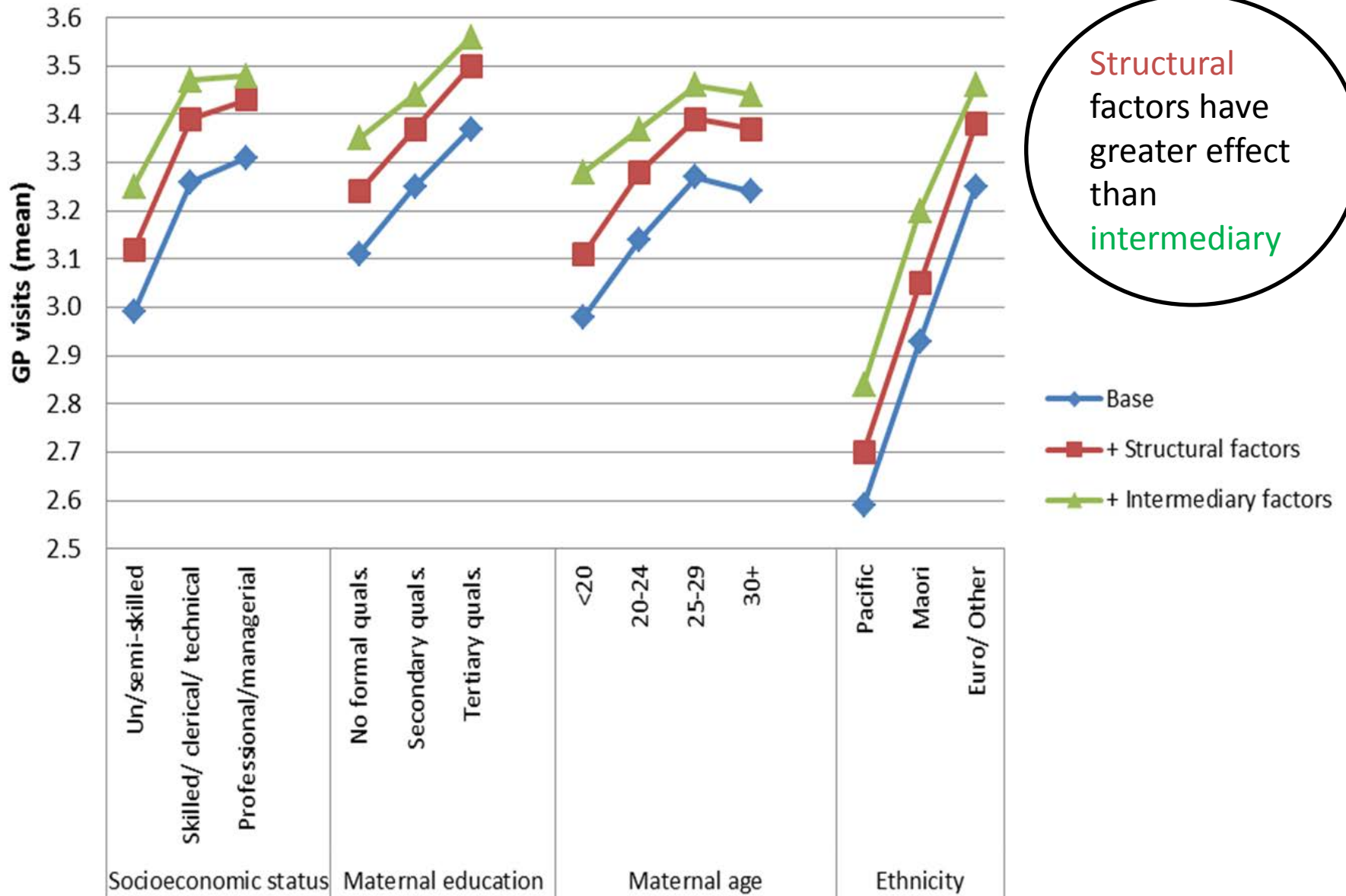
Watch this space



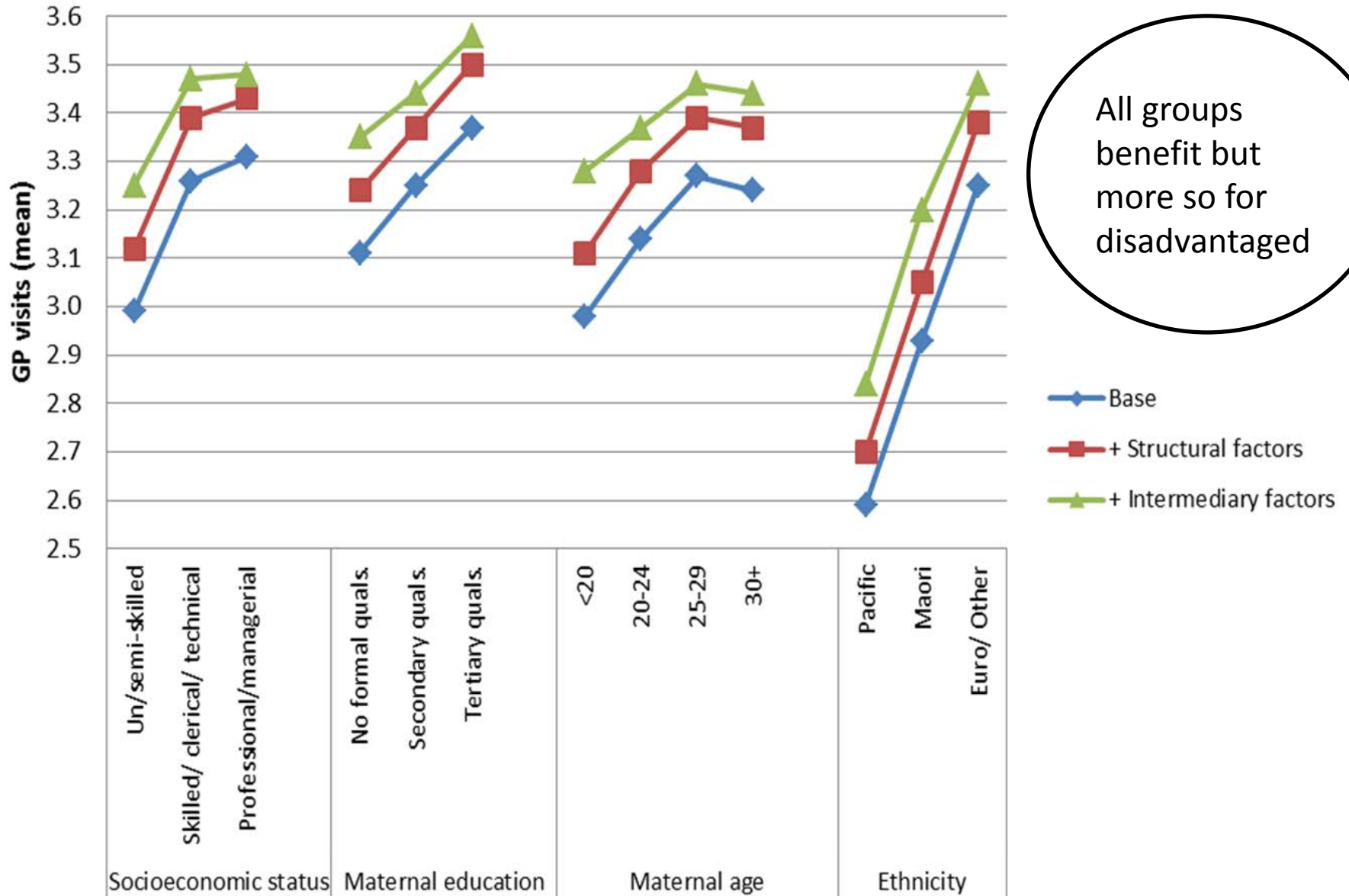
# GP Visits. Disparities: absolute change



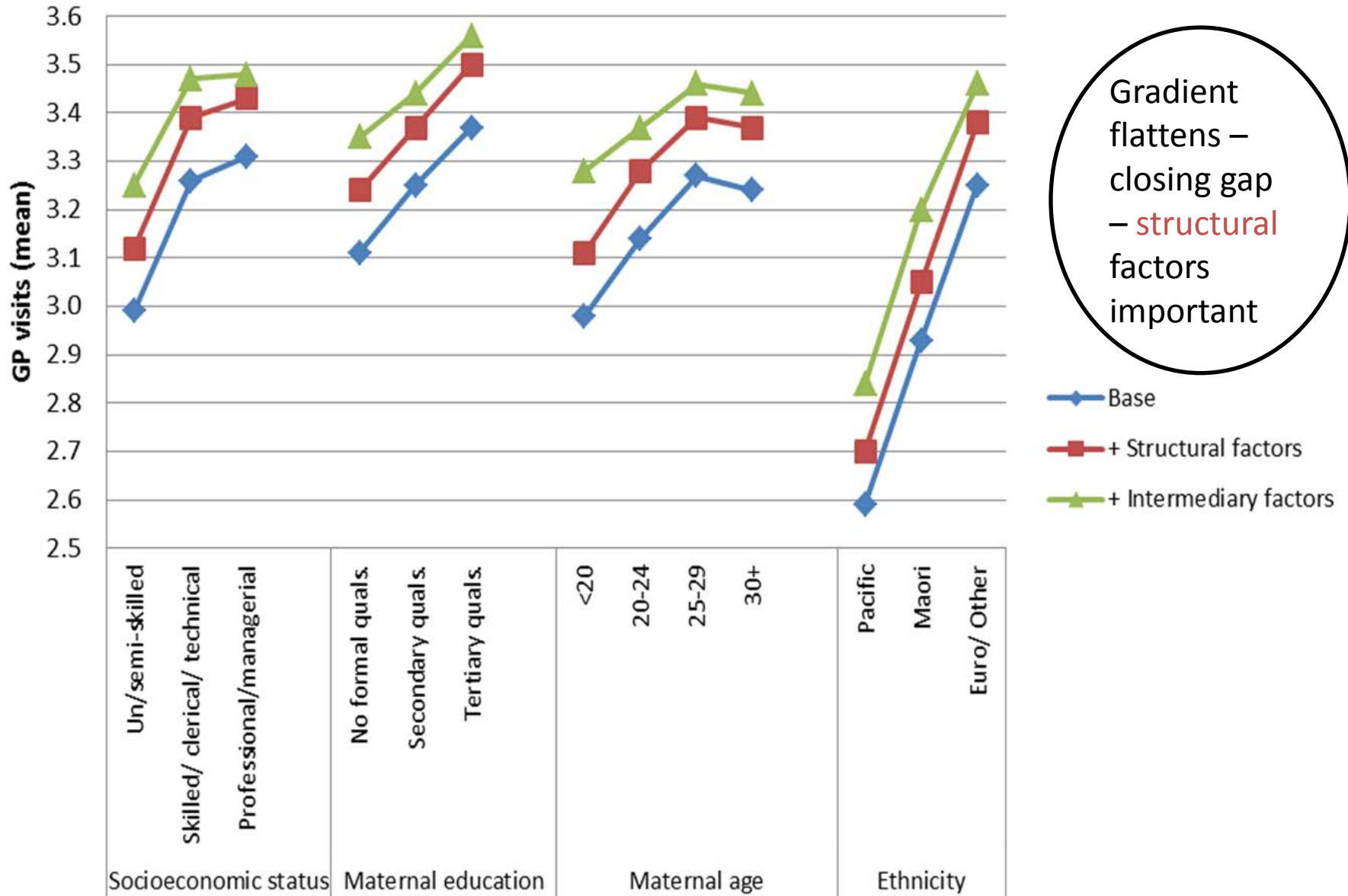
# GP Visits. Disparities: absolute change



# GP Visits. Disparities: absolute change



# GP Visits. Disparities: absolute change



# Outcome: Reading ability



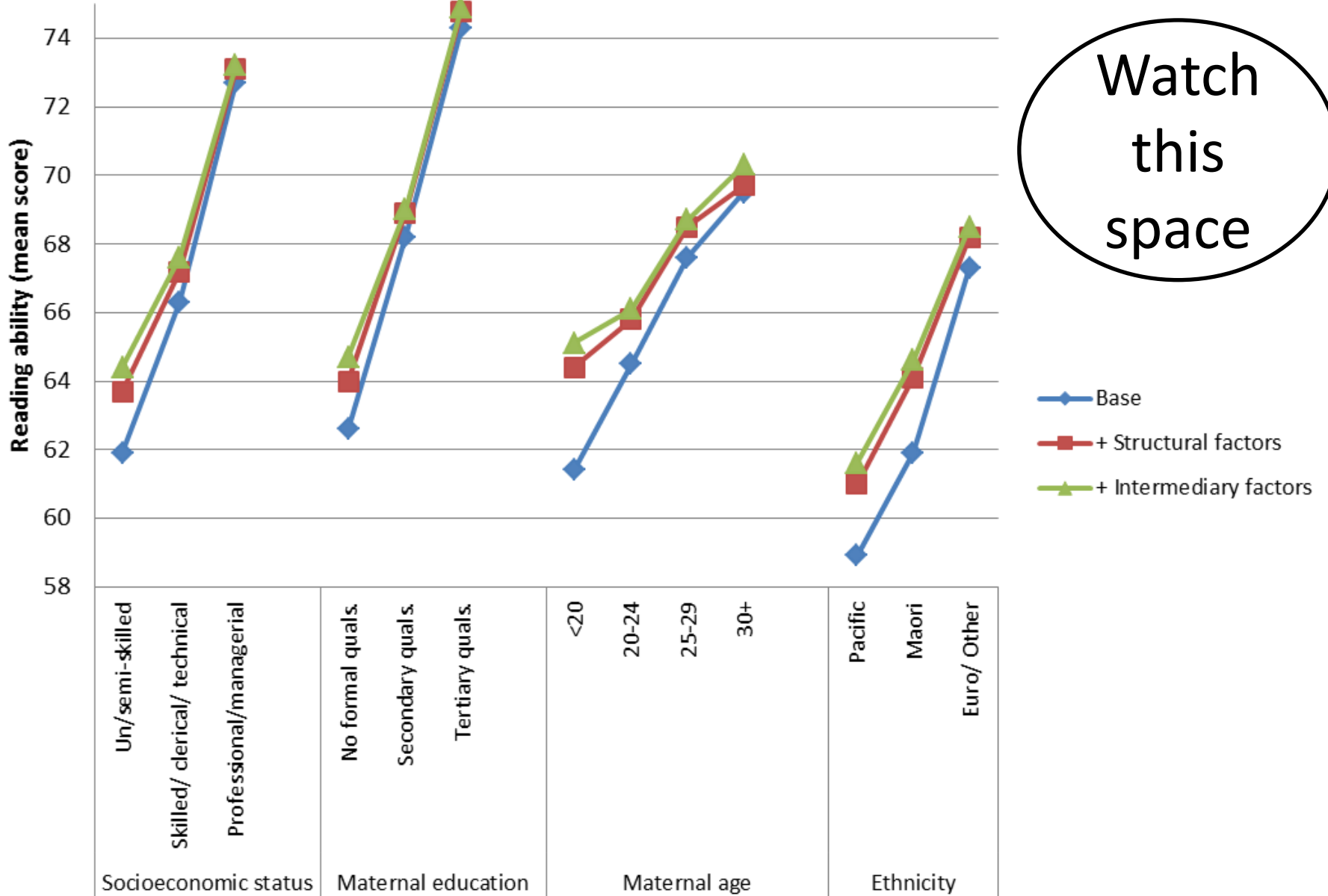
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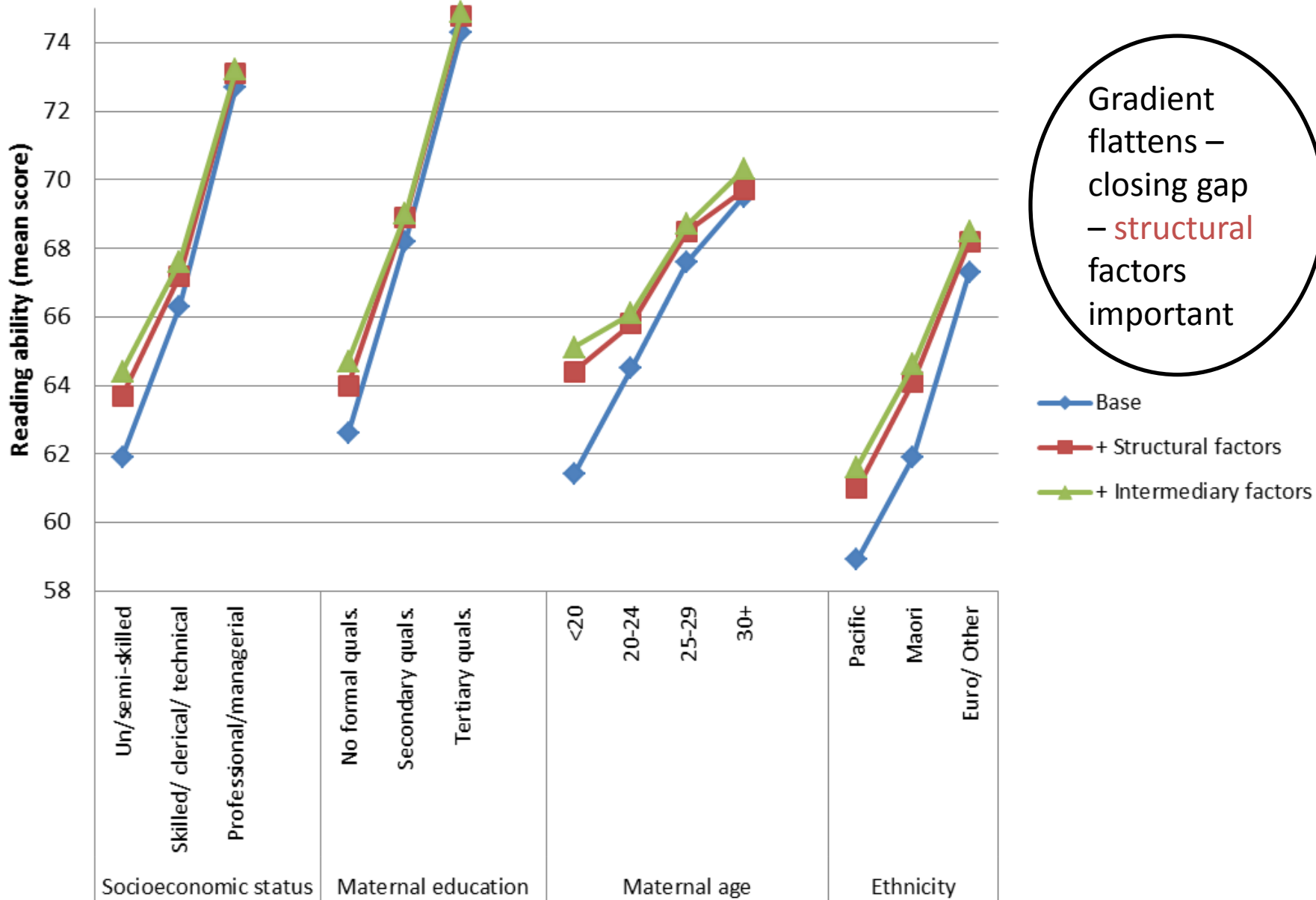
Increasing the reading score is interpreted as an improvement in outcome

# Reading Ability. Disparities: absolute change



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# Reading Ability. Disparities: absolute change



# Outcome: Conduct problems



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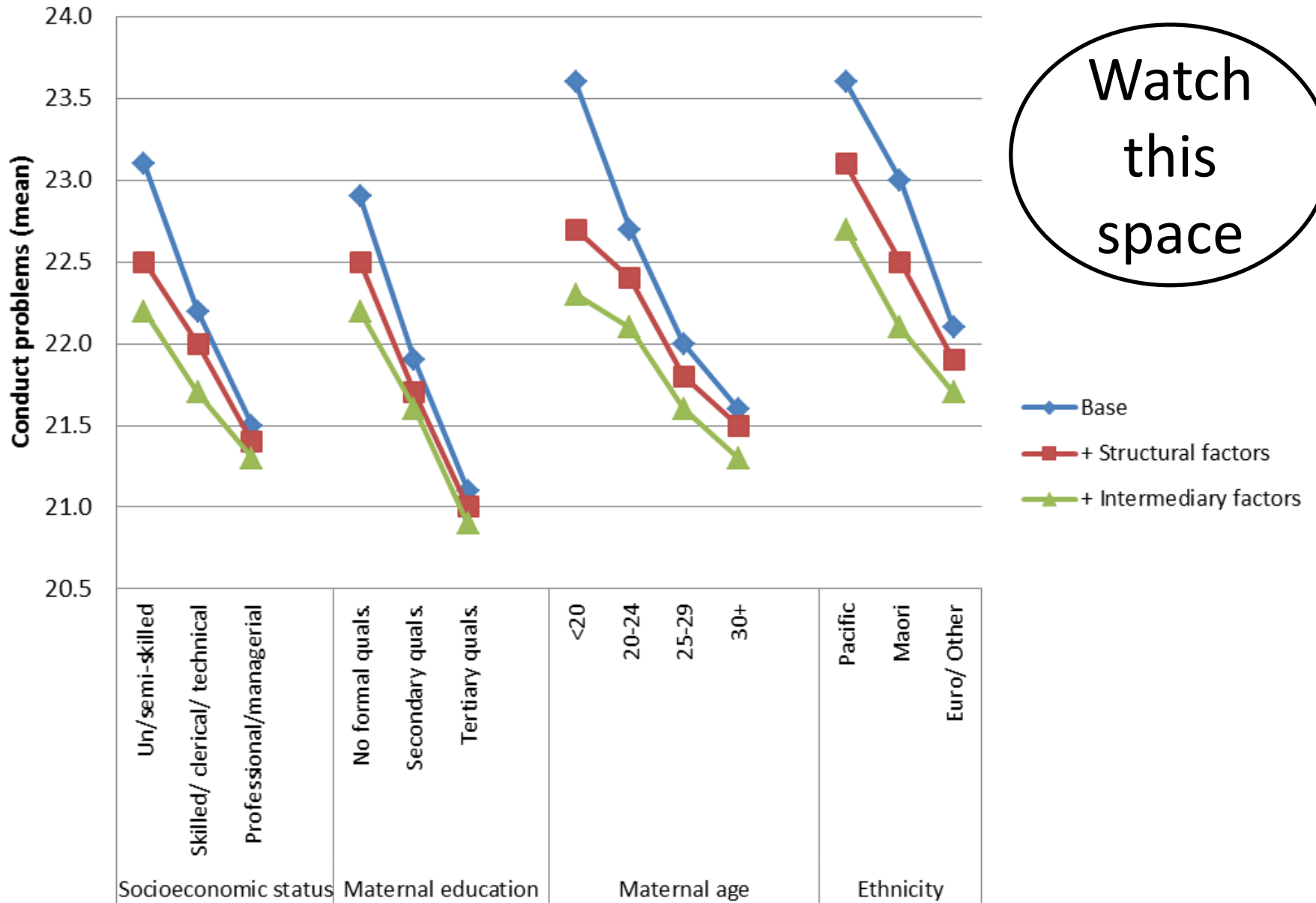
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Reducing the number of conduct problems per year is interpreted as an improvement in outcome

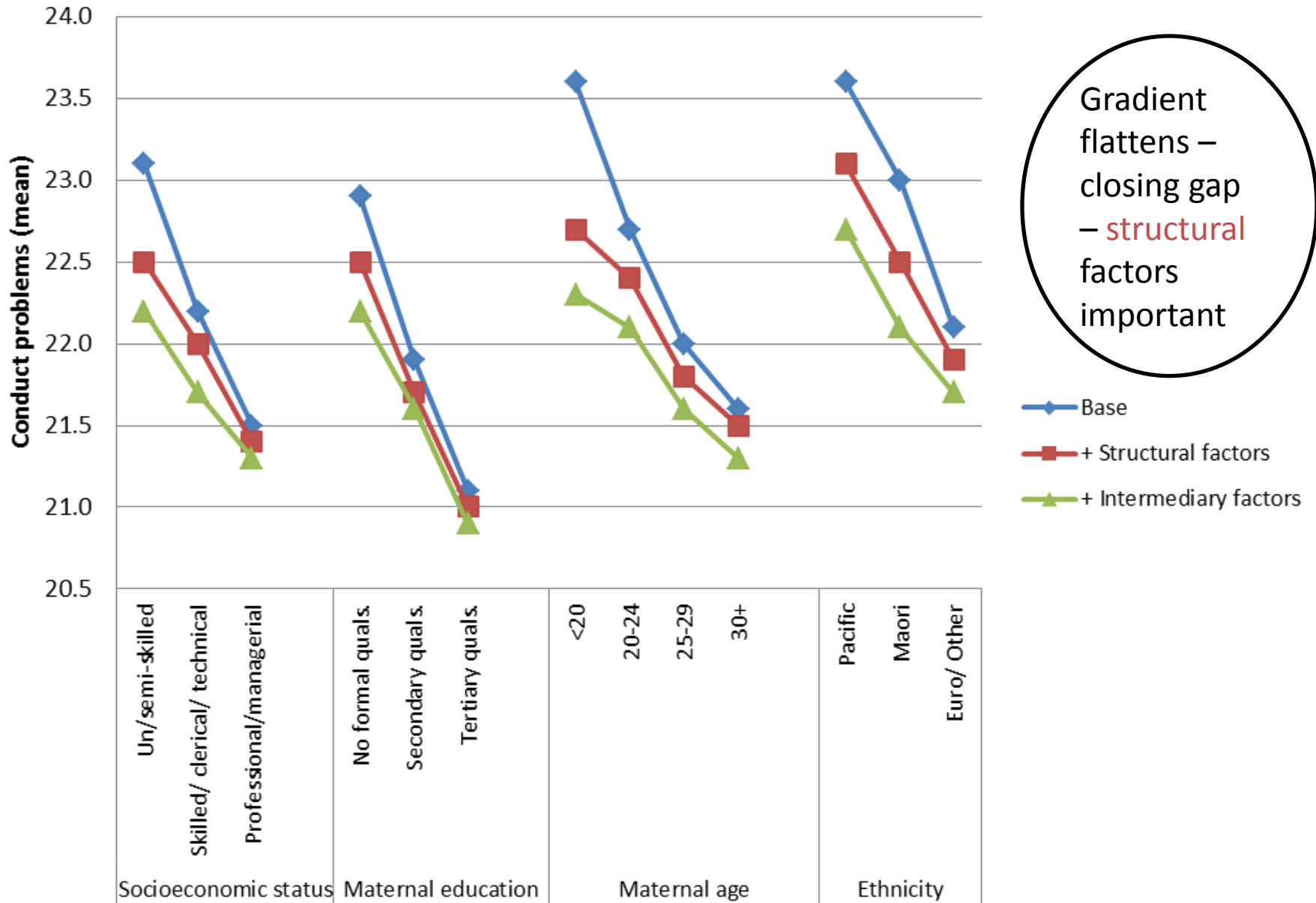


# Conduct Problems. Disparities: absolute change



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# Conduct Problems. Disparities: absolute change



# Summary of results



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- ❑ Q1: Effect of modifiable *structural* factors is greater than of *intermediary* factors
- ❑ Q2: Clear social gradient of impact with the benefits of intervention flowing disproportionately to the most disadvantaged
- ❑ Q3: Similar findings for range of outcomes in different domains

# Conclusions



- ❑ Our simulation model can be used to test scenarios
  - ❑ What if there was a policy intervention that changed social determinants? What would be impact on outcome?
- ❑ Policy implications
  - ❑ Important to tackle (multiple) structural & intermediary determinants esp. structural
    - argues for inter-sectoral policy? fundamental change?
  - ❑ Social gradients of impact, more disadvantaged groups gain more benefit
    - argues for progressive universalism?
- ❑ Social policy can potentially make a difference to the most disadvantaged