Beyond owning? Pet ownership, interaction with pets, and child well-being in Ireland

Elza Elmira
Postdoctoral Research Fellow
5 November 2026

AN INSTITIÚID UM THAIGHDE EACNAMAÍOCHTA AGUS SÓISIALTA
ESRI ECONOMIC & SOCIAL RESEARCH INSTITUTE

Outline

1. Introduction
2. Data and Variables
3. Methodology
4. Results
5. Discussion

AN INSTITIÚID UM THAIGHDE EACNAMAÍOCHTA AGUS SÓISIALTA
ESRI ECONOMIC & SOCIAL RESEARCH INSTITUTE

1. Introduction

- Positive interactions with families, friends, or communities are linked with improved child's mental and physical health (Goswami, 2011; Lippold et al., 2016).
- Pets are considered as part of family members and have strong bonds with members of the household (HABRI, 2022; Jalongo, 2015).
- Studies on human-animal interactions remain relatively scarce, especially those focusing on children.
- This study aims to fill the gap by examining how pet ownership and interaction with pets contributes to children's socioemotional and behavioural outcomes, relationship quality, and physical health.

AN INSTITIÚID UM THAIGHDE EACNAMAÍOCHTA AGUS SÓISIALTA
ESRI ECONOMIC & SOCIAL RESEARCH INSTITUTE

Literature Review



Regulate stress through reduction of cortisol and release of oxytocin (Meints et al., 2022; Polheber & Matchock, 2013; Teo et al., 2022)

Provide social support and encouraging empathy (Giraudet et al., 2022; Jalongo, 2015)

Childhood development, such as language and speech (Purewal et al., 2024)

Lower academic performance (Purewal el., 2024)

Hyperactivity and conduct problems (Adams et al., 2024; Meints et al., 2022)

AN INSTITIÚID UM THAIGHDE EACNAMAÍOCHTA AGUS SÓISIALTA
ESRI ECONOMIC & SOCIAL RESEARCH INSTITUTE

Research questions

- What determines pet ownership among children in Ireland?
- How does pet ownership and interaction with pets influence the following aspects of children's lives?
  - Socioemotional and behavioural outcomes
  - Relationship with parents and peers
  - Physical health
- How does the relationship vary among boys and girls?

AN INSTITIÚID UM THAIGHDE EACNAMAÍOCHTA AGUS SÓISIALTA
ESRI ECONOMIC & SOCIAL RESEARCH INSTITUTE

2. Data

- Cohort '98 of GUI, waves where children are 9, 13, and 17 years were used.
- In Cohort '08, waves where children were 9 and 13 were used in the main analyses.
- In both cohorts, similar indicators were collected: socio-emotional/behavioural well-being, relationships, physical health, and family context.
- A time-use diary is used to collect information on children's activity in the past 24 hours. This information is collected among 13, 17/18, and 20 year-old respondents in cohort '98 and 13 year-old in cohort '08.

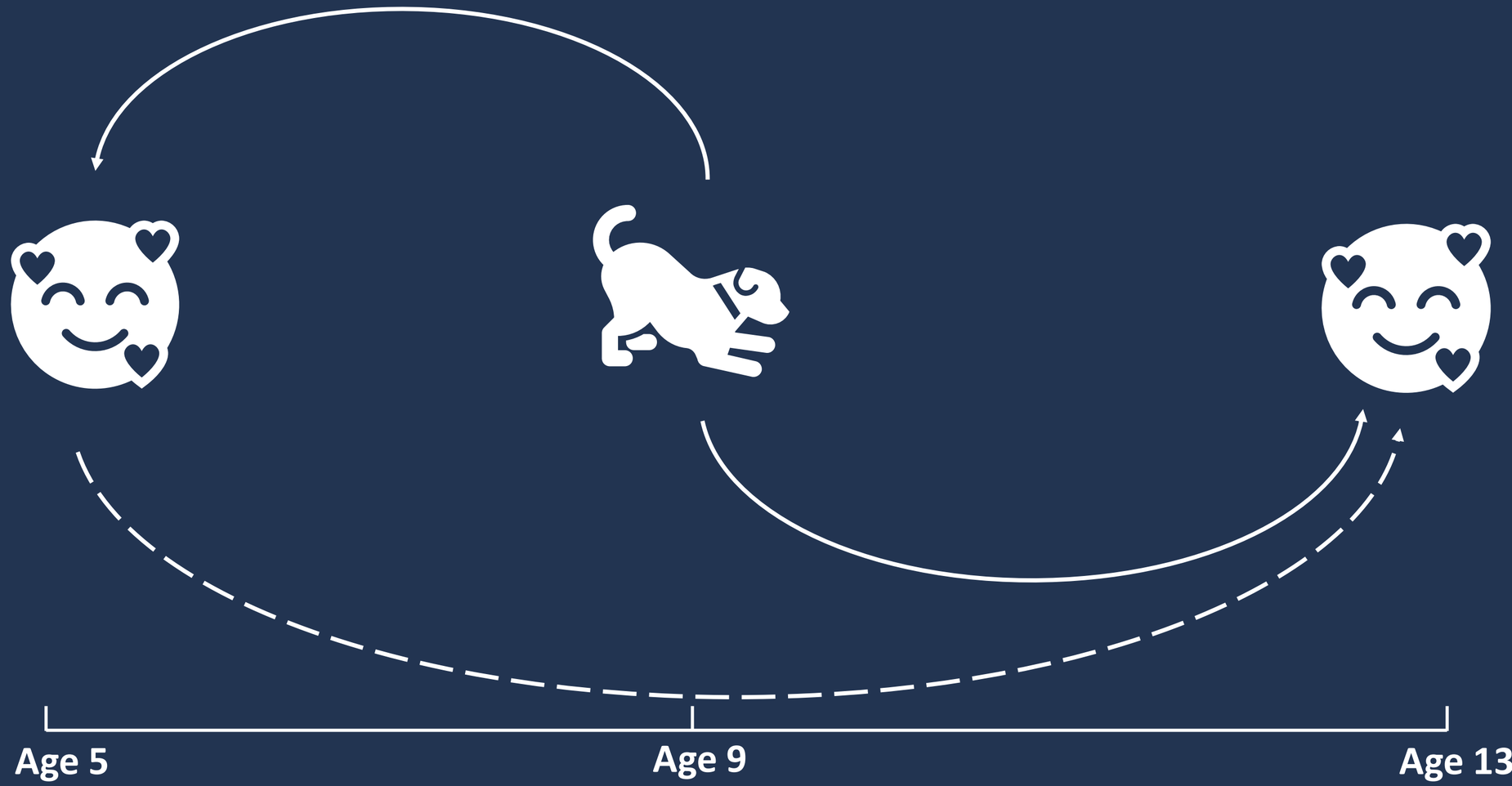
AN INSTITIÚID UM THAIGHDE EACNAMAÍOCHTA AGUS SÓISIALTA
ESRI ECONOMIC & SOCIAL RESEARCH INSTITUTE

2. Variables

- Pet ownership and interactions with pets
  - Pet ownership is collected at age 9 in both cohorts. Children were asked whether or not they have any pets and the types of pets.
  - Interaction with pets was obtained to proxy closeness with pets. The time use diary in cohort '98 for age 13 and 17/18 were used.
- Outcome variables
  - Strength and Difficulties Questionnaire (SDQ): prosocial, externalizing, internalising
  - Pianta – conflict scale, number of friends, close friends, and being bullied in the past 3 months
  - Meeting recommended time for hard and light physical activity
- Covariates: sociodemographic information (age, sex, migration history, hindrance in daily life), caregiver characteristics (parental education, employment, lone parent, parental distress, chronic illness), household information (rural/urban, house tenure, income, etc.), outcomes or other relevant covariates measured at earlier ages

AN INSTITIÚID UM THAIGHDE EACNAMAÍOCHTA AGUS SÓISIALTA
ESRI ECONOMIC & SOCIAL RESEARCH INSTITUTE

3. Methodology



AN INSTITIÚID UM THAIGHDE EACNAMAÍOCHTA AGUS SÓISIALTA
ESRI ECONOMIC & SOCIAL RESEARCH INSTITUTE

3. Methodology

Lagged Dependent Variable (LDV)

$$Y_{i1} = \beta_0 + \beta_1 Pet_{i1} + \gamma_1 Y_{i0} + \gamma_2 X_{i1} + \epsilon_{i1}$$

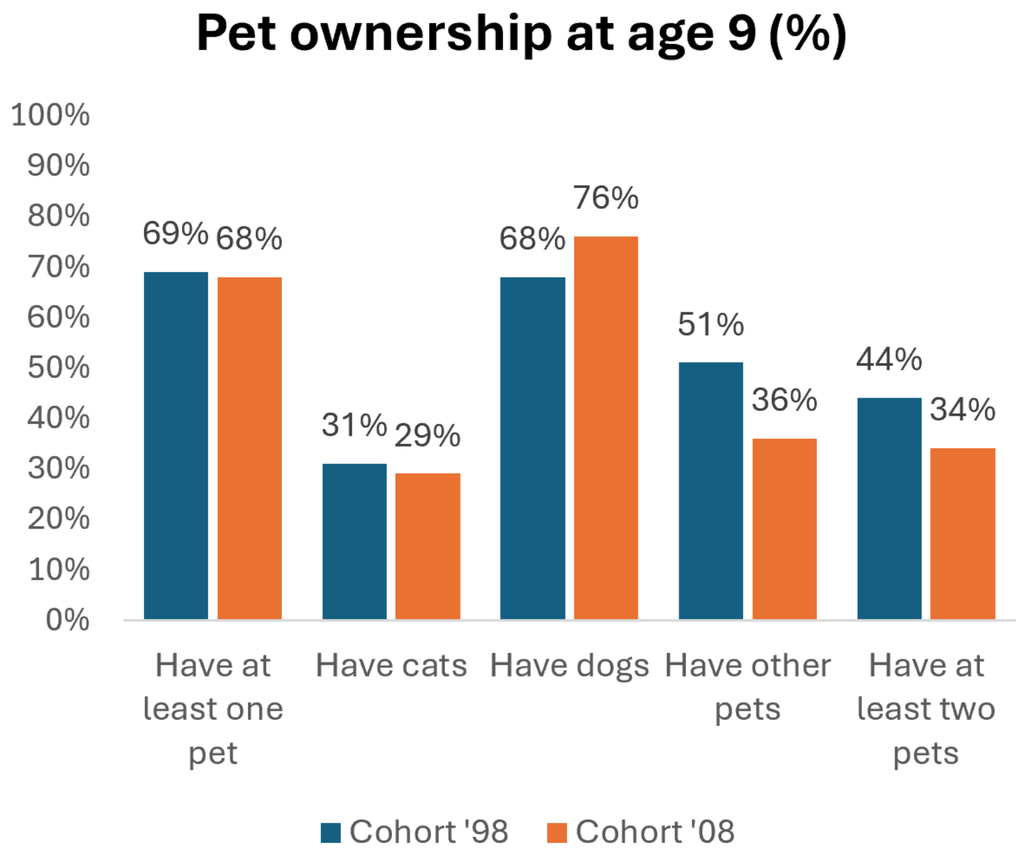
Correlated random effect (CRE) model controlling $\hat{x}$ (unobserved time invariant) and **inverse probability weighting (IPW)** to balance characteristics of pet vs. non-pet owners

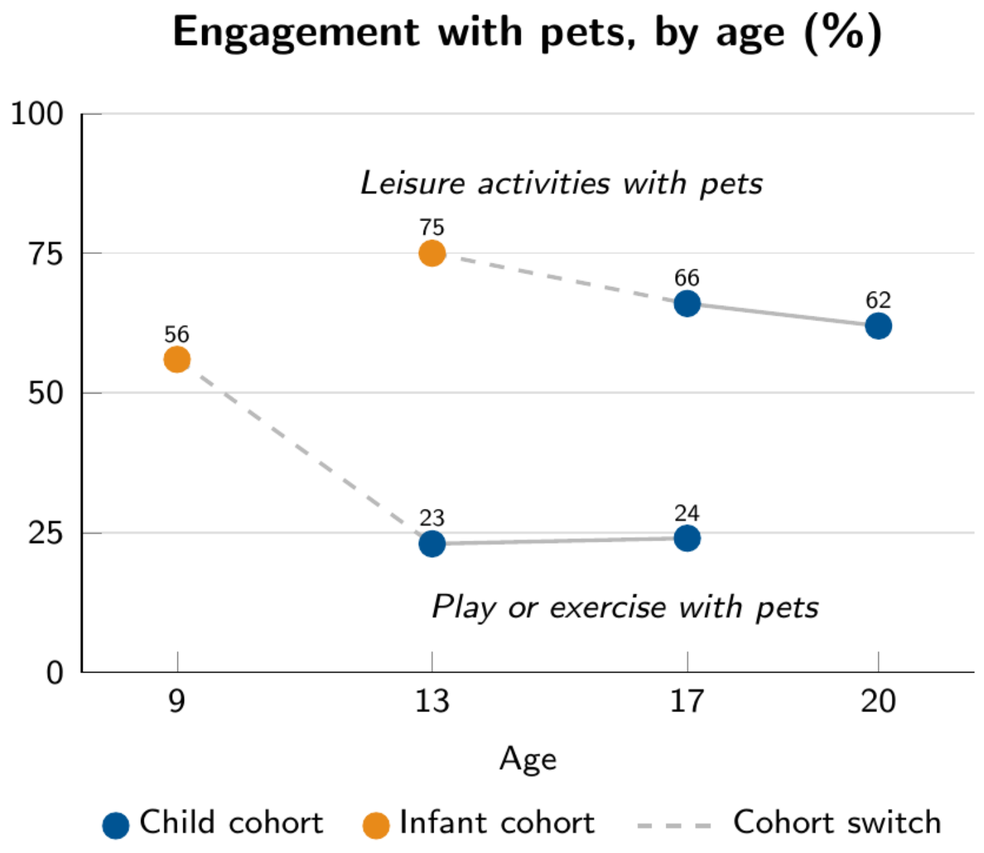
Heterogeneity tests

$$Y_{i1} = \beta_0 + \beta_1 Pet_{i1} + \beta_2 Female_{i1} + \beta_3 Female_{i1} \times Pet_{i1} + \gamma_1 Y_{i0} + \gamma_2 X_{i1} + \epsilon_{i1}$$

AN INSTITIÚID UM THAIGHDE EACNAMAÍOCHTA AGUS SÓISIALTA
ESRI ECONOMIC & SOCIAL RESEARCH INSTITUTE

4. Pet ownership among children in Ireland





Note: The weighted columns are calculated using cross-sectional survey weights provided in each wave.

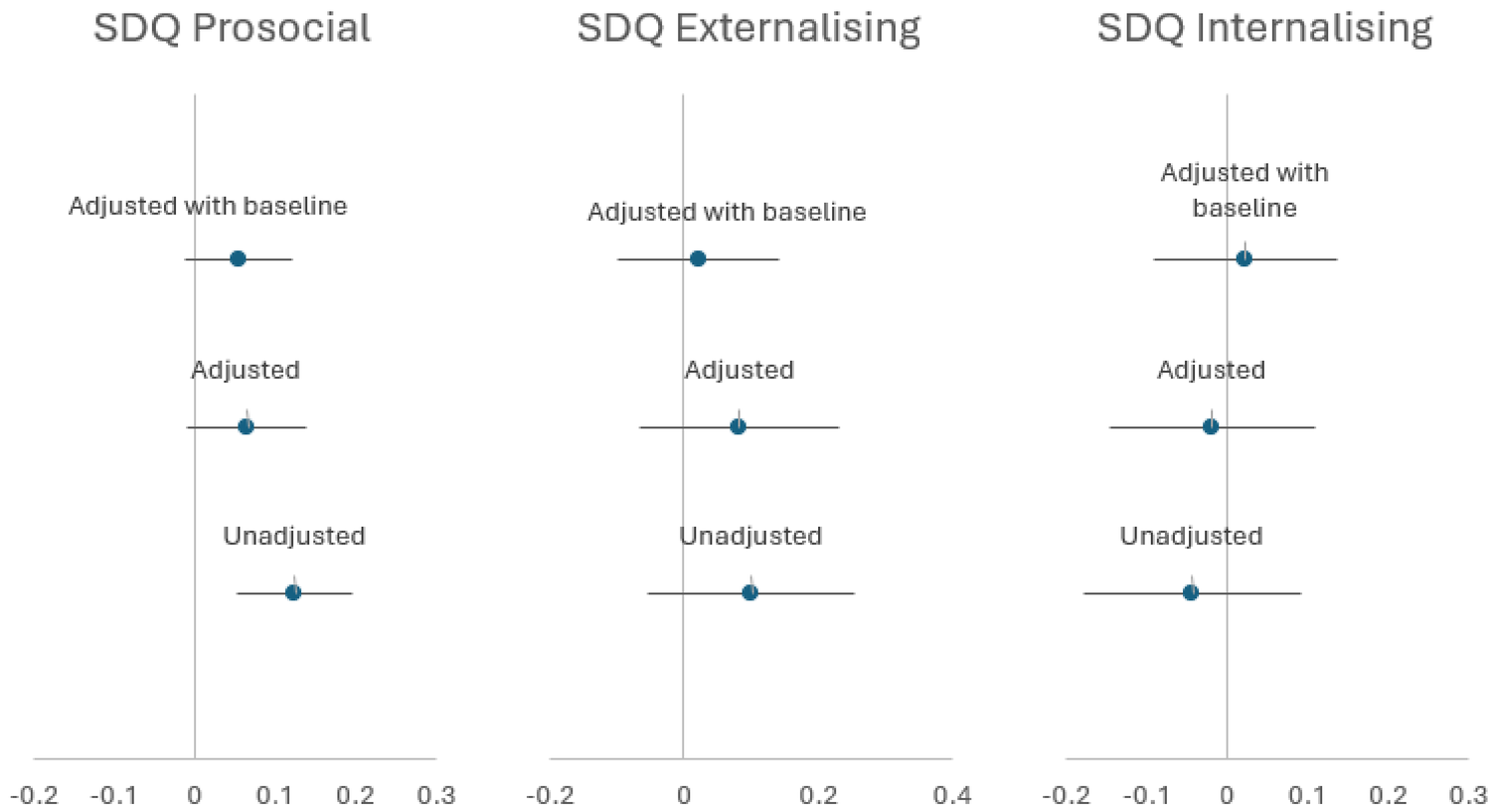
AN INSTITIÚID UM THAIGHDE EACNAMAÍOCHTA AGUS SÓISIALTA
ESRI ECONOMIC & SOCIAL RESEARCH INSTITUTE

4. What determines pet ownership among children?

Predictors	Cohort '98	Cohort '08
Demographic	Female (+), older siblings (+)	Female (+), older siblings (+), migration background (-), hindrance in daily life (+)
Caregiver characteristics	Education (-), lone parent (+), depression score (+), chronic disease (+)	Education (-), lone parent (+), depression score (+), chronic disease (+)
Household information	Rural areas (+), own house (+)	Rural areas (+), own house (+), household size (+), income (-)
Baseline socioemotion and behaviour		Externalising (+), internalising (-)

AN INSTITIÚID UM THAIGHDE EACNAMAÍOCHTA AGUS SÓISIALTA
ESRI ECONOMIC & SOCIAL RESEARCH INSTITUTE

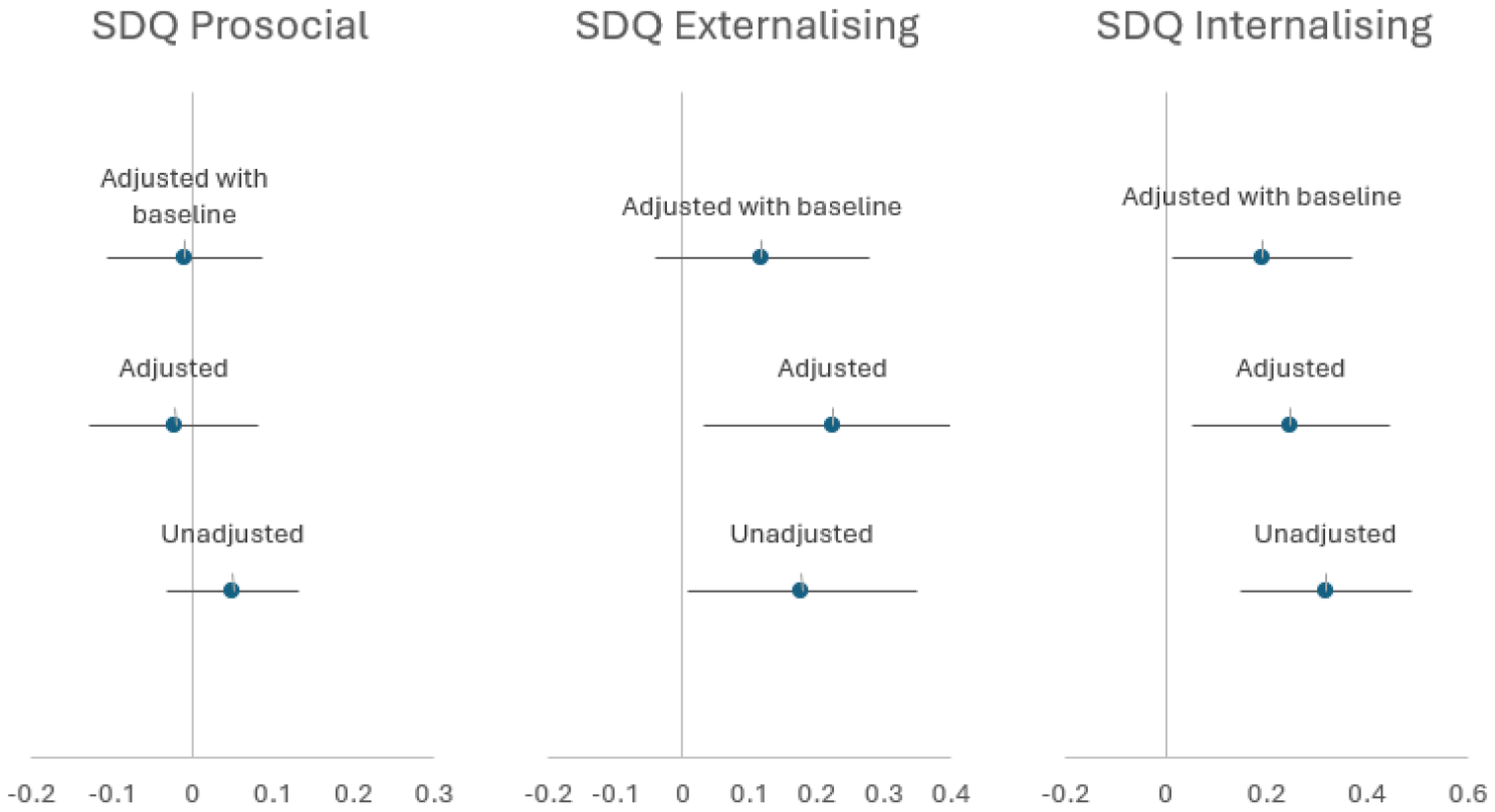
4. In Cohort '98, pet ownership is not associated with changes in SDQ scores among 13-year-olds



Note: Control variables include female, birthweight, presence of older sibling, history of migration, being hampered by disability, exposure to stress event(s), parental education, mother's employment, parental depression, parental chronic disease, living in urban/rural areas, housing tenure, household size, household income above median, and experience of economic difficulties. Estimated using LDV model and baseline control is each specific SDQ composite being measured at age 9.

AN INSTITIÚID UM THAIGHDE EACNAMAÍOCHTA AGUS SÓISIALTA
ESRI ECONOMIC & SOCIAL RESEARCH INSTITUTE

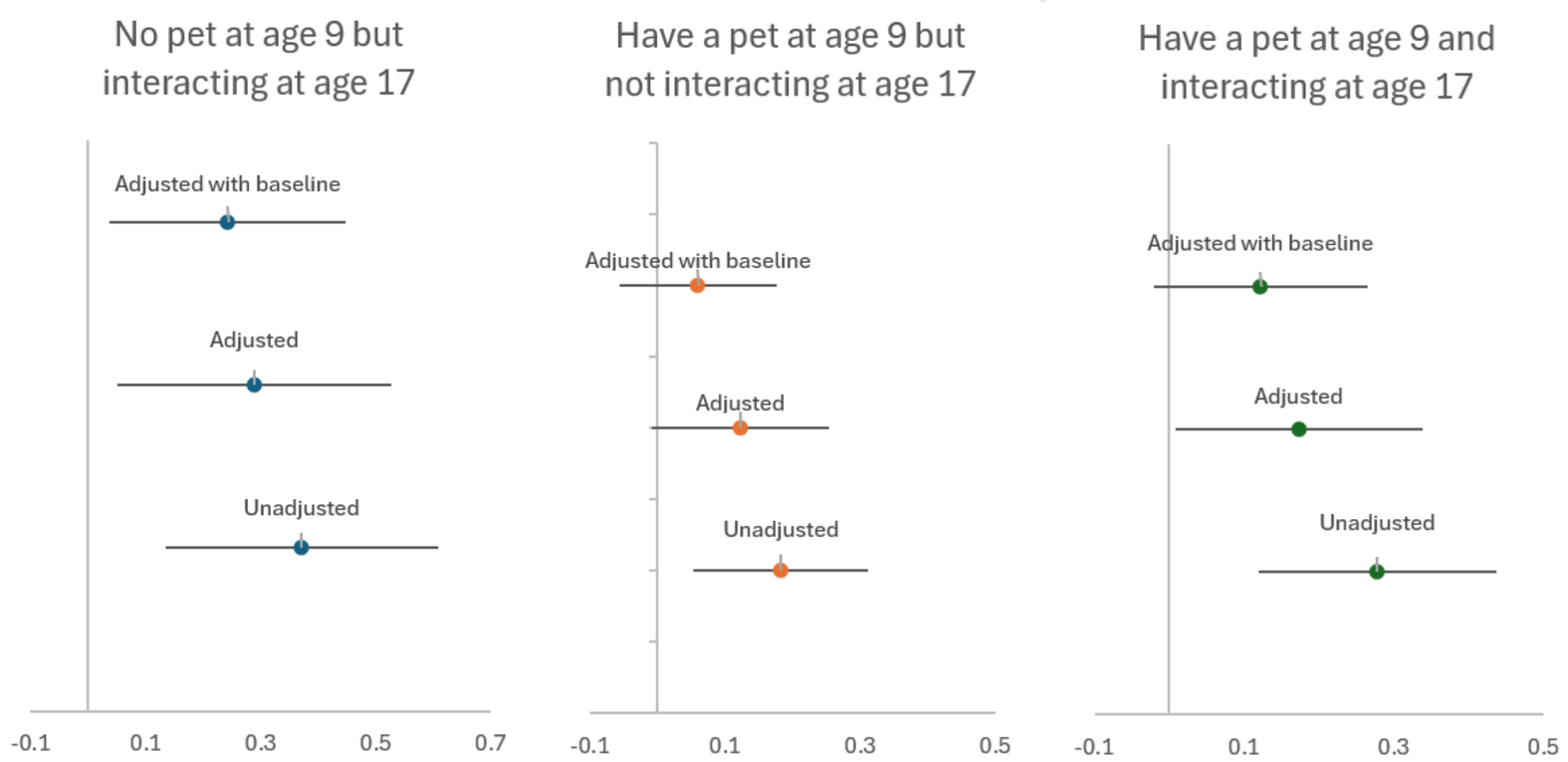
4. In Cohort '08, pet ownership is significantly associated with higher internalising SDQ among 13-year-olds



Note: Control variables include female, birthweight, presence of older sibling, history of migration, being hampered by disability, exposure to stress event(s), parental education, mother's employment, parental depression, parental chronic disease, living in urban/rural areas, housing tenure, household size, household income above median, and experience of economic difficulties. Estimated using LDV model and baseline control is each specific SDQ composite being measured at age 9.

AN INSTITIÚID UM THAIGHDE EACNAMAÍOCHTA AGUS SÓISIALTA
ESRI ECONOMIC & SOCIAL RESEARCH INSTITUTE

4. Among children aged 17 years old, playing or exercising with pets is linked with increased prosocial behaviour



Note: Control variables include female, birthweight, presence of older sibling, history of migration, being hampered by disability, exposure to stress event(s), parental education, mother's employment, parental depression, parental chronic disease, living in urban/rural areas, housing tenure, household size, household income above median, and experience of economic difficulties. Estimated using LDV model and baseline control is each specific SDQ composite being measured at age 13.

AN INSTITIÚID UM THAIGHDE EACNAMAÍOCHTA AGUS SÓISIALTA
ESRI ECONOMIC & SOCIAL RESEARCH INSTITUTE

4. The link with other outcomes

- Pet ownership
  - Pet ownership alone is not strongly associated with most behavioural, relationship, and physical health measures.
  - Pet ownership is associated with higher bullying reports among 13-year-olds (reverse causality).
- Interaction with pets
  - Interacting with pets is associated with less conflict with parents.
  - It is also associated with fewer friends.
  - Modest effect across all domains
- Boys and girls difference
  - Stronger link between interactions with pets and increased physical activity for girls than for boys.
  - No other difference across other outcomes.

AN INSTITIÚID UM THAIGHDE EACNAMAÍOCHTA AGUS SÓISIALTA
ESRI ECONOMIC & SOCIAL RESEARCH INSTITUTE

5. Discussion

- Pet ownership is associated with children, caregiver, and household characteristics. It is also associated with children's well-being in earlier ages.
- Pet ownership alone is not strongly associated with most socioemotional, behavioural, relationship, and physical health measures.
- Playing or exercising with pets is significantly linked with improved well-being, despite modest effect sizes.
- Policy implications:
  - Assess suitability of companion animals to family needs
  - Programs need to focus on building child-pet bond.

AN INSTITIÚID UM THAIGHDE EACNAMAÍOCHTA AGUS SÓISIALTA
ESRI ECONOMIC & SOCIAL RESEARCH INSTITUTE

References

1. Adams, E. K., Murray, K., & Christian, H. E. (2024). Effects of dog ownership on children's social-emotional development: findings from the PLAYCE cohort study. *Pediatric Research 2024 99:2*, *99*(2), 544–550. https://doi.org/10.1038/s41390-024-03721-3
2. Giraudet, C. S. E., Liu, K., McElligott, A. G., & Cobb, M. (2022). Are children and dogs best friends? A scoping review to explore the positive and negative effects of child-dog interactions. PeerJ, 10, e14532.
3. Goswami, H. (2011). Social Relationships and Children's Subjective Well-Being. *Social Indicators Research 2011 107:3*, *107*(3), 575–588. https://doi.org/10.1007/S11205-011-9864-Z
4. Human Animal Bond Research Institute (HABRI). (2022). *International Survey of Pet Owners &*
5. *Veterinarians*, https://habri.org/international-hab-survey/
6. Jalongo, M. R. (2015). An Attachment Perspective on the Child–Dog Bond: Interdisciplinary and International Research Findings. *Early Childhood Education Journal 2015 43:5*, *43*(5), 395–405.
7. Lippold, M. A., Davis, K. D., Lawson, K. M., & McHale, S. M. (2016). Day-to-day Consistency in Positive Parent–Child Interactions and Youth Well-Being. *Journal of Child and Family Studies 2016 25:12*, *25*(12), 3584–3592.
8. Meints, K., Brelsford, V. L., Dimolareva, M., Maréchal, L., Pennington, K., Rowan, E., & Gee, N. R. (2022). Can dogs reduce stress levels in school children? effects of dog-assisted interventions on salivary cortisol in children with and without special educational needs using randomized controlled trials. *PLOS ONE*, *17*(6), e0269333.
9. Polheber, J. P., & Matchock, R. L. (2013). The presence of a dog attenuates cortisol and heart rate in the Trier Social Stress Test compared to human friends. *Journal of Behavioral Medicine 2013 37:5*, *37*(5), 860–867. https://doi.org/10.1007/S10865-013-9546-1
10. Purewal, R., Christley, R., Kordas, K., Joinson, C., Meints, K., Gee, N., & Westgarth, C. (2024). Companion animals and child development outcomes: longitudinal and cross-sectional analysis of a UK birth cohort study. *BMC Pediatrics*, *24*(1). https://doi.org/10.1186/s12887-024-05049-7
11. Teo, J. T., Johnstone, S. J., Römer, S. S., & Thomas, S. J. (2022). Psychophysiological mechanisms underlying the potential health benefits of human-dog interactions: A systematic literature review. *International Journal of Psychophysiology*, *180*, 27–48. https://doi.org/10.1016/J.IJPSYCHO.2022.07.007

AN INSTITIÚID UM THAIGHDE EACNAMAÍOCHTA AGUS SÓISIALTA
ESRI ECONOMIC & SOCIAL RESEARCH INSTITUTE

Thank you

Elza Elmira	elza.elmira@esri.ie
Elish Kelly	elish.kelly@esri.ie
Melane Pilek	melane.pilek@esri.ie
John Curtis	john.curtis@esri.ie
Emer Smyth	emer.smyth@esri.ie

Sign up to our Newsletter

ESRI.ie

Economic and Social Research Institute (ESRI)

Economic and Social Research Institute (ESRI)

AN INSTITIÚID UM THAIGHDE EACNAMAÍOCHTA AGUS SÓISIALTA
ESRI ECONOMIC & SOCIAL RESEARCH INSTITUTE