

ARTICLE

Trends in the use of care among people aged 65–85 with cognitive impairment in the Netherlands

Mari Aaltonen^{1,2*}, Jani Raitanen^{1,3}, Hannie Comijs⁴ and Marjolein Broese van Groenou⁵

¹Faculty of Social Sciences and Gerontology Research Center, University of Tampere, Tampere, Finland,

²Institute for Advanced Social Research, University of Tampere, Tampere, Finland, ³UKK-Institute for Health Promotion Research, Tampere, Finland, ⁴Department of Psychiatry, Amsterdam Public Health Research Institute, VU University Medical Centre and GGZ inGeest, Amsterdam, The Netherlands and ⁵Department of Sociology, Vrije Universiteit Amsterdam, Amsterdam, The Netherlands

*Corresponding author. Email: mari.s.aaltonen@uta.fi

(Received 04 May 2024; revised 10 May 2024; accepted 12 May 2024)

Abstract

Observation of long-term trends within countries is needed to increase insight into how policy initiatives are reflected in the use of care over time in addition to individual determinants of care use. In the past decades, Dutch care policies have favoured homecare and reduced the availability of institutional care which extended the care responsibilities of formal and informal care-givers at home. This study investigates the changes in the use of informal and formal homecare, community services and residential care among cognitively impaired older adults over time in the Netherlands. In addition, of special interest here are the associations of the presence of a spouse, other family members or social network with care use, and the interdependency between the use of different types of care. The study employs the Longitudinal Aging Study Amsterdam (LASA) covering the years 1992–2012, analysed with generalised estimating equations. The data consisted of 1,022 observations gathered from 813 respondents aged 65–85. The respondents were cognitively impaired according to the age- and education-standardised Mini-Mental State Examination score. The analyses took into account several individual determinants of care use. The use of informal care and residential care decreased while the use of formal homecare and community services remained the same. Simultaneously, the proportion of those who did not use the studied care types increased. The contribution of partners in informal care decreased. Informal care and formal homecare use increasingly became complementary services

Keywords: cognitive impairment; homecare services; informal care; residential care; trends, Longitudinal Aging Study Amsterdam (LASA)

JEL classification: Q11; Q12; D81; M31

MSC Codes: 11J82; 11Y60; 33C20; 33C60

Abbreviations: AF: aerobic fitness, PTH: parathyroid hormone

1. Introduction

Let M be an n -dimensional smooth compact Riemannian manifold with boundary $\Sigma = \partial M$. The Steklov eigenvalue problem on M consists in finding all numbers $\sigma \in \mathbb{R}$ for which there exists a nonzero function $u \in C^\infty(M)$, which solves

$$\Delta u = 0 \quad \text{in } M, \quad (1)$$

Here, Δ is the Laplacian induced from the Riemannian metric g on M , and ∂_ν is the outward pointing normal derivative along the boundary Σ . The Steklov eigenvalues form an unbounded increasing sequence $0 = \sigma_0 \leq \sigma_1 \leq \sigma_2 \leq \dots \rightarrow \infty$, each of which is repeated according to its multiplicity. Note that if M is connected, then $\sigma_1 > 0$.

Presidential scholars have long emphasised the role of the executive branch in federal policymaking. Presidents develop policies formally through unilateral action, but they also pursue their objectives in the legislative arena. Governors fill an analogous role within their states. They manage the bureaucracy and help set the policy agenda through speeches, calling special sessions or taking unilateral action. I analyse factors that explain gubernatorial use of executive orders, and I consider how these same executive orders influence statute adoption, using lesbian, gay, bisexual and transgender (LGBT) employment protections as an illustrative case. Presidential scholars have long emphasised the role of the executive branch in federal policymaking. Presidents develop policies formally through unilateral action, but they also pursue their objectives in the legislative arena. Governors fill an analogous role within their states. They manage the bureaucracy and help set the policy agenda through speeches, calling special sessions or taking unilateral action. I analyse factors that explain gubernatorial use of executive orders, and I consider how these same executive orders influence statute adoption, using lesbian, gay, bisexual and transgender (LGBT) employment protections as an illustrative case.

Presidential scholars have long emphasised the role of the executive branch in [Barclay and Fisher \(2003\)](#) federal policymaking. Presidents develop policies formally through unilateral action, but they also pursue their objectives in the legislative arena. Governors fill an analogous role within their states. They manage the bureaucracy and help set the policy agenda through speeches, calling special sessions or taking unilateral action. I analyse factors that explain gubernatorial use of executive orders, and I consider how these same executive orders influence statute adoption, using lesbian, gay, bisexual and transgender (LGBT) employment protections as an illustrative case. Presidential scholars have long emphasised the role of the executive branch in federal policymaking. Presidents develop policies formally through unilateral action, but they also pursue their objectives in the legislative arena. Governors fill an analogous role within their states. They manage the bureaucracy and help set the policy agenda through speeches, calling special sessions or taking unilateral action. I analyse factors that explain gubernatorial use of executive orders, and I consider how these same executive orders influence statute adoption, using lesbian, gay, bisexual and transgender (LGBT) employment protections as an illustrative case. They manage the bureaucracy and help set the policy agenda through speeches, calling special sessions or taking unilateral action. I analyse factors that explain gubernatorial use of executive orders, and I consider how these same executive orders influence statute adoption, using lesbian, gay, bisexual and transgender (LGBT) employment protections as an illustrative case.

Once data are disseminated, whatever contractual or other obligations are placed on those receiving [Berry and Berry \(1990, 1999\)](#) the data, the data are effectively out of a

data providers' control. Data providers must be certain that the data disseminated do not provide a risk of disclosure necessitating a reduction in the detail available, or they are constrained to using a resource intensive auditing regime, and are likely to discover any data misuse only after it has happened. Once data are disseminated, whatever contractual or other obligations are placed on those receiving the data, the data are effectively out of a data providers' control. Data providers must be certain that the data disseminated do not provide a risk of disclosure necessitating a reduction in the detail available, or they are constrained to using a resource intensive auditing regime, and are likely to discover any data misuse only after it has happened.

Presidential scholars have long emphasised the role of the executive branch in federal policymaking. Presidents develop policies formally through unilateral action, but they also pursue their objectives in the legislative arena. Governors fill an analogous role within their states. They manage the bureaucracy and help set the policy agenda through speeches, calling special sessions or taking unilateral action. I analyse factors that explain gubernatorial use of executive orders, and I consider how these same executive orders influence statute adoption, using lesbian, gay, bisexual and transgender (LGBT) employment protections as an illustrative case. Presidential scholars have long emphasised the role of the executive branch in federal¹ policymaking.

2. Gubernatorial and presidential use of executive orders across the various states

Presidents develop policies formally through unilateral action, but they also pursue their objectives in the legislative arena. Governors fill an analogous role within their states. They manage the bureaucracy and help set the policy agenda through speeches, calling special sessions or taking unilateral action. I analyse factors that explain gubernatorial use of executive orders, and I consider how these same executive orders influence statute adoption, using lesbian, gay, bisexual and transgender (LGBT) employment protections as an illustrative case.

2.1. *Presidential use of executive orders is largely consistent with expectations and previous literature*

The remainder of the findings is largely consistent [Berry et al. \(1998\)](#) with expectations and previous literature. Diffusion plays a positive role on states adopting sexual orientation² protections; yet, it is not statistically significant in explaining the adoption of transgender-inclusive statutes. As anticipated, legislatures are more likely to adopt both forms of legislation in states where the citizens are more liberal.

2.1.1. *Third level heading with two line text style format with two line text style format*

They manage the bureaucracy and help set the policy agenda through speeches, calling special sessions or taking unilateral action. I analyse factors that explain gubernatorial use of

¹ Governor Kate Brown of Oregon became governor in 2015, making her the first governor in the United States to be openly LGBT while in office.

² The courts and various agencies also create their own form of policy. However, I focus primarily on executive orders and their influence on statute adoption for this article.

executive orders, and I consider how these same executive orders influence statute adoption, using lesbian, gay, bisexual and transgender (LGBT) employment protections as an illustrative case. The descriptive statistics were adjusted for age and gender, using analysis of variance in every time period so that the changes in care use between the observation years would not reflect age and gender differences in different time periods but rather the differences between them.

Results

Determinants of executive orders

The probability of a state adopting legislation protecting [Boehmke \(2009\)](#) sexual orientation increases by a factor of 1.11 for a one-unit increase in Liberal Citizen Ideology, and the probability increases by a factor of 2.24 for a five-unit increase in citizen ideology. This effect is even more pronounced for transgender protections. A one-unit increase in Liberal Citizen Ideology increases the likelihood of adoption by a factor of 1.20, and the probability increases by a factor of 2.44 for a five-unit increase in citizen ideology. The findings regarding the Evangelical population hint at a similar conclusion.

Measurements

Outcome variables

A one-unit increase in Liberal Citizen Ideology increases the likelihood of adoption by a factor of 1.20, and the probability increases by a factor of 2.44 for a five-unit increase in citizen ideology. The findings regarding the Evangelical population hint at a similar conclusion. A one-unit increase in Liberal Citizen Ideology increases the likelihood of adoption by a factor of 1.20, and the probability increases by a factor of 2.44 for a five-unit increase in citizen ideology.

- Phase 1: acute fever with enlargement of the spleen and liver;
- Phase 2: acute enlargement of the spleen and liver, with a low fever;
- Phase 3: cachexia, with no fever.

A one-unit increase in Liberal Citizen Ideology increases the likelihood of adoption by a factor of 1.20, and the probability increases by a factor of 2.44 for a five-unit increase in citizen ideology ([Figure 1](#)).

Estimation

Using Multilevel Event History Analysis, with the state/year as the unit of analysis [Bolton and Thrower \(2015\)](#), I evaluate the following:

1. The probability that a governor i will issue an executive order protecting LGBT employees in time t , given that no executive order is in place.
They manage the bureaucracy and help set the policy agenda through speeches, calling special sessions or taking unilateral action.
2. The probability that the state legislature i will adopt an LGBT-inclusive employment nondiscrimination statute in time t , given that it has not already done.



Figure 1. This is a widefig. This is an example of long caption this is an example of long caption this is an example of long caption this is an example of long caption.

Note: All proportions are adjusted for the predisposing, enabling and need variables.



Figure 2. This is an example of short caption this is an example of short caption.

Multilevel modelling accounts for these differences and within-state patterns of adoption seen throughout the years [Brewer \(2007\)](#). The effect of determinants that lead to successful statute adoption of LGBT protections share common elements, but differ based on the type of protections added – sexual orientation versus gender identity in [Figure 2](#).

- The probability that a governor i will issue an executive order protecting LGBT employees in time t , given that no executive order is in place.
They manage the bureaucracy and help set the policy agenda through speeches, calling special sessions or taking unilateral action.
- The probability that the state legislature i will adopt an LGBT-inclusive employment nondiscrimination statute in time t , given that it has not already done.
 - The elderly living independently with a spouse enjoy greater subjective wellbeing than those co-resident with their adult children, and this is more likely to be the case for the elderly in Hong Kong than for those in mainland China and Taiwan.
 - The presence of grandchildren is associated with the elderly's subjective wellbeing to a lesser degree in Hong Kong than in mainland China and Taiwan

Multilevel modelling accounts for these differences and within-state patterns of adoption seen throughout the years. The effect of determinants that lead to successful statute adoption of LGBT protections share common elements, but differ based on the type of protections added – sexual orientation versus gender identity.

Consequently, governors may elect to pursue legislation to adopt more expansive and enduring policies by negotiating with the legislators first. Governors that see legislation as likely to pass in the legislature, or governors with weaker institutional powers to dictate administration policies, are especially likely to take this approach.

A one-unit increase in Liberal Citizen Ideology increases the likelihood of adoption by a factor of 1.20, and the probability increases by a factor of 2.44 for a five-unit increase in citizen ideology. In addition to individual determinants of care, the allocation of care can also change over time.

Table 1. Tables which are too long to fit, should be written using the “table*” environment as shown here.

Projectile	Energy	σ_{calc}	σ_{expt}	Energy	σ_{calc}	σ_{expt}
Element 3	990 A	1168	1547 ± 12	780 A	1166	1239 ± 100
Element 4	500 A	961	922 ± 10	900 A	1268	1092 ± 40
Element 3	990 A	1168	1547 ± 12	780 A	1166	1239 ± 100
Element 4 ^a	500 A	961	922 ± 10	900 A	1268	1092 ± 40
Element 3	990 A	1168	1547 ± 12	780 A	1166	1239 ± 100
Element 4	500 A	961	922 ± 10	900 A	1268	1092 ± 40
Element 3	990 A	1168	1547 ± 12	780 A	1166	1239 ± 100
Element 4	500 A	961	922 ± 10	900 A	1268	1092 ± 40

Note: This is an example of table footnote this is an example of table footnote this is an example of table footnote this is an example of table footnote this is an example of table footnote
^aThis is an example of table footnote

Executive orders become appealing once more if efforts in the legislature fail because of a stalemate or changing partisan dynamics later in the executive’s tenure in [Table 1](#). This leads to the following hypotheses:

LM: I would like to ask you how you feel about your leg.
Alan: About what?
LM: Your leg.
Alan: What about it? Alright ... Why? What’s up with it?

The final hypotheses test the strategic model applied to the state level, which asserts that governors are more likely to issue executive orders when confronting unfavourable political conditions in the legislature.

Driving to the nursing home
Ian, Eric, Mommy, Aunty, and me
Anxious, scared, feeling blue
Going to see my Grandpa.

Looking at him in the bed
Clutching my CD
Looking for the CD player
Ah, it’s over here.

Putting it in
Pressing play
Music in our ears.

The final covariates analyse social factors that influence gubernatorial use of executive orders. These results differ across the models. Diffusion is not statistically significant for the sexual orientation model, but reaches conventional statistical significance for the analysis of gender identity protections. This tentatively suggests that governors are more likely to issue executive orders as more neighbouring states add similar protections. Governors are

more likely to issue executive orders to protect sexual orientation when the states are more liberal, and composed of fewer Evangelicals. Both terms reach conventional statistical significance. These discrepancies may be related to the changing strategies of governors and LGBT advocates in later years, or it may be a reflection of the late adopters that added protections through executive orders, i.e. the remaining governors in states that were still “at risk” of adopting transgender protections were in more socially conservative states. Both models show that governors are more likely to issue protections later into the time frame, and the variance across the states is statistically significant.

Diffusion plays an inconsistent role in policy adoption, but overall it seems that the diffusion of pro-LGBT policies encourages the issuance of executive orders and adoption of similar legislation. However, diffusion does not come up as statistically significant and positive across the board, and thus caution should be taken when examining its role in policy adoption. Governors used executive orders more commonly to establish protections for sexual orientation, whereas legislation was more prevalent for gender identity; therefore, this might explain why diffusion is only statistically significant in those respective models. One possible explanation for why diffusion of LGBT protections does not function as previous diffusion studies suggest is because states consider several competing policies at once. Throughout the time periods, states do not simply consider adopting one form of the protections. Rather, neighbouring states adopt different variants of these policies (sexual orientation or gender identity) through their executive and legislative branches. This process cannot be captured in a single diffusion variable.

Supplementary material. The supplementary material for this article can be found at <https://doi.org/10.1017/S014686X18000752>

Acknowledgments. The authors also wish to thank Lucie Laporte-Devlyder, Jordan Zlatev, Georgios Stampoulidis, Joost Van de Weijer, Katie Hoemann, and two anonymous reviewers for their invaluable feedback and comments on earlier versions of this paper.

Author contributions.

Joint first authors: Text to be come later.

Conceptualization: Text to be come later.

Data curation: Text to be come later.

Formal analysis: Text to be come later.

Funding acquisition: Text to be come later.

Investigation: Text to be come later.

Methodology: Text to be come later.

Funding statement. This study was funded by the Deutsche Forschungsgemeinschaft (DFG) through the Collaborative Research Center 1252 Prominence in Language, and by Mobility Grants from Division 7, Research Management, University of Cologne, which we gratefully acknowledge.

Competing interests. The authors declare none.

Ethical standards. The Longitudinal Aging Study Amsterdam (LASA) has received approval by the medical ethics committee of the VU University Medical Center. Signed informed consent was obtained from all study participants. For the present study, the permission to use data was obtained from the LASA steering group using the official analysis proposal form (http://www.lasa-vu.nl/data/availability_data/availability_data.htm).

Notes

1. Surapong remained in the party and went on to become finance minister.
2. Interview with Dr. Piya Netrawichien, member of the “War Room” committee. He stated that Sudarat was “a good administrator. She studied hard and always asked questions. She worked very hard.”
3. Interview with author, 2007.

4. The core of their health platform for the 2001 elections was to expand the VHC program to cover all Thais within three years. In addition, their platform included preventive policies, such as free physicals and basic vaccinations. The internal party changes to policymaking are also observable: The Democrats appointed Burunaj Samutharak, a graduate of the Harvard School of Public Health, to be in charge of their health policy, who was a key player in the drafting of the National Health Act and helped formulate detailed policy for the party.
5. The second was a counterfactual scenario: I show that following the 1984 financial crisis, where there were similar hits to health outcomes and thus the demand, that there was no response from any political party in the health arena.

References

- Alders P, Comijs H and Deeg DJH** (2016) Changes in admission to long-term care institutions in the Netherlands: comparing two cohorts over the period 1996–1999 and 2006–2009. *European Journal of Ageing* **14**, 123–131.
- Barclay S and Fisher S** (2003) The states and the differing impetus for divergent paths on same-sex marriage, 1990–2001. *Policy Studies Journal* **31**, 331–352.
- Berry FS and Berry WD** (1990) State lottery adoptions as policy innovations: an event history analysis. *American Political Science Review* **84**, 395–415.
- Berry FS and Berry WD** (1999) Innovation and diffusion models in policy research. In Sabatier PA and Weible CM (eds.), *Theories of the Policy Process*. Berry and Berry-Boulder, CO: Westview Press, 307–360.
- Berry WD, Ringquist EJ, Fording RC and Hanson RL** (1998) Measuring citizen and government ideology in the American States, 1960–93. *American Journal of Political Science* **42**, 327–348.
- Boehmke FJ** (2009) Approaches to modeling the adoption and diffusion of policies with multiple components. *State Politics & Policy Quarterly* **9**, 229–252.
- Bolton A and Thrower S** (2015) Legislative capacity and executive unilateralism. *American Journal of Political Science* **60**, 649–663.
- Brewer PR** (2007) *Value War: Public Opinion and the Politics of Gay Rights*. New York: Rowman & Littlefield Publishers.
- Burke JP** (1992) *The Institutional Presidency*. Baltimore: John Hopkins University Press.
- Council of State Governments (2014) The Book of States 2014. Council of State Governments <http://knowledgecenter.csg.org/kc/category/content-type/bos-2014> (accessed 10 October 2014).

Appendix 1. Description of self-organised maps

Self-organised maps are generally used to classify and extract relationships between the different variables that are related to a specific problem. Therefore, the objective was to cluster those residents with similar characteristics in terms of their physical and cognitive conditions, and to assess if these were somehow related to the use of physical restraints.

We conducted a non-supervised training. The analysis generated a spatial distribution of the residents in a two-dimensional map formed by neurons. The size of the network or map was (20 × 10) and each neuron was hexagonal with six neighbouring neurons. When running the analysis, the training begins and, after several data interactions, residents were assigned to a neuron which had a weight vector that changed during the competitive process. The procedure for placing a data vector on the map is to find the node with the closest weight vector, for instance, by having the smallest metric distance to the data space vector. Based on these distances, residents with equal characteristics were placed in the same neuron within the map; those with common characteristics were grouped in the same area and consequently separated from those that were not similar