ESCAP
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Stats Café
Good coffee makes your day, but good data helps you decide.

What is the CRVS Applied Research Training?

9 October 2025
11:00-12:15 pm (UTC+7)

Asia-Pacific Stats Café: A collaborative session with United Nations Economic Commission for Africa

Join us in this session to learn how the CRVS Applied Research Training (CART) is equipping practitioners to design and conduct applied research that strengthens civil registration and vital statistics systems **across the Africa and Asia-Paicific region**. This Stats Café session will provide an overview of this training opportunity, and feature insights from past participants.

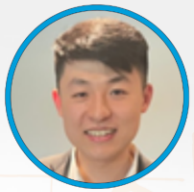
Register here:
https://forms.office.com/e/49EwmPtpxA

Join the meeting:
https://rebrand.ly/ciskkg9

Speakers:



S.T.C. Gaveshika
Director, Department of Census and Statistics Sri Lanka



Li Qi
Public Health Physician, Shanghai CDC, China



Stephen Kasumba
Manager Monitoring and Evaluation, NIRA-Uganda

Moderator:



Liako Mokoena
Civil Registration Officer, National Identity and Civil Registry, Lesotho



Nicolas Patoine-Hamel
Technical Specialist, Statistics Division, ESCAP

United Nations
Economic Commission for Africa

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STATS CAFE
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but good data helps you decide.

Agenda for the session

- Brief introduction to the CART initiative
- Participant projects and experiences:
  - **S.T.C. Gaveshika** (Sri Lanka)
  - **Stephen Kasumba** (Uganda)
  - **Li Qi** (China)
  - **Liako Mokoena** (Lesotho)
- Q&A

Get every one in the picture

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DATA FOR HEALTH INITIATIVE



What is the CART?:

CRVS Applied Research Training

Nicolas Patoine-Hamel
CART Coordinator

What is Civil Registration and Vital Statistics (CRVS)?



- **Record of vital events**
  - **Continuous**
  - **Permanent**
  - **Compulsory**
  - **Universal**

CRVS and the 2030 Agenda for Sustainable Development

Well-functioning CRVS systems are:

- Essential for **planning and implementing SDGs** related to social inclusion, health, education, good governance, etc.
- Source of 72+ of 230 SDG indicators

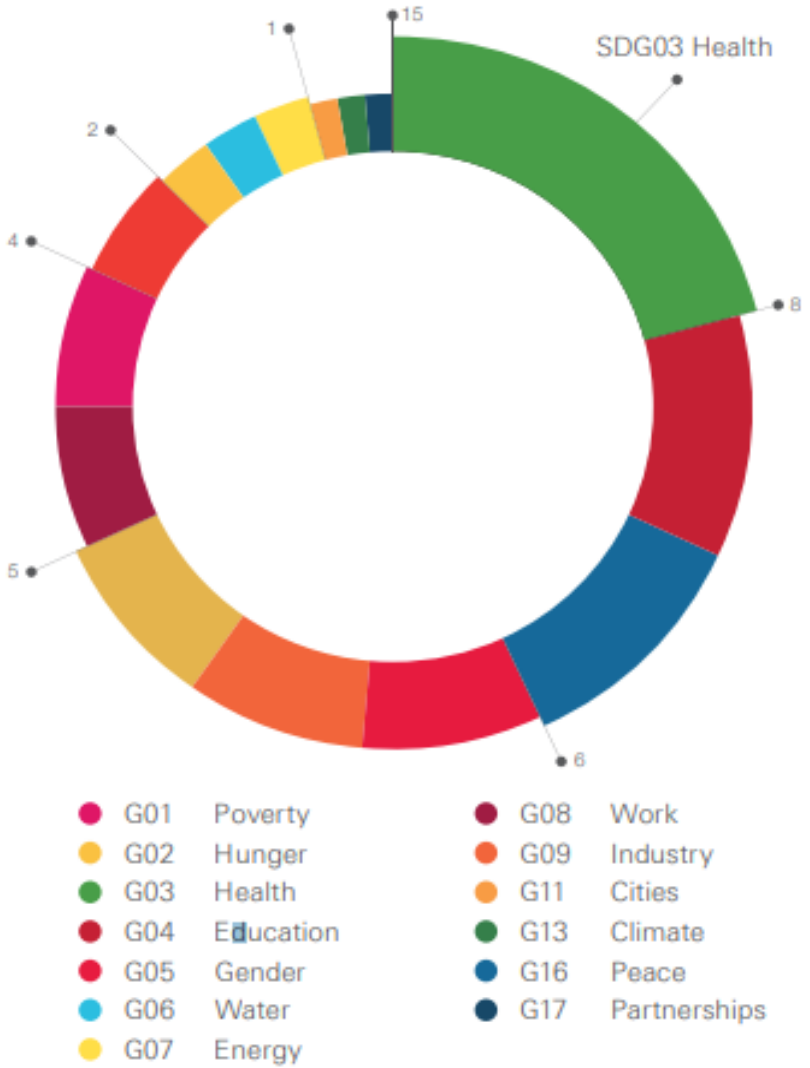


Figure: SDG indicators that have source data from a CRVS system



Target 16.9

By 2030, provide legal identity for all, including birth registration

Indicator 16.9.1

Proportion of children under 5 years of age whose births have been registered with a civil authority, by age



Target 17.19

By 2030, build on existing initiatives to develop measurements of progress on sustainable development that complement gross domestic product, and support statistical capacity-building in developing countries

Indicator 17.19.2

Proportion of countries that (a) have conducted at least one population and housing census in the last 10 years; and (b) have achieved **100 percent birth registration** and **80 percent death registration**

CRVS research

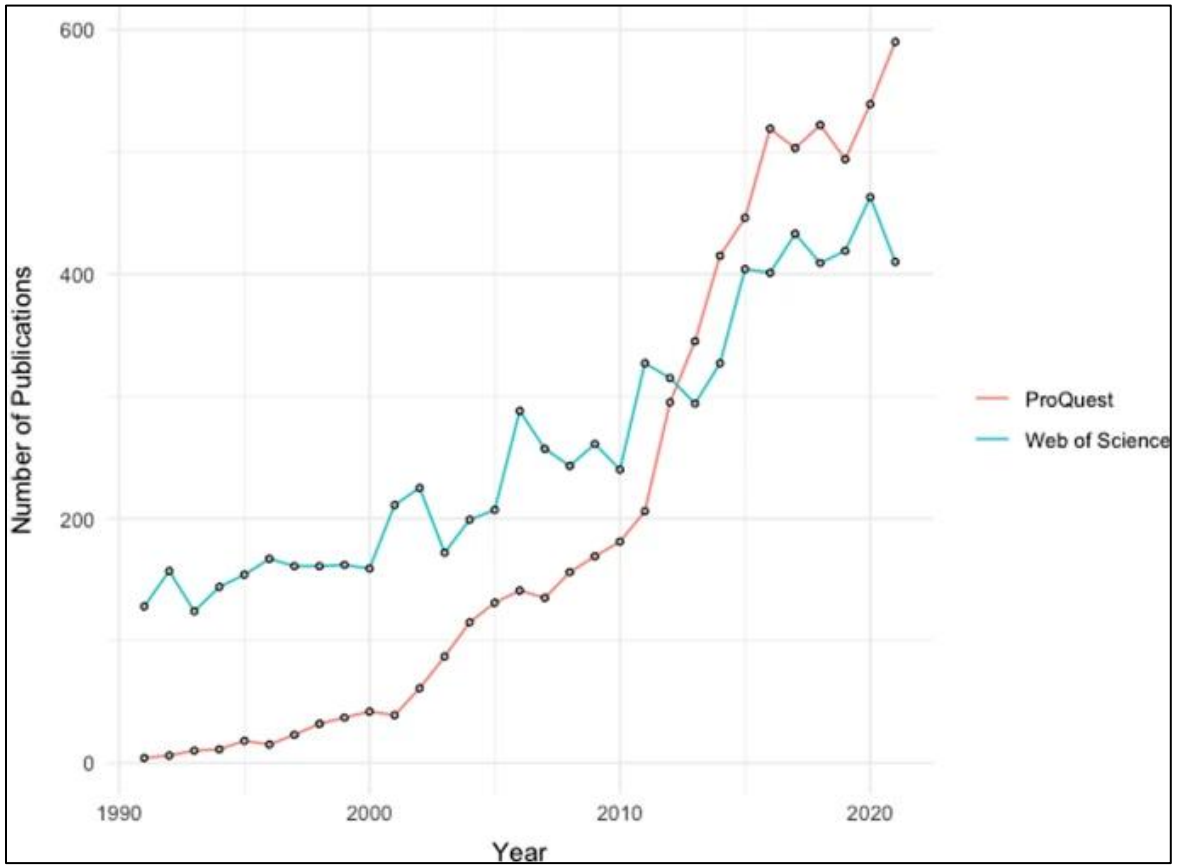


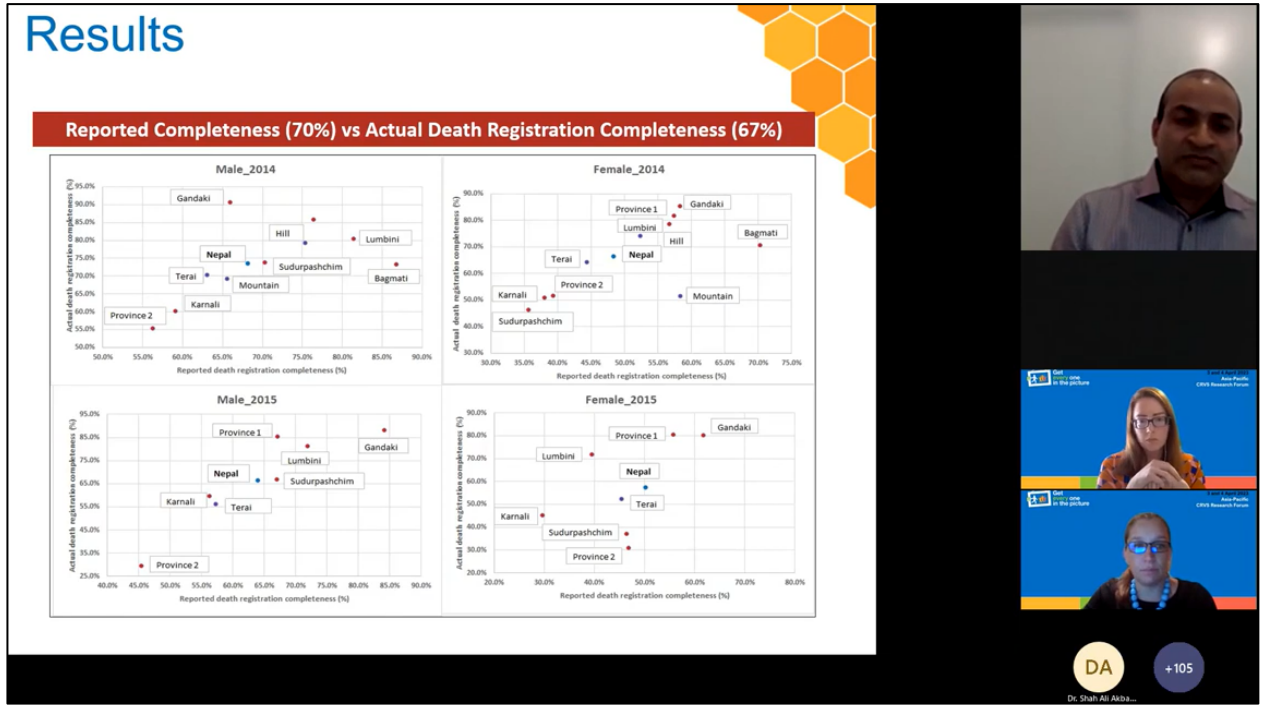
Figure 1: Peer-reviewed publications on CRVS 1991-2021

Graph from Silva, R. Population perspectives and demographic methods to strengthen CRVS systems: introduction. Genus 78, 8 (2022) https://doi.org/10.1186/s41118-022-00156-8

- **Inclusive equity:** More CRVS research ensures equitable inclusion of all societal groups, fostering fairness and access to services.
- **Policy precision:** Research findings enhance policymaking by providing accurate data and insights for targeted interventions.
- **Methodological evolution:** Research drives innovation in methods, adapting to changing needs, technology or processes for CRVS systems improvements.

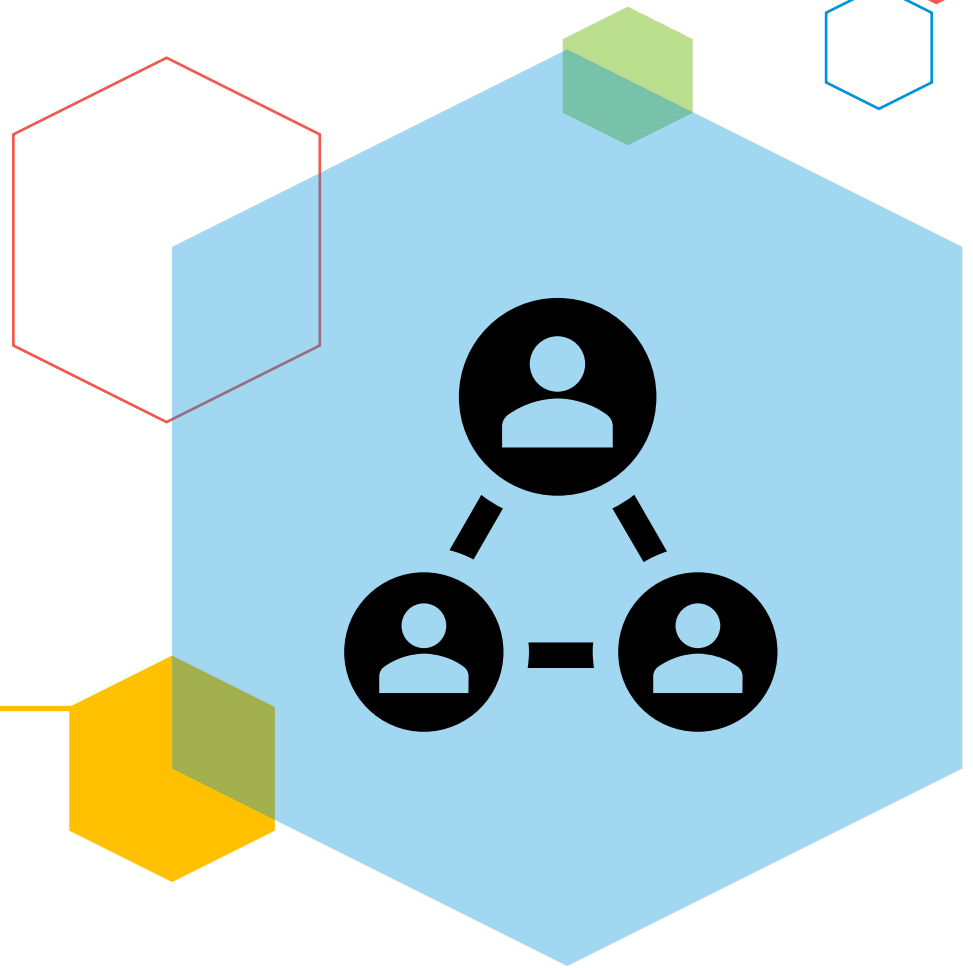
CRVS research forum

- Offers a major research, information sharing, capacity-building and networking opportunity for participants
- Identified a **shortage of research capacity on CRVS.**
- [Next forum on **30 March - 1 April 2026**]



Session 1: Asia-Pacific CRVS Research Forum, 3-4 April 2023 (youtube.com)

The CART initative



Goal

- Facilitate the improvement of CRVS systems through applied research and evidence-based interventions.
- Strengthening CRVS professionals research capacity:
  - Equip them with necessary skills to produce high-quality research
  - Build a mass and network of trained researchers in CRVS to increase research capacity on CRVS-related topics

Participants

2 Cohorts so far: 90 participants from 36 countries

Practitioners from:

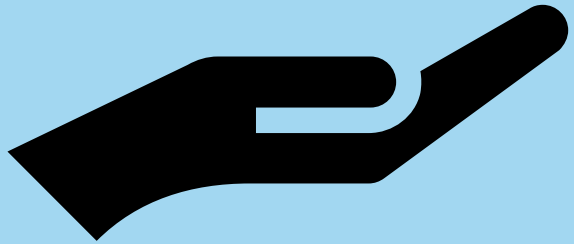
- National statistical office
- Health authorities
- Registration Authorities
- Civil Society

Training is topic-agnostic

Projects relate to CRVS system, or make use of CRVS data



What does the CART offer?



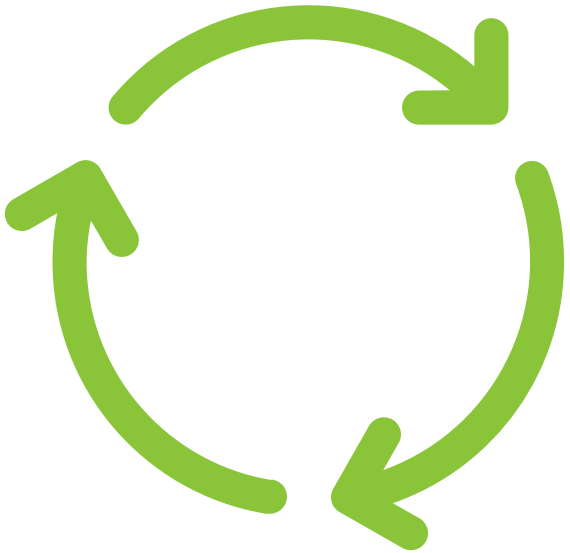
Online training resources (SIAP LMS)

- E-Learning Materials
- to research.
- Progressive releases of modules
- Opportunities to interact with other participants through forums and live sessions



Continuous support

- Deliverables and feedback
  - Every Module, the CART team will provide feedback on your research project.
- Supervisorship/office hours
  - Opportunities to ask any questions to research methods or about the training material
- Post training follow up
  - Support in finalizing paper, dissemination, submission to journals and research uptake



Mentor matching



- Facilitation of the pairing of researchers with mentors possessing relevant expertise and experiences
- Provide guidance, support, and valuable insights on both technical and contextual aspects of CRVS research
- Facilitate the dissemination process of your findings

Two in-person workshops

- Engage in face-to-face sessions and engage in discussions about CRVS research
- Opportunity to network with peers and present your research proposals/findings
- Intensive group work on your research project
- Acquire research skills through discussion and critique of other's work









Alumni network



- Establishing a CART Alumni network to further foster research collaboration and knowledge sharing amongst CRVS practitioners
- Opportunity to become a mentor to future CART participants
- Increased opportunity to contribute and be involved in CRVS research

Links

[CART webpage and how to apply]

[2026 CRVS Research forum]

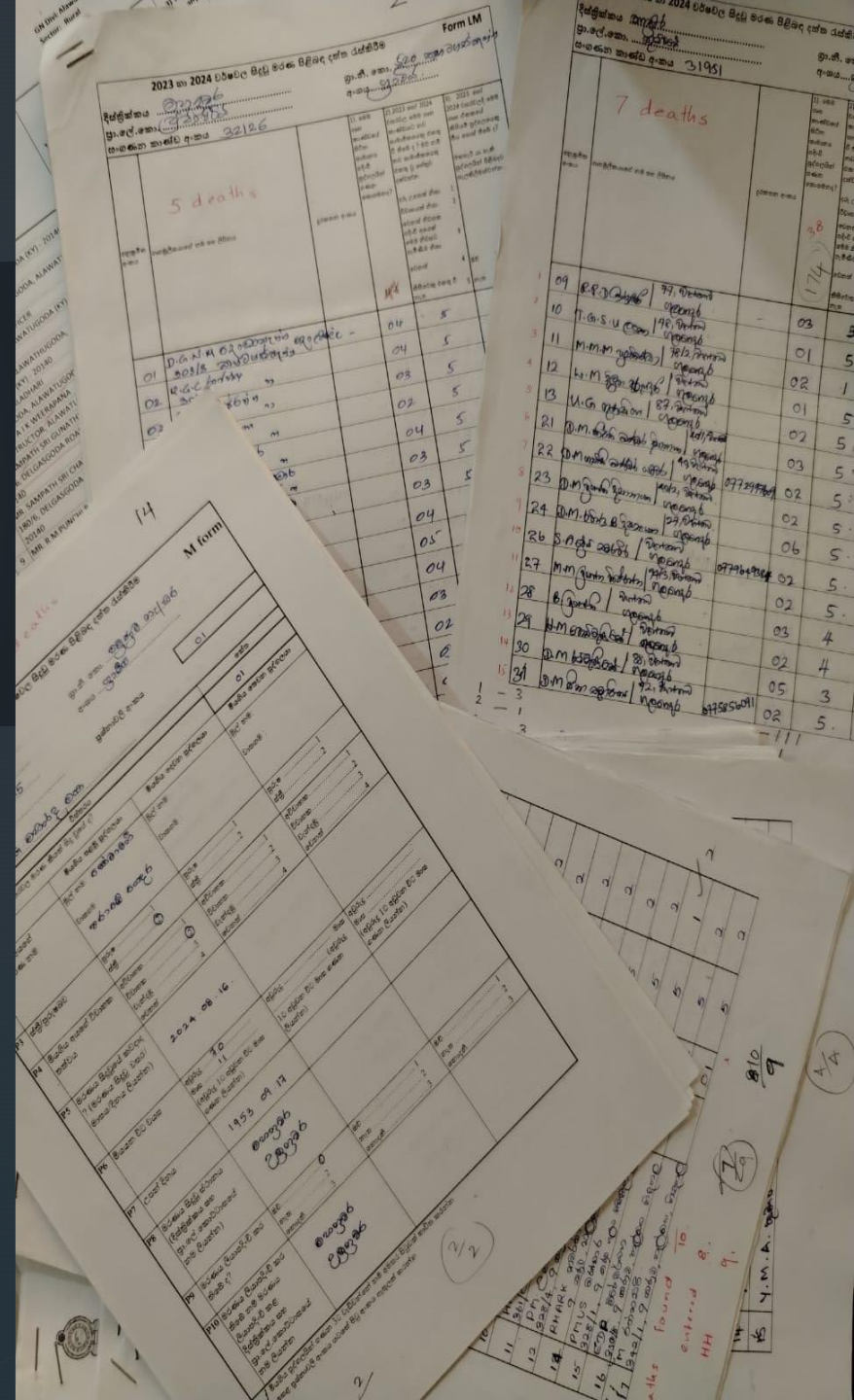
crvs-research@un.org

Counting household deaths: A novel approach to measuring mortality using routine surveys

STC Gaveshika

Participant from CART cohort 1

Director, Medical Statistics Unit, Ministry of Health Sri Lanka



Introduction

1. Total number of deaths occurring in a country, region or specific area is crucial for health policy planning, monitor disease control programs, study mortality patterns and resource allocation, (Queiroz, Bernardo L;, 2020).

2. Civil Registration and Vital Statistics (CRVS) system is the government system for the continuous, permanent, and universal recording of **vital events.** It's mandatory and offers legal identification to all individuals. A well-functioning CRVS system, one with full coverage and high completeness, is the best method to capture vital events and produce vital statistics (WHO, 2015).

3. Countries use registered deaths as the total number of deaths since they do not have no information of unregistered number of deaths.

Sri Lankan CRVS system

1. Sri Lanka has a long standing, (more than 150 years old) well established CRVS system and legally all deaths need to register.
2. Annually, around 170,000 deaths are registered.
3. Present CRVS system is paper based. Discussions are happening for digitalization of CRVS.
4. Due to paper based administrative system at Registrar General's department, , no timely data available for public health programs.

Available mortality indicators for 2020

Research Gap

No alternative data source exists to support CRVS system. Surveys are expensive, DHS or similar surveys capture specific events only (child or maternal)

During this rapidly ageing era, home deaths are increasing but no mechanism to capture whether all deaths are registered/counted.

Paper based CRVS system could not produce timely data.

Therefore, need to explore an alternative data collection methods.

Objective

Explore an alternative method to provide CRVS data needs and find out gaps in CRVS system

Methodology

Conducted literature survey regarding the alternative data collection methods.

Study usual surveys carried out by NSO. Found surveys are expensive and difficult to find out enough number of deaths

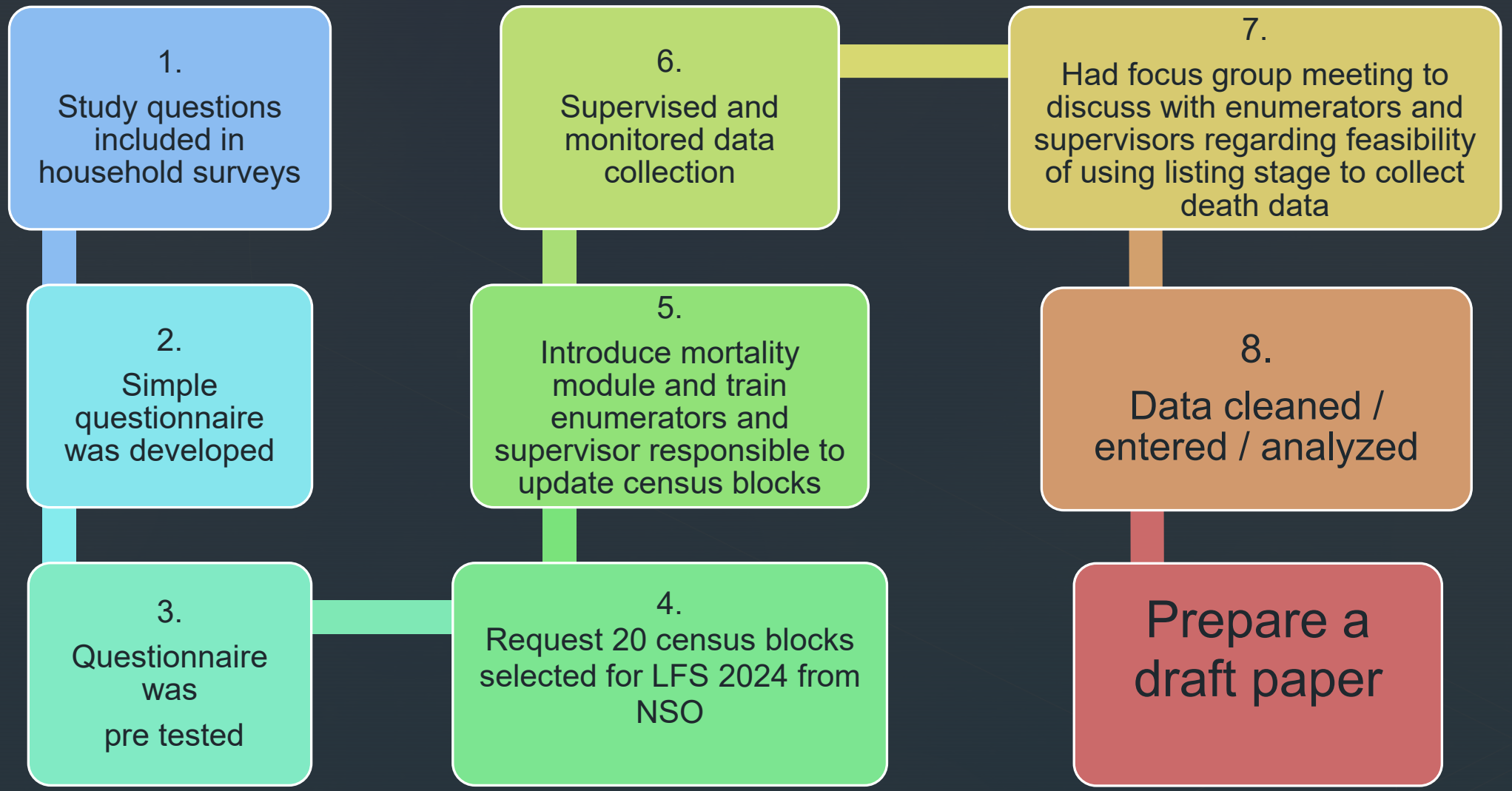
Methodology

Before household surveys selected census blocks are updating.

Census block updating (listing operation) is an opportunity to collect household death data. In Sri Lanka 2500 census blocks are selected for household surveys and average size of a census block is a 100 households. **Therefore, field enumerators visit 2500*100 households every year to update census blocks.**

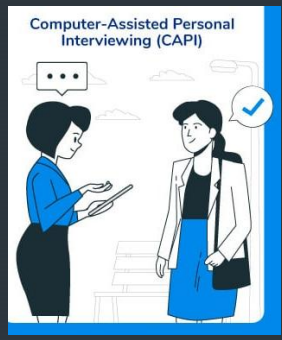
I have introduced a short mortality module to collect household deaths when updating census blocks for Labour force Survey

Steps of my piolet study



Results and way forward

Number of Households enumerated	HH population reported	Number of reported deaths
1515	5232	88



Collected demographic information related to deaths. Majority of deaths are registered

Households responded well. Enumerators accepted the data collection method and requested CAPI method to collect data.

Data collection method/procedure is ready to introduce in to national surveys.

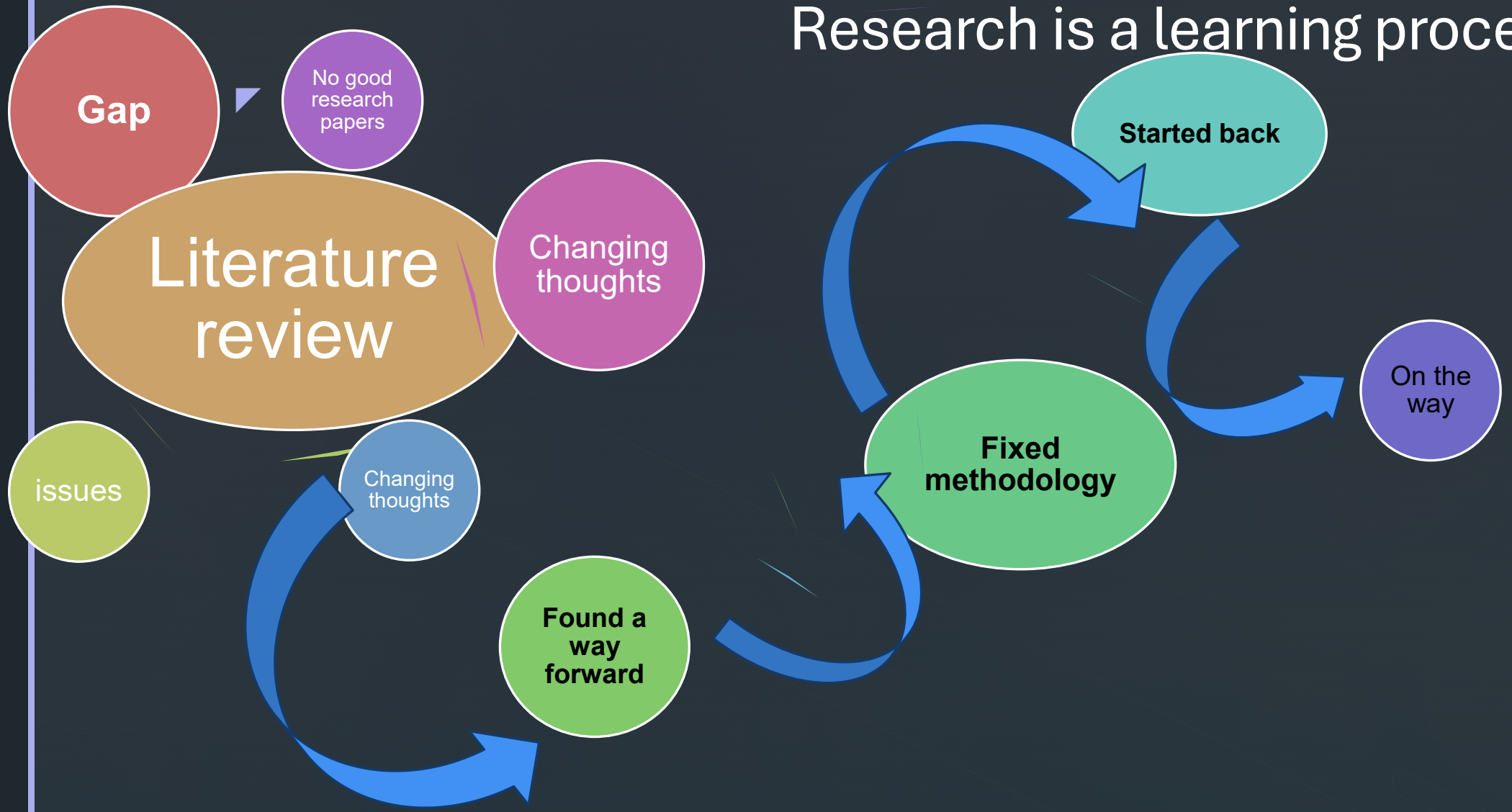
I have two missions to complete

Apply this method and provide data wanted to public health programs



And
publish my work in a good journal.

Research is a learning process



Interest → Knowledge and Assistance and keep on monitoring → Final goal

Reflection as a CART participants

Filled with excitements, targets, commitments, goals, and achievements.

Many resources are shared. Many discussions we had.

Peer to peer learning and sharing experience.



Met past, present and future CRVS global leaders /practitioners, CRVS donors / ESCAP / ECA

CRVS network gives us opportunities.

We are still together with social networks/CRVS news letter / through out meetings/ upcoming research forum



Overview of the Research Project, Findings, Outcomes, & Experience

Determinants and patterns of timeliness of birth registrations in Uganda: insights for improving coverage (2020–2024)

Stephen Robert Kasumba
Manager, Monitoring & Evaluation – NIRA

INTRODUCTION

- Enrolled in the CRVS Applied Research Training (CART) Programme (Cohort 1, 2024/25).
- The programme combined e-learning resources, mentorship, and face-to-face workshops: United Arab Emirates _ Dubai (August 2024) and second face to face in Thailand - Bangkok (Feb 2025).
- Significantly enhanced the quality and impact of our research project.

Overview of the Research Project

The study assessed Uganda's birth registration system using over 769,000 records from NIRA (2020–2024).

It examined socioeconomic, demographic, and structural determinants of timely, late, and delayed registrations.

Research Objectives

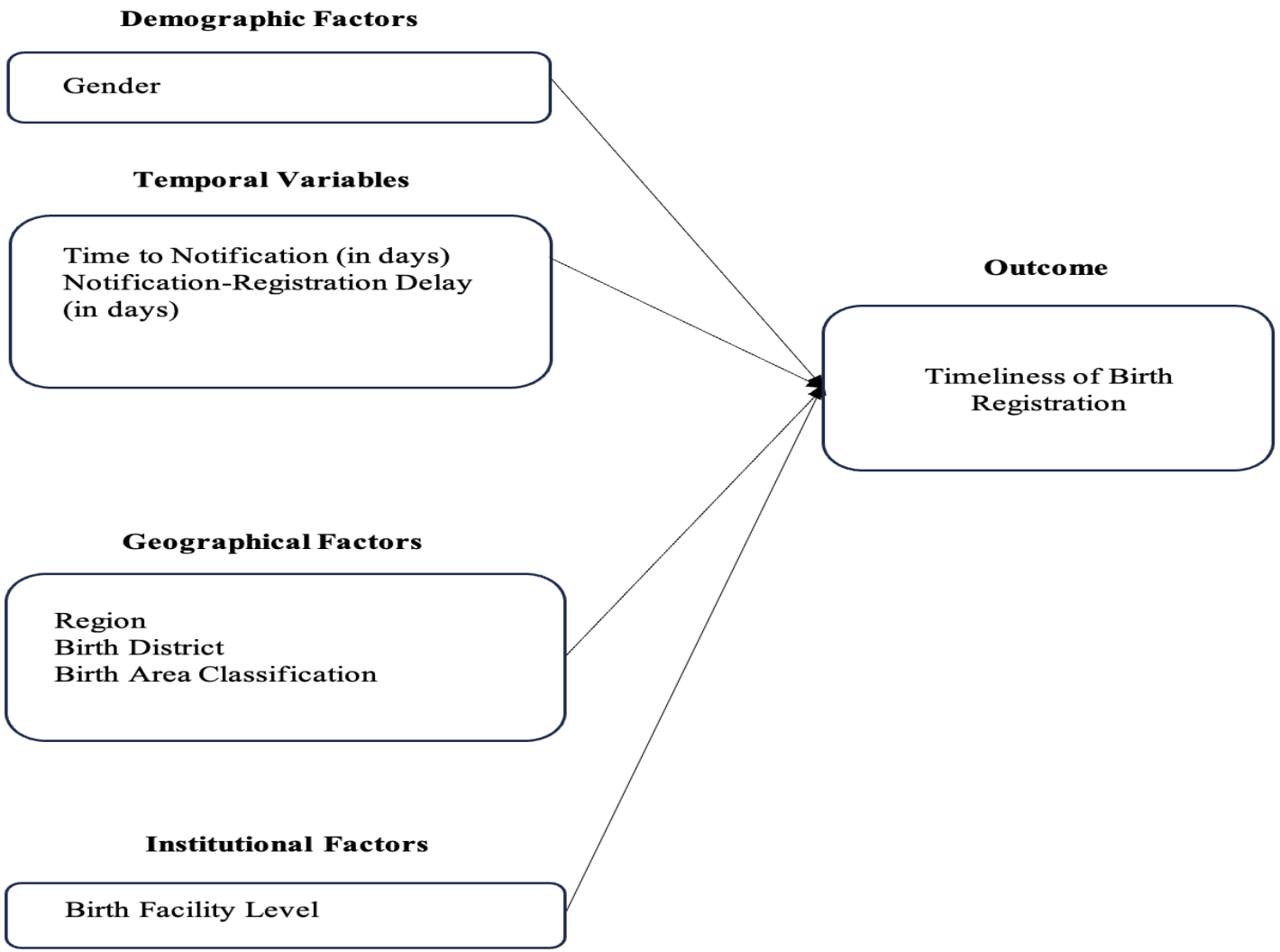
Main Objective:

- Investigate the determinants and patterns of late and delayed birth registrations in Uganda.

Specific Objectives:

- Analyze regional differences in notification-registration conversion time (in days).
- Examine the relationship between notification-registration conversion time and birth facility levels.
- Investigate regional variations in timeliness of birth registration.
- Assess the influence of health facility levels on birth registration timeliness.

Conceptual Framework



Methods

- **Data Source**: NIRA administrative records (2020–2024)
- **Design**: Quantitative cross-sectional analysis
- **Sample Size**: 769,472 records
- **Dependent Variable**: Timeliness – Timely (≤30 days), Late (31–365 days), Delayed (>365 days) (ROPA 2015)
- **Predictors**: Gender, time to notification, Notification-registration delay (in days), region, district, facility level

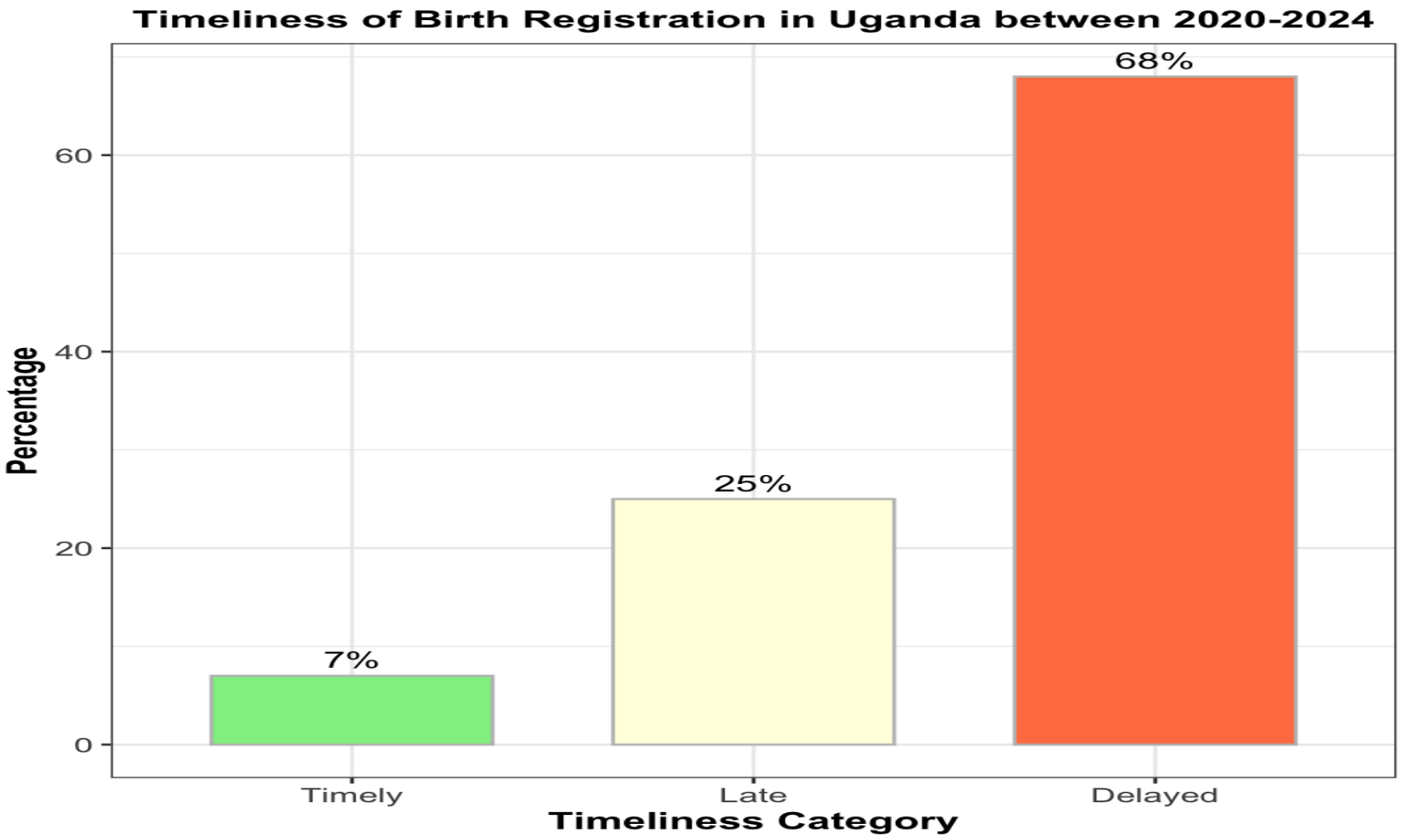
Statistical Methods:

- Univariate: Distributions & visualizations
- Bivariate: Kruskal–Wallis & Dunn's post hoc (Bonferroni correction)
- Multivariate: Multinomial logistic regression

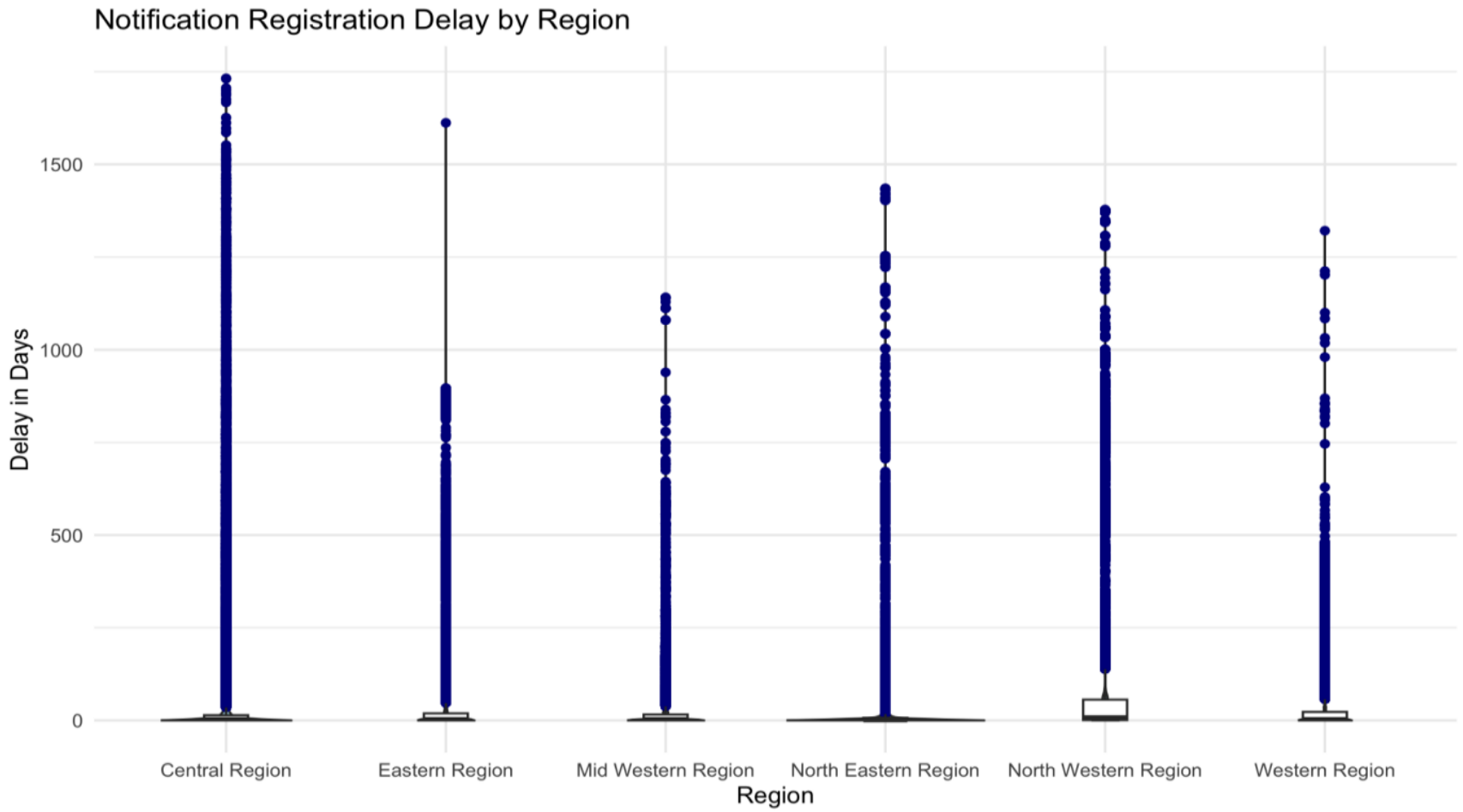
Key Findings

- Only 7% of births registered on time; 25% late; 68% delayed.
- Central Region had the highest share (36%); North Eastern & North Western lowest (9% each).
- Medical centers had the longest delays; referral hospitals were more efficient.
- Hospitals recorded high delays (70%) despite higher birth volumes.
- Strong predictors: Time to notification, conversion time, maternal education, and geography.
- Median delay: 1,177 days to notification; 3 days from notification to registration.

Timeliness of Birth Registrations (2020–2024)



Regional Variation in Notification-Registration Delay: Box Plot with Jittered Data Points.



Variable Importance Plot highlighting the contribution of the variables in predicting timeliness of birth registrations.

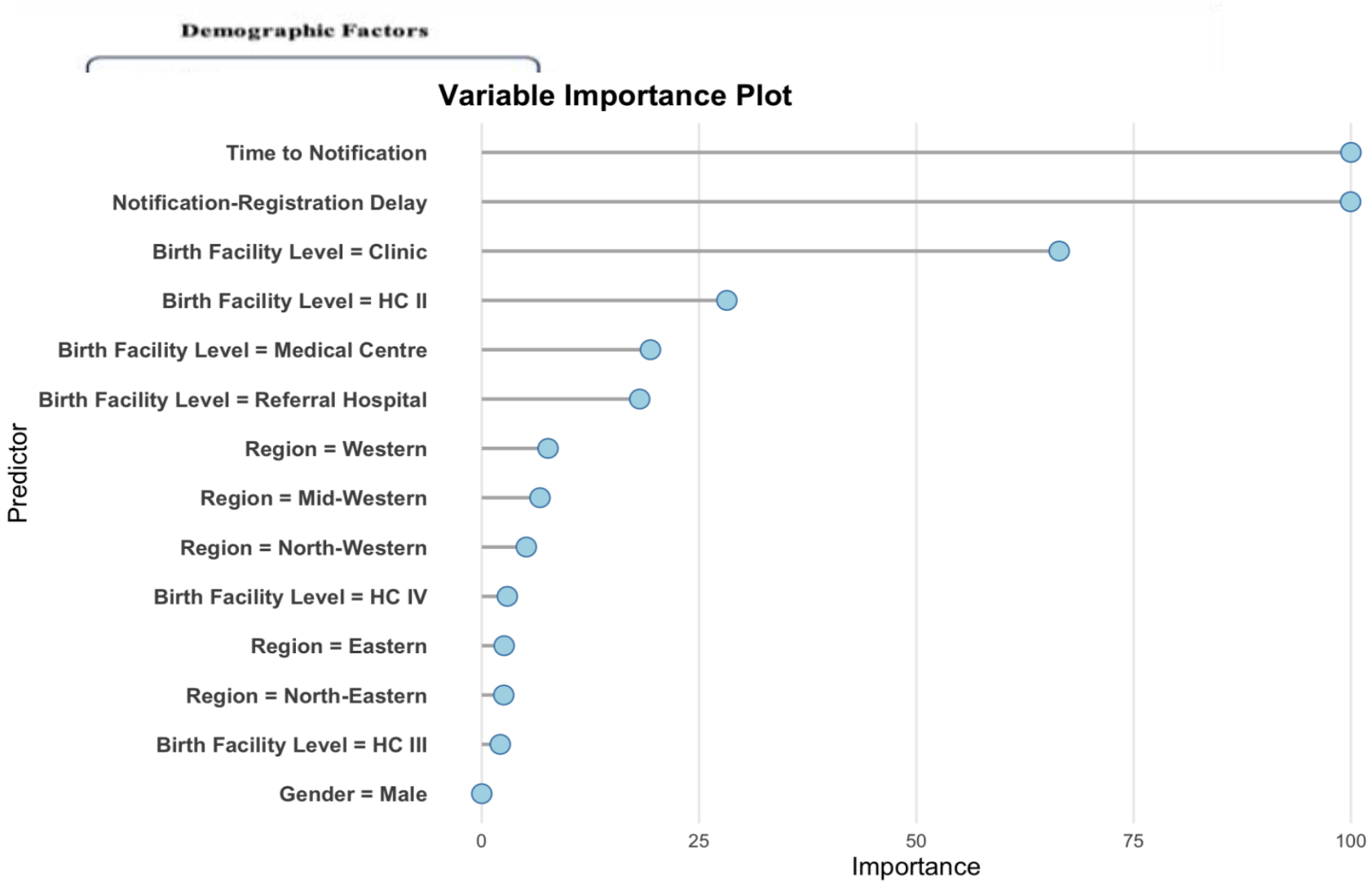


Table showing the 10-fold cross-validated multinomial logistic model estimates.

Outcome	Predictor	Coefficient	Std_Error	P_Value	Odds_Ratio	Odds_Ratio_CI
Late	(Intercept)	-341.2920007	0.022160442	0	6.0085E-149	[0, 0]*
Delayed	(Intercept)	-1239.273855	0.000417859	0	0	[0, 0]*
Late	Gender = Male	-0.012687773	0.591603508	0.98288955	0.987392377	[0.3097, 3.1483]
Delayed	Gender = Male	-0.055222963	0.613941423	0.92832833	0.94627414	[0.2841, 3.1522]
Late	Time to Notification	10.84023671	0.01857317	0	51033.45678	[49209.0731, 52925.4779]*
Delayed	Time to Notification	13.29669899	0.018506529	0	595227.5164	[574023.8331, 617214.4358]*
Late	Notification-Registration Conversion time	10.83478627	0.023340872	0	50756.05857	[48486.3775, 53131.985]*
Delayed	Notification-Registration Conversion time	13.2919949	0.023334483	0	592434.086	[565949.037, 620158.5714]*
Late	Region = Eastern	0.148460511	0.749741199	0.843032798	1.160046988	[0.2669, 5.0428]
Delayed	Region = Eastern	0.539408355	0.774821804	0.48632184	1.714991895	[0.3756, 7.8308]
Late	Region = Mid-Western	0.67037687	0.689686005	0.331049053	1.954973953	[0.5059, 7.5546]
Delayed	Region = Mid-Western	1.010247209	0.714077118	0.157139095	2.746279835	[0.6775, 11.1322]
Late	Region = North-Eastern	0.198090114	0.648590143	0.760048977	1.219072244	[0.3419, 4.3463]
Delayed	Region = North-Eastern	0.479456071	0.656982391	0.46552145	1.615195612	[0.4456, 5.8541]
Late	Region = North-Western	0.461249212	0.23560229	0.050259939	1.586054065	[0.9995, 2.5169]
Delayed	Region = North-Western	0.840032535	0.235292961	0.000356769	2.31644234	[1.4606, 3.6737]*
Late	Region = Western	0.944641148	0.744677171	0.204610749	2.571890286	[0.5975, 11.0697]
Delayed	Region = Western	0.959119483	0.779447547	0.218505473	2.609397843	[0.5663, 12.0232]
Late	Birth Facility Level = Clinic	-3.390298101	0.089086327	0	0.03369863	[0.0283, 0.0401]*
Delayed	Birth Facility Level = Clinic	-12.66822061	8.74437E-08	0	3.14965E-06	[0, 0]*
Late	Birth Facility Level = HC II	-3.185043924	0.365491454	0	0.041376428	[0.0202, 0.0847]*
Delayed	Birth Facility Level = HC II	-3.670077756	0.3804779	0	0.025474489	[0.0121, 0.0537]*
Late	Birth Facility Level = HC III	-0.24622053	0.71047434	0.728923442	0.781749806	[0.1942, 3.1466]
Delayed	Birth Facility Level = HC III	-0.334048067	0.732033912	0.648153644	0.716019364	[0.1705, 3.0064]
Late	Birth Facility Level = HC IV	-0.38272768	0.721096593	0.59558659	0.681998596	[0.1659, 2.8028]
Delayed	Birth Facility Level = HC IV	-0.39323371	0.750774968	0.600438239	0.674871005	[0.1549, 2.9396]
Late	Birth Facility Level = Medical Centre	1.609698952	0.911886601	0.077523393	5.00130537	[0.8373, 29.8742]
Delayed	Birth Facility Level = Medical Centre	3.129438828	0.531453738	3.89834E-09	22.86114691	[8.0671, 64.7859]*
Late	Birth Facility Level = Referral Hospital	-2.00033273	0.337121148	2.96413E-09	0.135290261	[0.0699, 0.262]*
Delayed	Birth Facility Level = Referral Hospital	-2.441298037	0.33868918	5.67546E-13	0.087047787	[0.0448, 0.1691]*

Key Predictors of Late Registration:

- **Time to Notification**: Each additional day drastically increases the odds (OR = 51,033.46).
- **Notification-Registration Conversion time**: Strong positive impact on late registration (OR = 50,756.06).
- **Birth Facility Impact**: Hospital births are more prone to late registration than clinics, HC II, and referral hospitals.

Policy Recommendations

- Integrate birth registration into maternal, newborn, and child health services.
- Establish mandatory immediate birth notification and waive related fees.
- Expand mobile/digital registration platforms to rural and underserved regions.
- Train and deploy more health workers and registration officers.
- Strengthen caregiver awareness campaigns, focusing on women’s empowerment.
- Introduce real-time monitoring systems for timeliness and coverage tracking.

Conclusion

The project revealed major inefficiencies in Uganda's birth registration system, with severe delays and inequities.

Evidence has already informed policy reforms, donor engagement, academic visibility, and operational improvements in NIRA and the CRVS ecosystem.

Key Learning Experiences

- Advanced Research Skills – Enhanced my capacity to analyze large datasets and apply econometric techniques.
- Policy Orientation – Strengthened ability to convert empirical results into practical policy recommendations.
- Knowledge Exchange – Benefited from mentorship and cross-country learning with peers and experts across Africa.

Contributions and Outcomes

- Published a peer-reviewed paper in Discover Health Systems (Springer Nature, 2025).
- Contributed evidence to NIRA and CRVS policy discussions on integrating birth registration with health services i.e maternal & newborn care, fee waivers, mobile registration.
- Capacity Building: Training health workers and registration officers, influencing NIRA strategies, influencing stakeholder dialogues and decisions.

Personal Reflection

- The CART programme sharpened my statistical and analytical rigor, while enriching my role at NIRA.

- It reaffirmed the importance of evidence-based policymaking in strengthening CRVS systems and ensuring universal legal identity in Uganda.

Acknowledgements

- United Nations Economic Commission for Africa (UNECA) and United Nations Economic and Social Commission for Asia and the Pacific (ESCAP)
- Bloomberg Philanthropies – Data for Health Initiative
- CART Programme Mentors and Facilitators (Mr William, Dr. Allen & Ms Lilian)
- National Identification and Registration Authority (NIRA)
- Makerere University Supervisors and Faculty

https://link.springer.com/article/10.1007/s44250-025-00295-7

Elevator speech

The research analyzed over 769,000 birth records in Uganda from 2020–2024 and found that only 7% of children are registered within 30 days, while 68% face severe delays. Key factors include notification bottlenecks, regional inequities, and health facility inefficiencies. The findings, published in Discover Health Systems (Springer Nature, 2025), have already shaped NIRA and UNICEF policy dialogues. We recommend integrating birth registration into maternal and child health services, expanding mobile platforms, and waiving fees to achieve universal legal identity.

Get every one in the picture

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DATA FOR HEALTH INITIATIVE

SCDC Shanghai Municipal Center for Disease Control & Prevention

From CRVS Data to Publication: CART Powered My First Climate–Health Article

Li Qi – From CART Cohort 1

Shanghai CDC, China

liqi_2@scdc.sh.cn

CART

CONTENTS

01. Overview of My Research

- Background
- Methods
- Results
- Conclusions

02. Outcomes of My Project

- Article
- Method Sharing
- Presentations
- Meeting Posters

03. Experience as CART Participants

- Academic Mindset
- Technical Skills
- Boost Efficiency
- International Stage

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DATA FOR HEALTH INITIATIVE

SCDC Shanghai Municipal Center for Disease Control & Prevention

PART- 01

Overview of My Research

CART

Overview of My Research

「Association of Cardiovascular Disease Mortality and Ambient Temperature Variation in Shanghai, China」

Background:

- Shanghai: 25 M residents, long-span & complete CRVS death data
- Temperature–health link still under-studied locally—our gap to fill

Method:

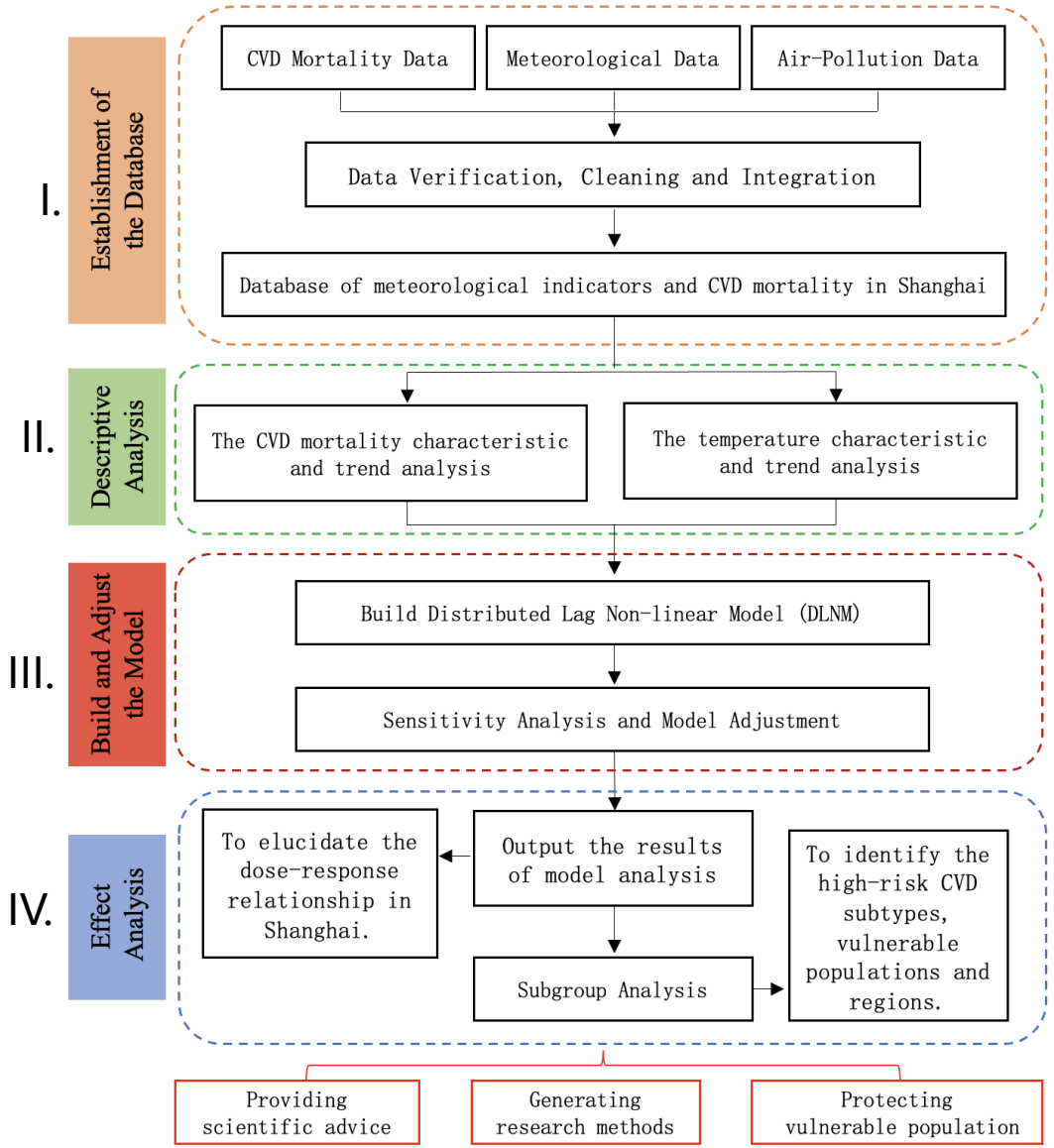
The distributed lag non-linear model (DLNM).

Data Source & Subjects:

- From 2015 to 2020
- Daily CVD deaths, meteorological data (temperature, humidity) and pollutant (PM2.5).

$$\begin{cases} Y_t \sim \text{quasiPoisson}(\mu_t, \varphi\mu_t) \\ \log[E(Y_t)] = \alpha + \beta \cdot T_{t,l}(Z) + \text{ns}(\text{time}, df = k \times n) + \text{ns}(PM_{2.5t}, df = k) \\ \quad + \text{ns}(RH_t, df = k) + DOW_t \end{cases}$$

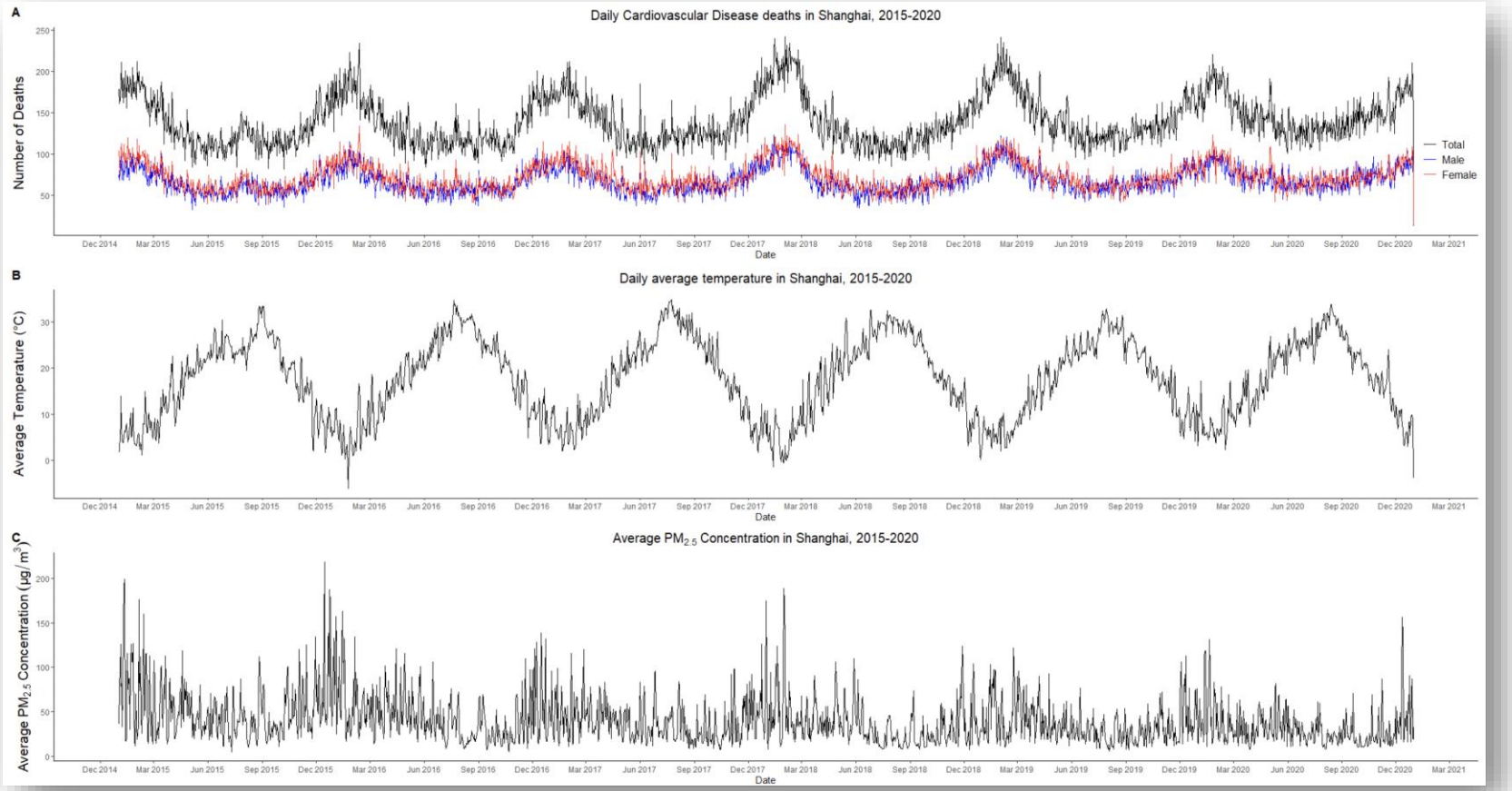
Expression of the DLNM Model



Overview of My Research

「Association of Cardiovascular Disease Mortality and Ambient Temperature Variation in Shanghai, China」

Results: Seasonal Trend



CVD deaths peak Dec–Mar when temperature was lowest;

$PM_{2.5}$ also highest Dec–Feb.

Figure 1. Time series plot of daily CVD mortality and changes in temperature and humidity in Shanghai from 2015 to 2020.
A. Daily CVD deaths; B. Daily average temperature; C. Daily average PM2.5 concentrations.

Overview of My Research

「Association of Cardiovascular Disease Mortality and Ambient Temperature Variation in Shanghai, China」

Results: Exposure–response curve

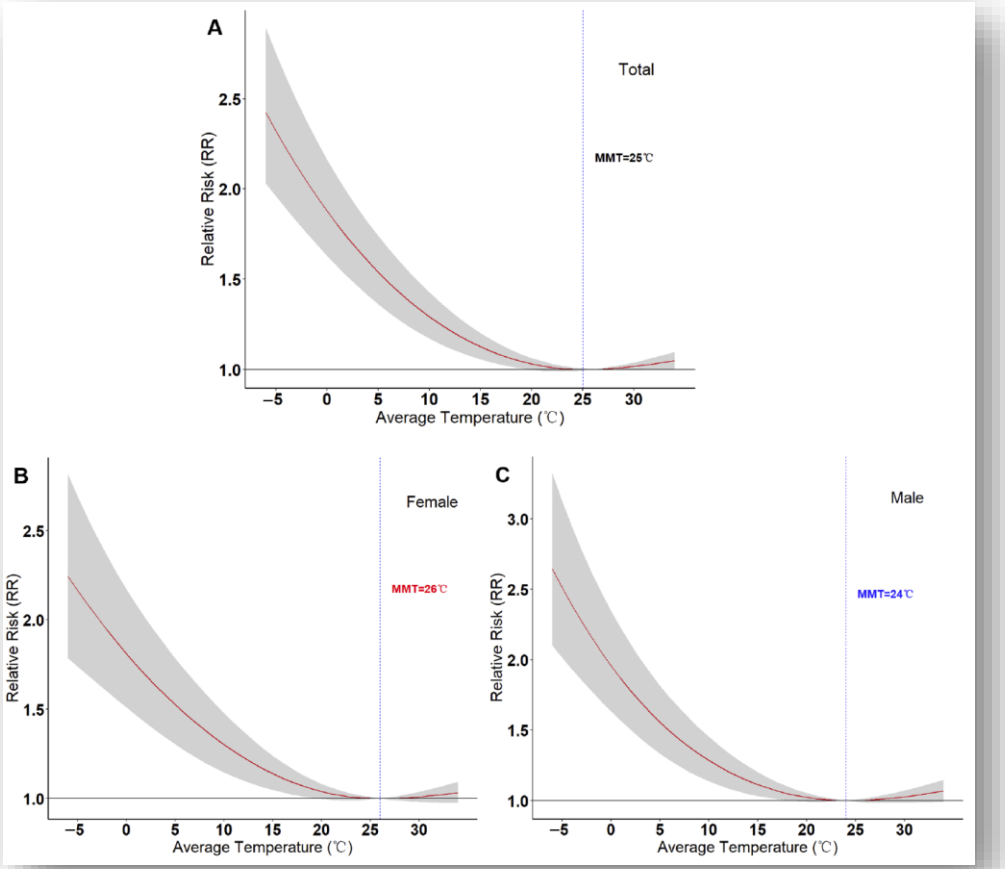


Figure 2. Association curve between daily average temperature and CVD deaths in Shanghai, 2015–2020. A. Total CVD deaths; B. In females; C. In males.

- Inverse "**J**" in both sexes.
- The minimum mortality temperature (MMT): 25 °C (female 26 °C, male 24 °C).
- Below MMT, risk rises↑ as temperature falls↓
- Above MMT, NO significant increase.
- At –6.1 °C, the highest RR = 2.42 (95% CI: 2.04–2.89), higher in male (RR=2.64) than female (RR=2.24).

Overview of My Research

「Association of Cardiovascular Disease Mortality and Ambient Temperature Variation in Shanghai, China」

Results: Lag Effects

Table 1. The effects of different temperature distributions on CVD mortality with different lag days in Shanghai, 2015–2020.

Number of Lag Days	Temperature and Distribution (°C)					
	Min	P2.5	Mean	MMT	P97.5	Max
	−6.1	2.69	17.58	25	31.62	34.8
Lag0	0.830 (0.769, 0.896)	0.816 (0.781, 0.853)	0.916 (0.897, 0.935)	Ref.	1.069 (1.035, 1.104)	1.102 (1.048, 1.159)
Lag1	1.048 (0.987, 1.112)	1.004 (0.971, 1.040)	0.981 (0.966, 0.997)	Ref.	1.029 (1.003, 1.056)	1.045 (1.003, 1.088)
Lag2	1.121 (1.085, 1.157)	1.065 (1.045, 1.085)	1.005 (0.997, 1.014)	Ref.	1.005 (0.991, 1.019)	1.010 (0.988, 1.032)
Lag3	1.126 (1.094, 1.158)	1.074 (1.057, 1.092)	1.013 (1.005, 1.021)	Ref.	0.994 (0.982, 1.007)	0.993 (0.974, 1.013)
Lag4	1.111 (1.082, 1.141)	1.072 (1.056, 1.089)	1.016 (1.009, 1.024)	Ref.	0.991 (0.980, 1.003)	0.988 (0.970, 1.006)
Lag5	1.090 (1.072, 1.110)	1.065 (1.054, 1.076)	1.017 (1.012, 1.021)	Ref.	0.991 (0.984, 0.998)	0.988 (0.977, 0.999)
Lag6	1.073 (1.058, 1.089)	1.058 (1.048, 1.067)	1.016 (1.012, 1.020)	Ref.	0.992 (0.986, 0.997)	0.989 (0.980, 0.998)
Lag7	1.061 (1.044, 1.077)	1.051 (1.041, 1.061)	1.015 (1.011, 1.019)	Ref.	0.992 (0.986, 0.998)	0.989 (0.979, 0.999)
Lag8	1.052 (1.034, 1.069)	1.045 (1.034, 1.055)	1.014 (1.009, 1.018)	Ref.	0.992 (0.986, 0.999)	0.989 (0.979, 1.000)
Lag9	1.045 (1.029, 1.061)	1.039 (1.029, 1.049)	1.012 (1.008, 1.017)	Ref.	0.992 (0.986, 0.999)	0.990 (0.980, 0.999)
Lag10	1.041 (1.028, 1.055)	1.034 (1.025, 1.043)	1.011 (1.007, 1.014)	Ref.	0.992 (0.987, 0.998)	0.990 (0.981, 0.998)
Lag11	1.038 (1.027, 1.050)	1.030 (1.022, 1.037)	1.009 (1.006, 1.012)	Ref.	0.993 (0.989, 0.997)	0.990 (0.983, 0.996)
Lag12	1.036 (1.026, 1.047)	1.026 (1.019, 1.033)	1.008 (1.005, 1.010)	Ref.	0.993 (0.989, 0.996)	0.990 (0.984, 0.995)
Lag13	1.034 (1.023, 1.044)	1.022 (1.015, 1.029)	1.006 (1.004, 1.009)	Ref.	0.993 (0.990, 0.997)	0.990 (0.985, 0.996)
Lag14	1.032 (1.021, 1.043)	1.019 (1.012, 1.026)	1.005 (1.002, 1.008)	Ref.	0.994 (0.990, 0.997)	0.991 (0.985, 0.997)
Lag15	1.029 (1.018, 1.041)	1.016 (1.009, 1.024)	1.004 (1.001, 1.007)	Ref.	0.994 (0.990, 0.998)	0.992 (0.985, 0.998)
Lag16	1.027 (1.015, 1.039)	1.014 (1.007, 1.022)	1.003 (1.000, 1.006)	Ref.	0.995 (0.991, 0.999)	0.993 (0.986, 0.999)
Lag17	1.025 (1.013, 1.036)	1.012 (1.005, 1.020)	1.002 (0.999, 1.006)	Ref.	0.996 (0.991, 1.000)	0.994 (0.987, 1.000)
Lag18	1.022 (1.011, 1.034)	1.011 (1.003, 1.018)	1.002 (0.999, 1.005)	Ref.	0.996 (0.992, 1.001)	0.995 (0.989, 1.001)
Lag19	1.020 (1.009, 1.031)	1.009 (1.002, 1.017)	1.001 (0.998, 1.004)	Ref.	0.997 (0.994, 1.001)	0.996 (0.990, 1.002)
Lag20	1.017 (1.007, 1.027)	1.008 (1.002, 1.015)	1.001 (0.998, 1.004)	Ref.	0.998 (0.995, 1.002)	0.998 (0.993, 1.003)
Lag21	1.015 (1.006, 1.024)	1.008 (1.001, 1.014)	1.000 (0.998, 1.003)	Ref.	0.999 (0.997, 1.002)	0.999 (0.995, 1.004)

- Cold (< MMT 25 °C):
  Risk rises days 2–3, persists to day 21.
- Heat (> MMT 25 °C):
  Risk immediate on day 0, gone within 1 day.

Overview of My Research

「Association of Cardiovascular Disease Mortality and Ambient Temperature Variation in Shanghai, China」

Conclusions:

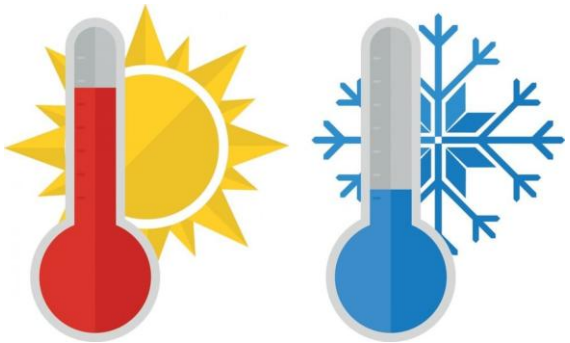
Climate change is creating complex temperature patterns—localized research is essential.

In Shanghai, cold-related CVD mortality poses a major threat:

- low temperatures drive a sustained risk lasting over three weeks,
- high temperatures trigger sharp, same-day increases.

Adaptation policies should therefore:

- issue immediate heat alerts for CVD patients,
- maintain cold-protection measures for 21+ days,
- integrate gender-specific risk thresholds.



PART- 02

Outcomes of My Project

CART

Outcomes of My Project

Article:



atmosphere

MDPI

Article

Association of Cardiovascular Disease Mortality and Ambient Temperature Variation in Shanghai, China: Beyond Air Quality Index $PM_{2.5}$

Qi Li [1], Shizhen Li [2], Ting Zhai [3], Shan Jin [1], Chunfang Wang [1], Bo Fang [1,*] and Tian Xia [1,*]

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Abstract: Evidence from megacity registry data regarding the independent association between ambient temperature and cardiovascular disease (CVD) mortality, after accounting for Particulate Matter 2.5 ($PM_{2.5}$), remains scarce. In this study, we collected 308,116 CVD mortality cases in Shanghai from 2015 to 2020. The distributed lag non-linear model (DLNM) was utilized. The daily $PM_{2.5}$ concentration was transformed using a natural spline (ns) function and integrated into the model for adjustment. The DLNM analysis revealed that the exposure–response curve between daily temperature and CVD mortality approximated an inverted "J" shape, consistent for both women and men. The minimum mortality temperature (MMT) for total CVD mortality was 25 °C, with an MMT of 26 °C for females and 24 °C for males. The highest relative risk (RR) of CVD mortality was 2.424 [95% confidence interval (95% CI): 2.035, 2.887] at the lowest temperature of −6.1 °C, with 2.244 (95% CI: 1.787, 2.818) for female and 2.642 (95% CI: 2.100, 3.326) for male. High temperatures exert acute and short-term effects, with the peak risk occurring on the day of exposure. In contrast, the risk from low temperature peaks on day 3 of the lag time and subsequently declines until days 16–21. This study offers evidence-based support for the prevention of temperature-induced CVD mortality.

Keywords: climate change; ambient temperature; cardiovascular disease; mortality

1. Introduction

The Intergovernmental Panel on Climate Change (IPCC) indicates that with the massive emission of greenhouse gases, global warming, and the continuous rise of sea levels, climate change has occurred and is having an unprecedented impact worldwide [1]. According to predictions from The Lancet's statistical data, extreme temperature events will cause approximately 250,000 deaths per year between 2030 and 2050, and by 2030, the direct cost of climate change to human health could reach USD 2 to 4 billion per year [2,3]. Climate change has increased both the average temperature and its variability [4], especially rapid temperature changes over short periods, such as extreme temperature events (cold

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R Code:

```r
#################### 2025 Atmo Script – Li Qi ######################

# Clear workspace
rm(list = ls())

# Set working directory
setwd("/Volumes/T7_LQ/Documents/2025.03/TOT Training/Demo")

# Read data
data <- read.csv("fenxi.csv", fileEncoding = "GBK")

# ---------------------------- Table 1 --------------------------------

# Install & load packages
library(dplyr)

# Inspect structure
str(data)

# Variables for summary
vars <- c("total_male", "total_female", "Temp", "rh", "PM2.5")

# Ensure numeric
data[vars] <- lapply(data[vars], function(x) as.numeric(as.character(x)))

# Summary-stats function
calc_stats <- function(x) c(
  Mean   = mean(x, na.rm = TRUE),
  SD     = sd(x, na.rm = TRUE),
  Min    = min(x, na.rm = TRUE),
  P1     = quantile(x, .01, na.rm = TRUE),
  P2.5   = quantile(x, .025, na.rm = TRUE),
  P25    = quantile(x, .25, na.rm = TRUE),
  P50    = quantile(x, .50, na.rm = TRUE),
  P75    = quantile(x, .75, na.rm = TRUE),
  P97.5  = quantile(x, .975, na.rm = TRUE),
  P99    = quantile(x, .99, na.rm = TRUE),
  Max    = max(x, na.rm = TRUE)
)
```

Atmosphere . 2025 Feb;16(2):119. doi: 10.3390/atmos16020119.
An open-access, SCI-indexed journal with an impact factor of 2.3

Outcomes of My Project

Method Sharing & Presentations:



In Chiang Mai Province, Thailand
13-17 May 2024



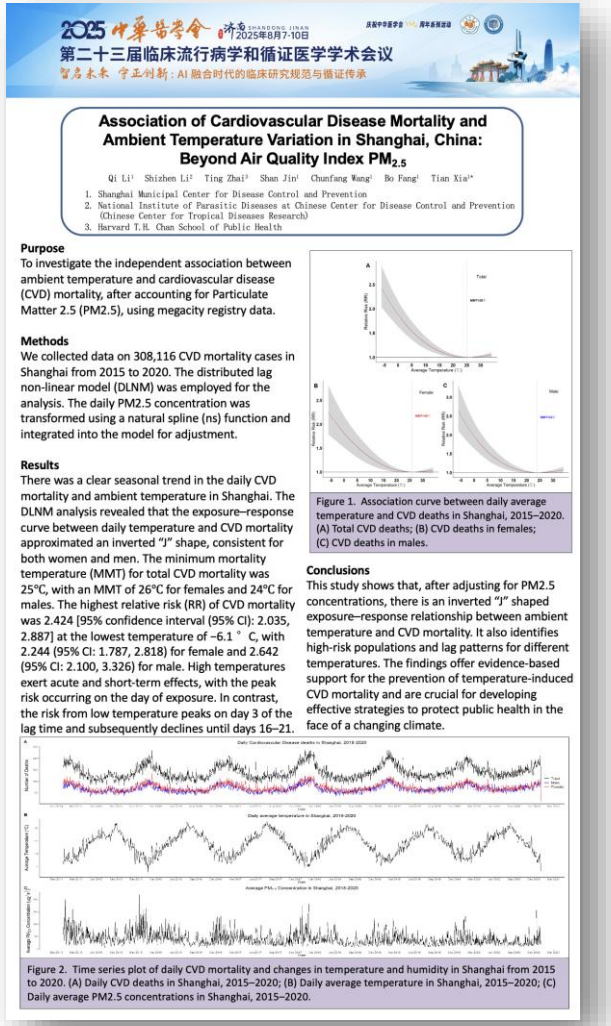
In Shanghai,
China
11-12 Mar 2025



In Jiangsu Province,
China
2-6 Sep 2024

Outcomes of My Project

Meeting Posters



2025 中華昔考會 济南 SHANDONG JINAN 2025年8月7-10日

第二十三届临床流行病学和循证医学学术会议

智启未来 守正创新：AI 融合时代的临床研究规范与循证传承

Association of Cardiovascular Disease Mortality and Ambient Temperature Variation in Shanghai, China: Beyond Air Quality Index $PM_{2.5}$

Qi Li[1] Shizhen Li[2] Ting Zhai[3] Shan Jin[1] Chunfang Wang[1] Bo Fang[1] Tian Xia[1]*

1. Shanghai Municipal Center for Disease Control and Prevention
2. National Institute of Parasitic Diseases at Chinese Center for Disease Control and Prevention (Chinese Center for Tropical Diseases Research)
3. Harvard T.H. Chan School of Public Health

Purpose

To investigate the independent association between ambient temperature and cardiovascular disease (CVD) mortality, after accounting for Particulate Matter 2.5 (PM2.5), using megacity registry data.

Methods

We collected data on 308,116 CVD mortality cases in Shanghai from 2015 to 2020. The distributed lag non-linear model (DLNM) was employed for the analysis. The daily PM2.5 concentration was transformed using a natural spline (ns) function and integrated into the model for adjustment.

Results

There was a clear seasonal trend in the daily CVD mortality and ambient temperature in Shanghai. The DLNM analysis revealed that the exposure–response curve between daily temperature and CVD mortality approximated an inverted "J" shape, consistent for both women and men. The minimum mortality temperature (MMT) for total CVD mortality was 25°C, with an MMT of 26°C for females and 24°C for males. The highest relative risk (RR) of CVD mortality was 2.424 [95% confidence interval (95% CI): 2.035, 2.887] at the lowest temperature of −6.1 ° C, with 2.244 (95% CI: 1.787, 2.818) for female and 2.642 (95% CI: 2.100, 3.326) for male. High temperatures exert acute and short-term effects, with the peak risk occurring on the day of exposure. In contrast, the risk from low temperature peaks on day 3 of the lag time and subsequently declines until days 16–21.

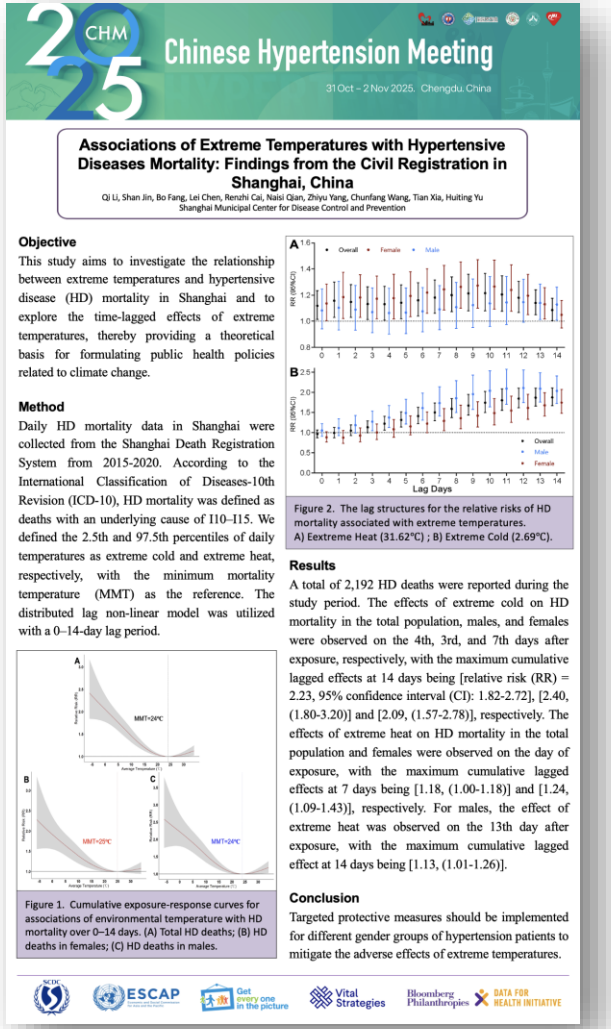
Figure 1. Association curve between daily average temperature and CVD deaths in Shanghai, 2015–2020. (A) Total CVD deaths; (B) CVD deaths in females; (C) CVD deaths in males.

Conclusions

This study shows that, after adjusting for PM2.5 concentrations, there is an inverted "J" shaped exposure–response relationship between ambient temperature and CVD mortality. It also identifies high-risk populations and lag patterns for different temperatures. The findings offer evidence-based support for the prevention of temperature-induced CVD mortality and are crucial for developing effective strategies to protect public health in the face of a changing climate.

Figure 2. Time series plot of daily CVD mortality and changes in temperature and humidity in Shanghai from 2015 to 2020. (A) Daily CVD deaths in Shanghai, 2015–2020; (B) Daily average temperature in Shanghai, 2015–2020; (C) Daily average PM2.5 concentrations in Shanghai, 2015–2020.

The 23rd Academic Conference on Clinical Epidemiology and Evidence-Based Medicine
Chinese Medical Association
Aug 7-10, 2025 in Jinan, Shandong Province, China



CHM 2025 Chinese Hypertension Meeting

31 Oct - 2 Nov 2025. Chengdu, China

Associations of Extreme Temperatures with Hypertensive Diseases Mortality: Findings from the Civil Registration in Shanghai, China

Qi Li, Shan Jin, Bo Fang, Lei Chen, Renzhi Cai, Naisi Qian, Zhiyu Yang, Chunfang Wang, Tian Xia, Huiting Yu
Shanghai Municipal Center for Disease Control and Prevention

Objective

This study aims to investigate the relationship between extreme temperatures and hypertensive disease (HD) mortality in Shanghai and to explore the time-lagged effects of extreme temperatures, thereby providing a theoretical basis for formulating public health policies related to climate change.

Method

Daily HD mortality data in Shanghai were collected from the Shanghai Death Registration System from 2015-2020. According to the International Classification of Diseases-10th Revision (ICD-10), HD mortality was defined as deaths with an underlying cause of I10–I15. We defined the 2.5th and 97.5th percentiles of daily temperatures as extreme cold and extreme heat, respectively, with the minimum mortality temperature (MMT) as the reference. The distributed lag non-linear model was utilized with a 0–14-day lag period.

Figure 1. Cumulative exposure-response curves for associations of environmental temperature with HD mortality over 0–14 days. (A) Total HD deaths; (B) HD deaths in females; (C) HD deaths in males.

Figure 2. The lag structures for the relative risks of HD mortality associated with extreme temperatures. A) Eextreme Heat (31.62°C) ; B) Extreme Cold (2.69°C).

Results

A total of 2,192 HD deaths were reported during the study period. The effects of extreme cold on HD mortality in the total population, males, and females were observed on the 4th, 3rd, and 7th days after exposure, respectively, with the maximum cumulative lagged effects at 14 days being [relative risk (RR) = 2.23, 95% confidence interval (CI): 1.82-2.72], [2.40, (1.80-3.20)] and [2.09, (1.57-2.78)], respectively. The effects of extreme heat on HD mortality in the total population and females were observed on the day of exposure, with the maximum cumulative lagged effects at 7 days being [1.18, (1.00-1.18)] and [1.24, (1.09-1.43)], respectively. For males, the effect of extreme heat was observed on the 13th day after exposure, with the maximum cumulative lagged effect at 14 days being [1.13, (1.01-1.26)].

Conclusion

Targeted protective measures should be implemented for different gender groups of hypertension patients to mitigate the adverse effects of extreme temperatures.

2025 China Hypertension Meeting (CHM2025)
Chinese Hypertension League
Oct 31-Nov 2, 2025 in Chengdu, Sichuan Province, China

Get every one in the picture

ESCAP Economic and Social Commission for Asia and the Pacific

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Bloomberg Philanthropies

DATA FOR HEALTH INITIATIVE

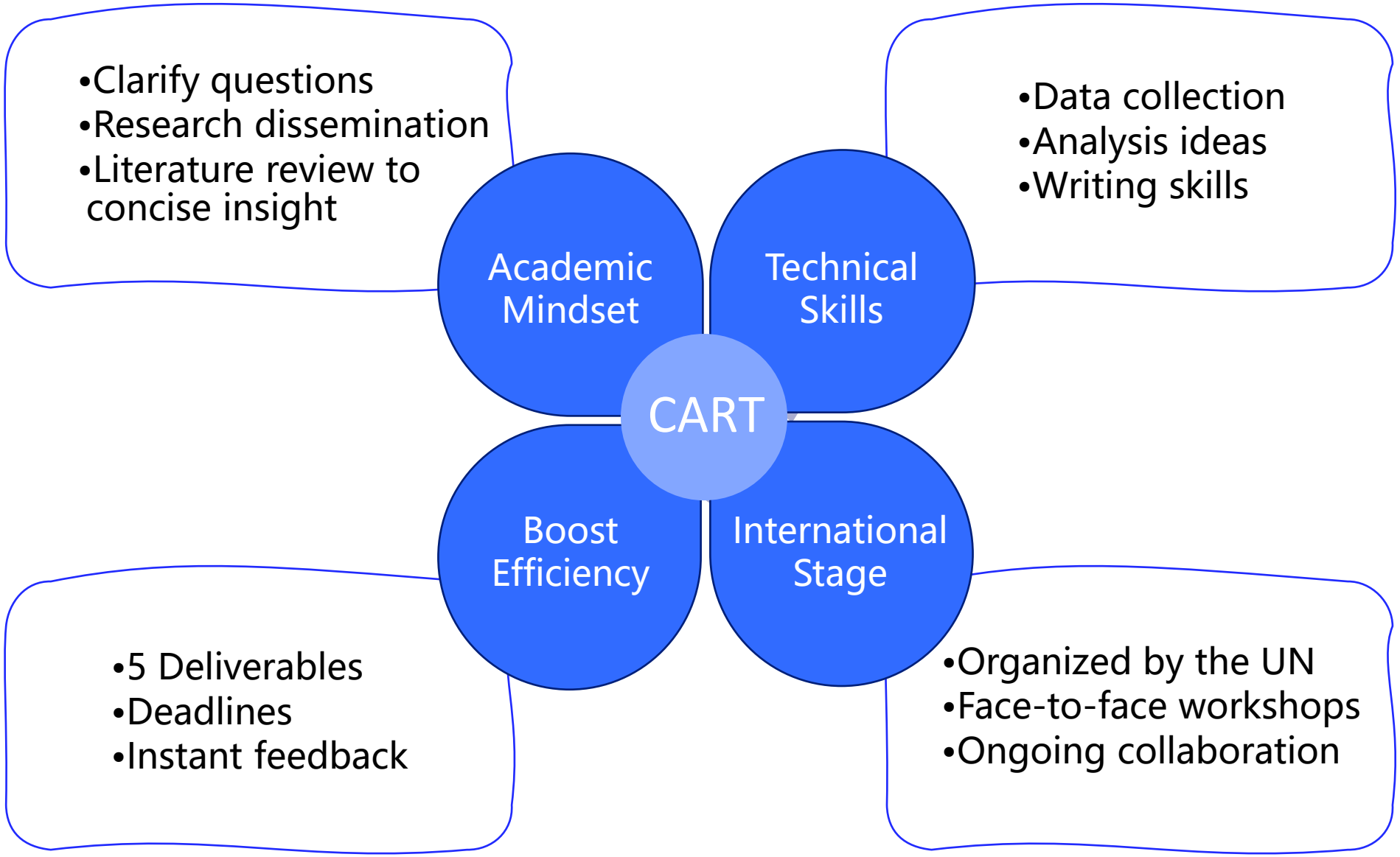
SCDC Shanghai Municipal Center for Disease Control & Prevention

PART- 03

Experience as CART Participants

CART

Experience as CART Participants



Marking Schedules

Deliverable 1

Technical components

This deliverable has three technical components that were assessed: 1) explaining your research topic and clearly stating your research question; 2) outlining a proposed methodology / approach to addressing your research question; and 3) beginning your literature review.

Criteria	Competency level				
1a. Research topic	Exceptional topic that fully explains the importance and relevance of the proposed research	Well-developed topic that describes the importance and/or relevance of the proposed research	Topic generally describes the main points of the proposed research	Basic topic that describes some aspects of the proposed research	Inadequately or inaccurately developed topic that does not fully describe the proposed research
1b. Research question	Exceptionally appropriate, clear and concise framing of the research question	Highly appropriate, clear and concise framing of the research question	Generally appropriate, clear and concise framing of the research question	Basic formulation of the research question, however it lacks clarity and concision	Inadequate research question, with lack of clarity and concision
2. Research methodology / approach	Excellent methodology for addressing the identified research question and supporting the research topic	Very good methodology for addressing the identified research question and supporting the research topic	Sound methodology for addressing the identified research question and supporting the research topic	Methodology goes some way towards addressing the identified research question and topic	Selected methodology does not satisfactorily address the identified research question and/or support the research topic
3a. Literature review	Identifies a range of exceptional quality sources	Identifies high-quality sources	Identifies quality sources	Identifies the correct number of sources, but of varying quality and range	Identifies too few sources, or sources of insufficient quality
3b. Analysis and interpretation of literature	Shows an original approach to the literature by advancing analysis or interpretation	Shows a complex account of the literature, demonstrates good analysis and interpretation skills	Provides an acceptable account of the literature, but does not fully link it to the research topic	Provides a limited or incomplete account of the literature	Shows minimal or few signs of competence in the analysis and interpretation of the literature
4. Overall	Deliverable is successfully fulfilled	Deliverable is largely fulfilled	Deliverable is sufficiently fulfilled	Deliverable is partially fulfilled	Deliverable is not fulfilled
5. General comments	1a/b. Note that the idea of the deliverable was to build on your application (taking into consideration what you have learnt during module 1) and present an updated version that addresses the points above. Your application had much more detail than what was included here – it would have been good to see an updated version of your application with the developments incorporated. 2. The methods need a lot of work. While the use of R is mentioned, this is only one part. What are the proposed methods – are you just looking to develop the tool? Develop and refine? Pilot test, etc..? 3a/b. The literature review provided is a good start, however it needs to be better linked to your research. What does the literature say/mean about creating a tool to link mortality and temperature data in China? Has anyone done something similar in another country? If so, what can you learn and use in your research? 4. Overall, the current deliverable did not provide a clear research question (and one was not provided as part of the application), and the methods also remain very unclear. What question are you trying to address and how will you do it? These have not been clearly articulated to-date.				

Academic writing proficiency

Please note that these components were not used to assess your competency as outlined above. Rather, feedback is provided here to help you improve your academic writing proficiency as you move through the training.

Criteria	Competency level				
1. Language accuracy	Accurate with a few expected 'first draft' slips	Largely accurate with some minor errors	Sufficiently accurate, errors are mostly minor (spelling, grammar)	Partially accurate, errors are mostly major (comprehension)	Inaccurate
2. Vocabulary	Wide and precise	Wide enough and mostly precise	Sufficient, but lacks precision	Limited	Inappropriate
3. Sentence structure	Varied and effective	Largely varied	Some variety	Lacks variety	Distorted sentence structure
4. Organisation and development of work	Well organised and well developed	Organised and developed	Sufficiently organised with some details	Lacking organisation and details	Hardly any organisation or details
5. Referencing	Excellent compliance with the chosen referencing style	Very good compliance with the chosen referencing style	Good compliance with the chosen referencing style	Satisfactory compliance with the chosen referencing style	Insufficient or no compliance with the chosen referencing style
6. General comments	The writing style was a bit too informal for academic purposes – try to get into the habit of writing as if you were submitting to a journal. Be cautious when using the in-built referencing software in Word, as it often produces errors.				

Deliverable 2

Technical components

This deliverable had three technical components that were assessed: 1) writing up your literature review; 2) clearly stating your research question; and 3) developing and stating your hypothesis.

Criteria	Competency level				
1a. Sources in the literature review	Identifies a range of exceptional quality sources	Identifies high-quality sources	Identifies quality sources	Identifies the correct number of sources, but of varying quality and range	Identifies too few sources, or sources of insufficient quality
1b. Analysis and interpretation of literature	Shows an original approach to the literature by advancing analysis or interpretation	Shows a complex account of the literature, demonstrates good analysis and interpretation skills	Provides an acceptable account of the literature, but does not fully link it to the research topic	Provides a limited or incomplete account of the literature	Shows minimal or few signs of competence in the analysis and interpretation of the literature
1c. Organisation and development of literature review	Well organised and well developed	Organised and developed	Sufficiently organised with some details	Lacking organisation and details	Hardly any organisation or details
1d. Referencing	Excellent compliance with the chosen referencing style	Very good compliance with the chosen referencing style	Good compliance with the chosen referencing style	Satisfactory compliance with the chosen referencing style	Insufficient or no compliance with the chosen referencing style
1e. Word count	Within the stated range (500–750 words)	-	Within the stated range or close enough (400–850 words)	-	Either significantly too few (<400) or too many (>850) words
2a. Development of research question	Clearly explains how the question has been refined	Explains how the question has been refined	Limited explanation of how the question has been refined	Little or no explanation of how the question has been refined or is linked to the literature review	No explanation of how the question has been refined or how it is linked to the literature review
2b. Research question	Exceptionally appropriate, clear and concise framing of the research question	Highly appropriate, clear and concise framing of the research question	Generally appropriate, clear and concise framing of the research question	Basic formulation of the research question, however it lacks clarity and concision	Inadequate research question, with lack of clarity and concision
3. Hypothesis	Work shows a comprehensive and excellent understanding of the hypothesis	Hypothesis is comprehensive and clearly stated	The hypothesis is mostly clear and correct	Some attempt made to state the hypothesis	No clear description of the hypothesis
4. Overall	Deliverable is successfully fulfilled	Deliverable is largely fulfilled	Deliverable is sufficiently fulfilled	Deliverable is partially fulfilled	Deliverable is not fulfilled
5. General comments	Congratulations on submitting such a high-quality deliverable. You have taken on board the feedback provided in your first deliverable and incorporated these into your research design. The literature review includes a range of quality sources, shows your own original analysis and interpretation, and clearly links the importance of your research with your research question. Very well done.				

Academic writing proficiency

Please note that these components were not used to assess your competency as outlined above. Rather, feedback is provided here to help you improve your academic writing proficiency as you move through the training.

Criteria	Competency level				
1. Language accuracy	Accurate with a few expected 'first draft' slips	Largely accurate with some minor errors	Sufficiently accurate, errors are mostly minor (spelling, grammar)	Partially accurate, errors are mostly major (comprehension)	Inaccurate
2. Vocabulary	Wide and precise	Wide enough and mostly precise	Sufficient, but lacks precision	Limited	Inappropriate
3. Sentence structure	Varied and effective	Largely varied	Some variety	Lacks variety	Distorted sentence structure
4. Writing style	Displays a distinctive personal style, handled with control and confidence	Demonstrates clear signs of the writer's personal style	Shows little evidence of an individual style, but is free from technical error and reveals some skill or insight	May show some or all of the following: technical errors, evidence of being rushed, poor engagement with previous advice and feedback, errors of proofreading	Displays considerable errors of presentation, signed of the work being incomplete or produced in haste, previous advice and feedback ignored
6. General comments	Overall, very well written and at a suitable level for academic publication. Well done.				

Deliverable 3

Technical components

This deliverable had five technical components that were assessed: 1) research question; 2) literature review; 3) research design and methods; 4) adequate attempt at addressing all sections in the template*; and 5) references.

Criteria	Competency level				
1a. Research question	Exceptionally appropriate, clear and concise framing of the research question	Highly appropriate, clear and concise framing of the research question	Generally appropriate, clear and concise framing of the research question	Basic formulation of the research question, however it lacks clarity and concision	Inadequate research question, with lack of clarity and concision
1b. Hypothesis	Work shows a comprehensive and excellent understanding of the hypothesis	Hypothesis is comprehensive and clearly stated	The hypothesis is mostly clear and correct	Some attempt made to state the hypothesis	No clear description of the hypothesis
2a. Sources in the literature review	Identifies a range of exceptional quality sources	Identifies high-quality sources	Identifies quality sources	Identifies the correct number of sources, but of varying quality and range	Identifies too few sources, or sources of insufficient quality
2b. Analysis and interpretation of literature	Shows an original approach to the literature by advancing analysis or interpretation	Shows a complex account of the literature, demonstrates good analysis and interpretation skills	Provides an acceptable account of the literature, but does not fully link it to the research topic	Provides a limited or incomplete account of the literature	Shows minimal or few signs of competence in the analysis and interpretation of the literature
2c. Organisation and development of literature review	Well organised and well developed	Organised and developed	Sufficiently organised with some details	Lacking organisation and details	Hardly any organisation or details
3. Research design / methodology	Excellent methodology for addressing the identified research question and supporting the research topic	Very good methodology for addressing the identified research question and supporting the research topic	Sound methodology for addressing the identified research question and supporting the research topic	Methodology goes some way towards addressing the identified research question and topic	Selected methodology does not satisfactorily address the identified research question and/or support the research topic
4. Adequate attempt at addressing all sections*	All sections were adequately addressed	-	Most sections were addressed at a reasonable level of quality	-	Not all sections were addressed and/or the responses provided were not adequate
5. Referencing	Excellent compliance with the chosen referencing style	Very good compliance with the chosen referencing style	Good compliance with the chosen referencing style	Satisfactory compliance with the chosen referencing style	Insufficient or no compliance with the chosen referencing style
Overall	Deliverable is successfully fulfilled	Deliverable is largely fulfilled	Deliverable is sufficiently fulfilled	Deliverable is partially fulfilled	Deliverable is not fulfilled
General comments	1. → **Research question/hypothesis**. The research question is clearly stated in more than one place, and the hypothesis is presented and explained fully. 2. → **Literature review**. The literature review shows a comprehensive range of sources. It is well organised and shows an excellent understanding of previous research on the topics, along with their strengths/limitations, which have been linked to your research. 3. → **Research design and methods**. The methods outlined are clear and comprehensive. 4. → **Attempt at addressing all sections**. It is clear that you have thought this proposal through fully, and it is great to see your thoughts on aspects such as ethics, limitations and the timeline. 5. → **Referencing**. Referencing is of high standard. 6. → **Overall**. The deliverable is of very high quality, well done.				

*Individual marks were not awarded for several of the smaller sections in the template (summary/abstract, importance of research topic, ethical considerations, limitations, and timeline). However, to be successfully or largely fulfilled, participants were expected to demonstrate an attempt at completing them.

Academic writing proficiency

Please note that these components were not used to assess your competency as outlined above. Rather, feedback is provided here to help you improve your academic writing proficiency as you move through the training.

Criteria	Competency level				
1. Language accuracy	Accurate with a few expected 'first draft' slips	Largely accurate with some minor errors	Sufficiently accurate, errors are mostly minor (spelling, grammar)	Partially accurate, errors are mostly major (comprehension)	Inaccurate
2. Vocabulary	Wide and precise	Wide enough and mostly precise	Sufficient, but lacks precision	Limited	Inappropriate
3. Sentence structure	Varied and effective	Largely varied	Some variety	Lacks variety	Distorted sentence structure
4. Writing style	Displays a distinctive personal style, handled with control and confidence	Demonstrates clear signs of the writer's personal style	Shows little evidence of an individual style, but is free from technical error and reveals some skill or insight	May show some or all of the following: technical errors, evidence of being rushed, poor engagement with previous advice and feedback, errors of proofreading	Displays considerable errors of presentation, signed of the work being incomplete or produced in haste, previous advice and feedback ignored
6. General comments	Academic writing is excellent overall. When it comes time to submit, you will likely have to reduce the text provided in each section. This is an iterative process of refining your writing and removing non-essential text, so that you are just left with the core points of each paragraph. Writing concisely is one of the hardest challenges of academic writing!				

Welcome To CART!

THANK YOU !





LI Qi

Shanghai CDC, China

Impact of Digitization on birth registration completeness in Lesotho: A Mixed-Methods study



Presented by : Advocate Liako Pearl Mokoena Mabathoana

National Identity and Civil Registry; Lesotho

RESEARCH OVERVIEW

Problem Statement

- Lack of universal and timeous birth registration causing low completeness rates.
- Lack of clear notification systems due to weak stakeholders' collaboration
- Limited technological infrastructure and inadequate human capital

Objective of the study

- to study the impact of digitization systems in improving birth registration completeness.
- to study challenges inherent with digitization of birth registration and successes thereof.

Background and context

- Civil Registration in Lesotho is mandatory in terms of laws of Lesotho.
- However, this cannot be enforced because it is not universal and accessible to all. People travel long distances and spend a lot of money on travelling costs to reach registration offices.
- Lesotho introduced digitization system in a form of automated CRVS system in 2013.
- This CRVS system links birth registration with ID management system and generates the unique identifier from birth registration.
- ***KOBO*** e-notification application installed in tablets was piloted in 2022 and officially launched in 2023.

Literature review gap, research questions & significance

Literature gap

- Most studies focus on infrastructure or access to CRVS systems.
- Few studies assess actual completeness outcomes, stakeholder dynamics, or the role of legal frameworks in digital CRVS systems especially in the context of Lesotho.

Main research Questions

- Whether use of digitization systems in civil registration has improved birth registration completeness rates in Lesotho?
- What challenges and successes have Lesotho experienced in implementing digitization of birth registration?

Significance of the study

- The study offers critical insights to help Lesotho strengthen her CRVS system and accelerate progress towards **SDG16.9** by;
- Enhancing e-notification mechanisms for timely and accurate digital reporting
- Modernizing legal frameworks to align with technological advances
- Fostering coordinated stakeholder collaboration across government, health, and community sectors

Methodology

Mixed Method Design:

Quantitative:

- Analysis of birth registration data pre – (2008-2012) and post –(2013-2022) digitization.
- Birth registration data was gathered from Vital Statistics Reports published by BOS.

Qualitative:

- Data collected by use of purposive sampling technique where interviews with registrars (district managers) and civil registration officers were conducted to explore challenges and successes of digitization in their respective districts.

Analysis

- Combined statistical trends with grounded insights from the participants showing the rationale behind the differentials in birth registration numbers per year highlighting challenges and successes thereof.

Key findings and implications

SUCCESSES	CHALLENGES
• Increased birth registration numbers and completeness rate from 2.8% in 2008 to 66.1% in 2022 • Improved Timeliness and Efficiency • Improved Traceability and verification	• Limited Coverage of Digitization systems • No provision of digitization in the legal framework • Incompetence of civil registration assistants • Lack of stakeholders' participation in digitization processes • Lack of stakeholder Cooperation and coordination structures
OPERATIONAL IMPLICATIONS	**POLICY RELEVANCE**
• Formalize stakeholders working relationship (MOUs) • Establish stakeholders' coordination structures from high level • Roll out and intensify use of tablets for notification in all districts • Employing Civil Registration Assistants on permanent basis • Intensify training for Civil Registration Assistants	• Amendment of Registration of Births and Deaths Act of 1973 • Amendment of Registration of Births and Deaths Regulations of 1974

CART Program Structure and my experience

Online Learning

- Self-paced Moodle classes which enable participants to easily squeeze in their busy schedules
- Assignments with clear deadlines and feedback

In-Person Workshops

Dubai: Proposal presentations + mentor feedback

- Having access to all mentors present was beneficial

My initial topic was; *"Registration of births and deaths using digitization systems in Lesotho. Challenges and successes"*

Thailand: First draft papers + peer review + refinement

- My first draft paper was marked by three mentors from ECA which greatly helped to refine it.

CART Personal Impact

- Developed a publishable paper on digitization and birth registration in Lesotho.
- Gained mentorship in operational research from international experts.
- Improved research, writing, and presentation skills to inform policy.
- Built a global network of CRVS professionals through CART program

Outcome of the project

Policy Influence Initiated

My research has already informed a formal recommendation for legislative amendment.

I authored a policy brief titled: *'Digitization! A Call for Amendment of the Registration of Births and Deaths Act of 1973.'*

Publication in Progress

The full paper is complete and undergoing review towards publication including the ECA CRVS peer review publication.

Evidence-Based Advocacy

This work bridges research and policy, showing how academic inquiry can drive real-world change.


Q & A


Stats Café
Good coffee makes your day, but good data helps you decide.

Links

[CART webpage and how to apply]

[2026 CRVS Research forum]

crvs-research@un.org

ESCAP
Economic and Social Commission for Asia and the Pacific

Stats Café
Good coffee makes your day, but good data helps you decide.

Next Stats Café will be on: [Building Resilient CRVS Systems]

Date: Tuesday 14 October 2025 (13:00-14:00 pm, UTC+7)

Registration at: https://forms.office.com/e/5q5K0z0dM1

