

Structural Equation Modelling of Quality of Life in Adults with Down syndrome in Nigeria

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Introduction

In Nigeria...

- there are **no statistics** on the population of people with Down syndrome (DS)(Oloyede 2011).
- people with DS are **often stigmatised and discriminated against**, so they are less likely to be recognised and supported (Ajuwon 2012; Sango 2017).

Overarching Aim and Objectives

Aim

To determine the factors that affect the QoL in adults with DS in Nigeria.



Structural Equation Modelling



Objectives

- To measure the QoL of adults with DS and build QoL models using self-and proxy reports.
- To examine relationships between the QoL domains.
- To evaluate the differences and similarities in QoL in adults with DS across each geopolitical zones.

Conceptual Framework

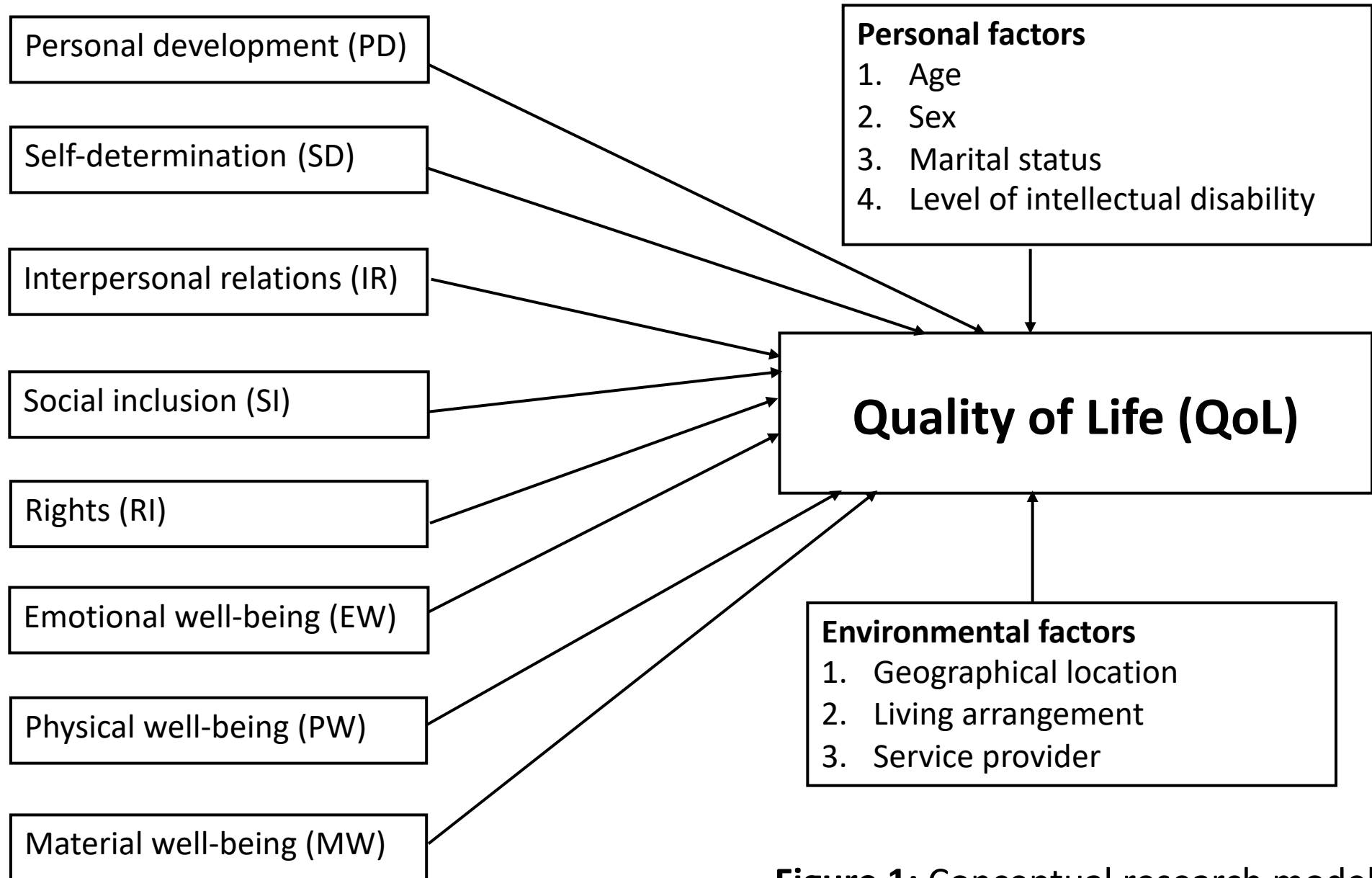


Figure 1: Conceptual research model

Methodological Approach

A cross-sectional survey was undertaken in Nigeria utilising the Personal Outcomes Scale (POS), a reliable and validated QoL questionnaire comprising 48 items.

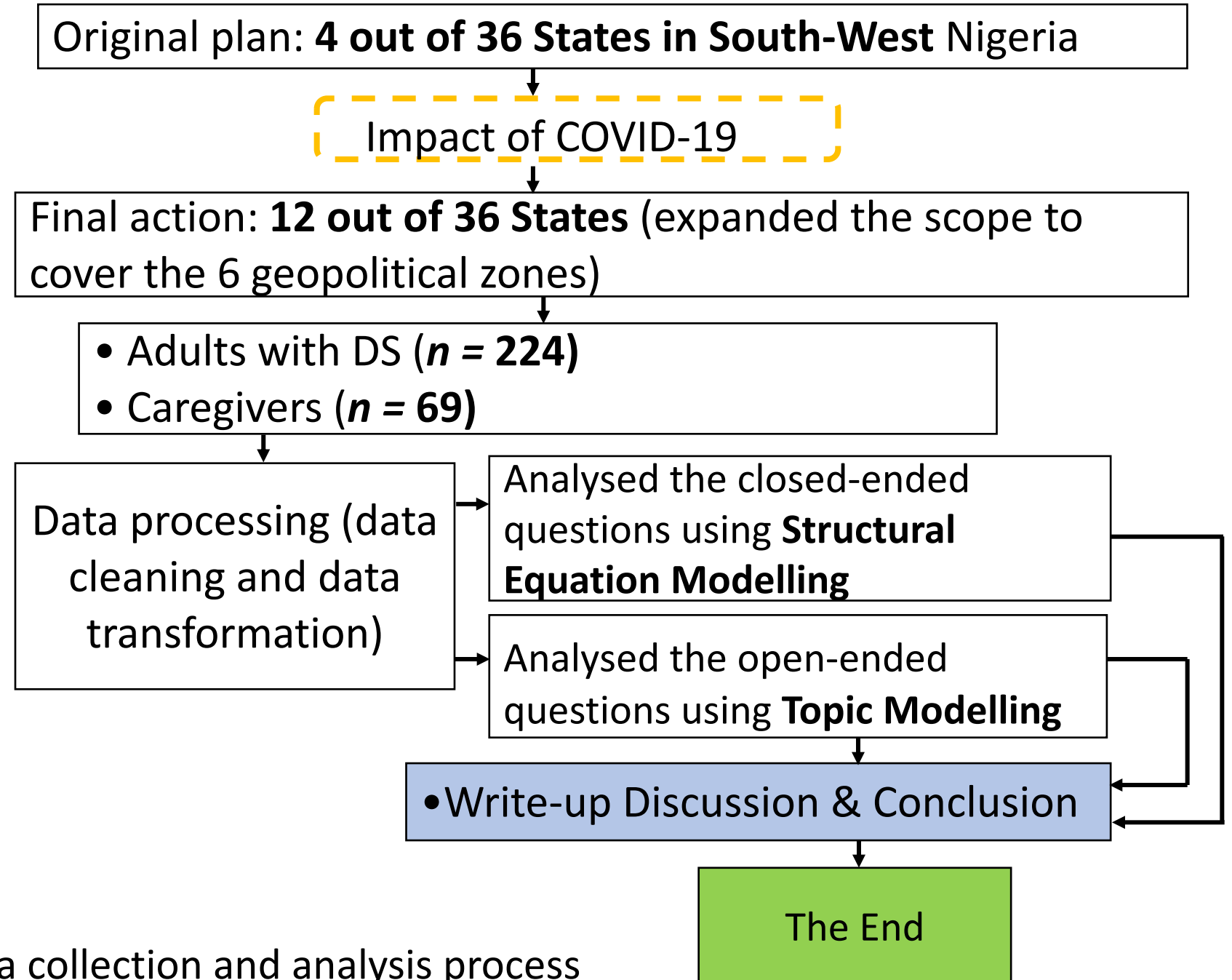


Figure 2: Flowchart of the data collection and analysis process

Study Areas

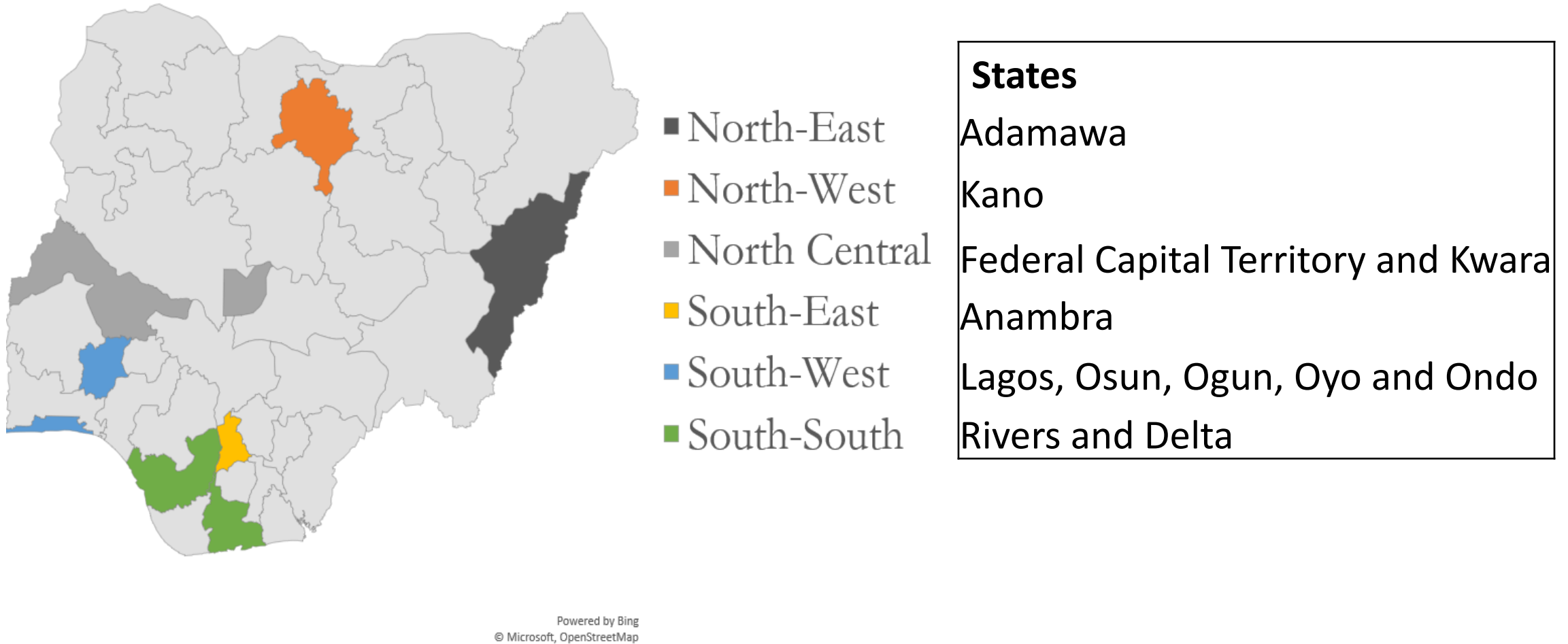


Figure 3: Map of Nigeria showing the study areas of data collection

Results: Descriptive Statistics

Characteristic	Variable	Frequency (percentage)
Age	18-24	135 (60.26%)
	25-34	43 (19.19%)
	35-44	42 (18.75%)
	45-54	3 (1.33%)
	55-64	1 (0.44%)
Sex	Male	140 (62.5%)
	Female	84 (37.5%)
Level of ID	Mild	74 (33.03%)
	Moderate	93 (41.51%)
	Severe	20 (8.92%)
	Profound	1 (0.44%)
	Don't know	36 (16.07%)
Living arrangements	In a boarding school	61 (27.23%)
	Independent living	3 (1.33%)
	Living in a residential care	53 (23.66%)
	Living with family members	107(47.76%)



Table 1: Demographics of adults with DS

Results from Self-reported QoL Data: Measurement Model

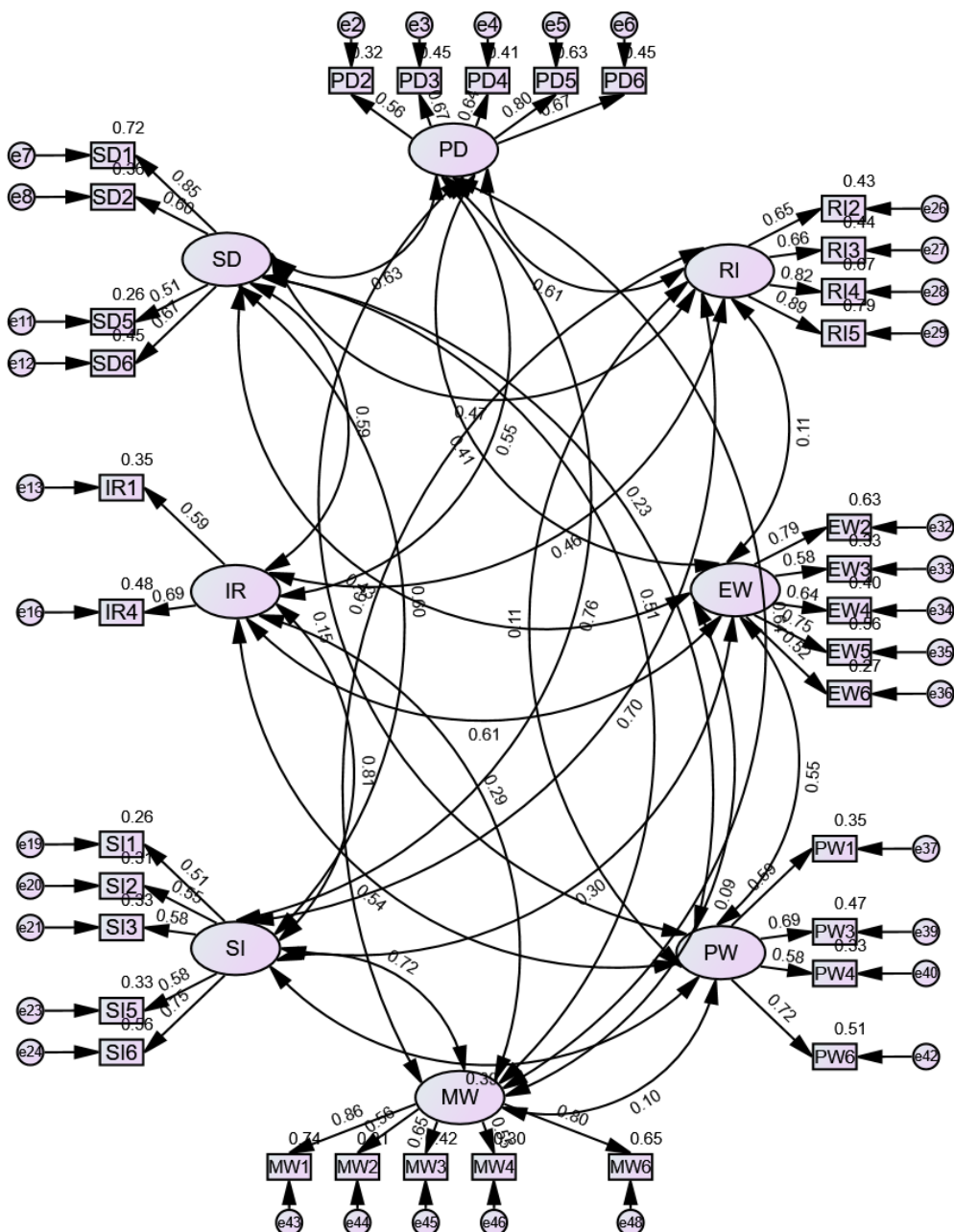


Figure 4: Hypothesised confirmatory factor analysis (CFA) final model for adults with DS

Results from Proxy reported QoL Data: Measurement Model

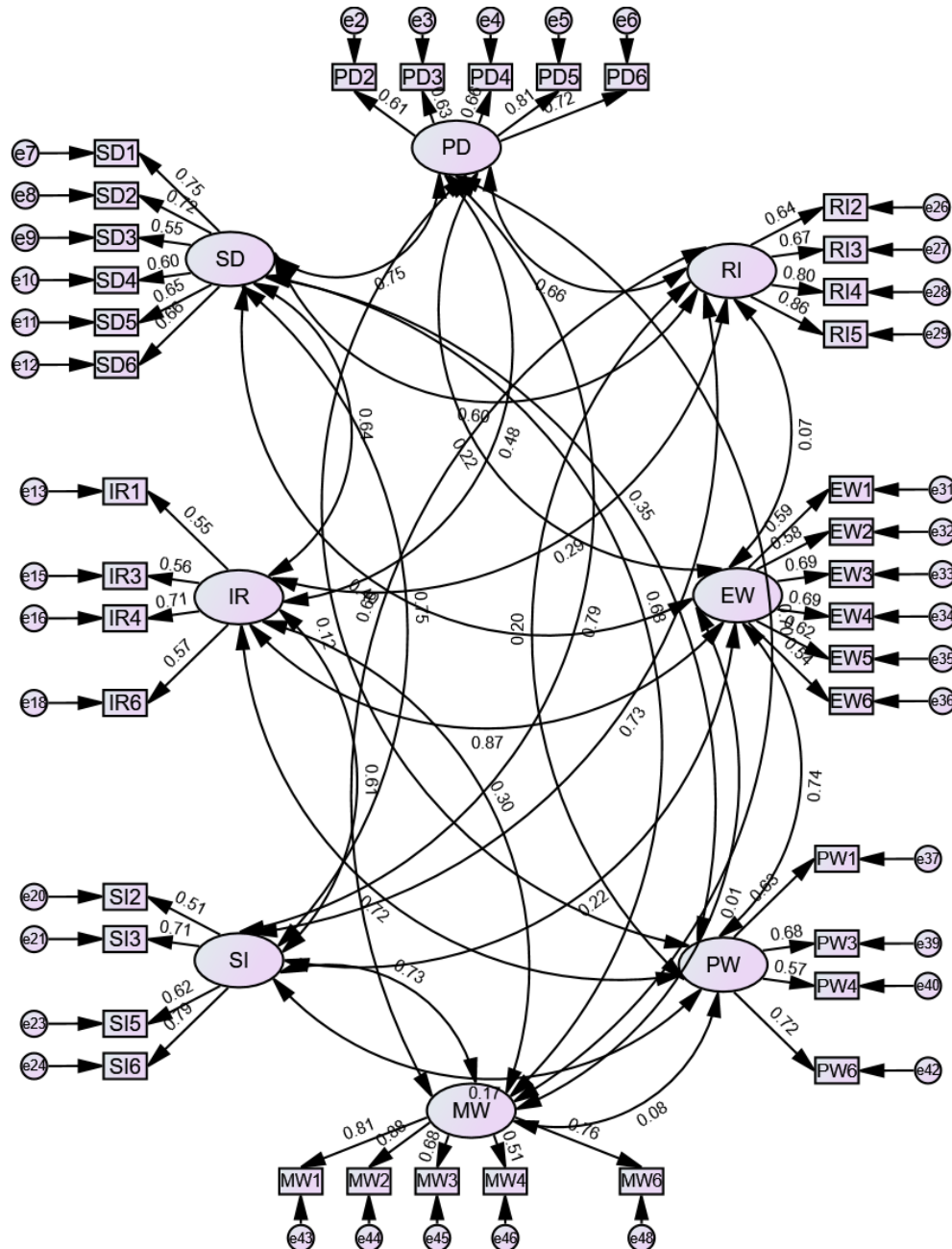


Figure 5: Hypothesised CFA final model for caregivers

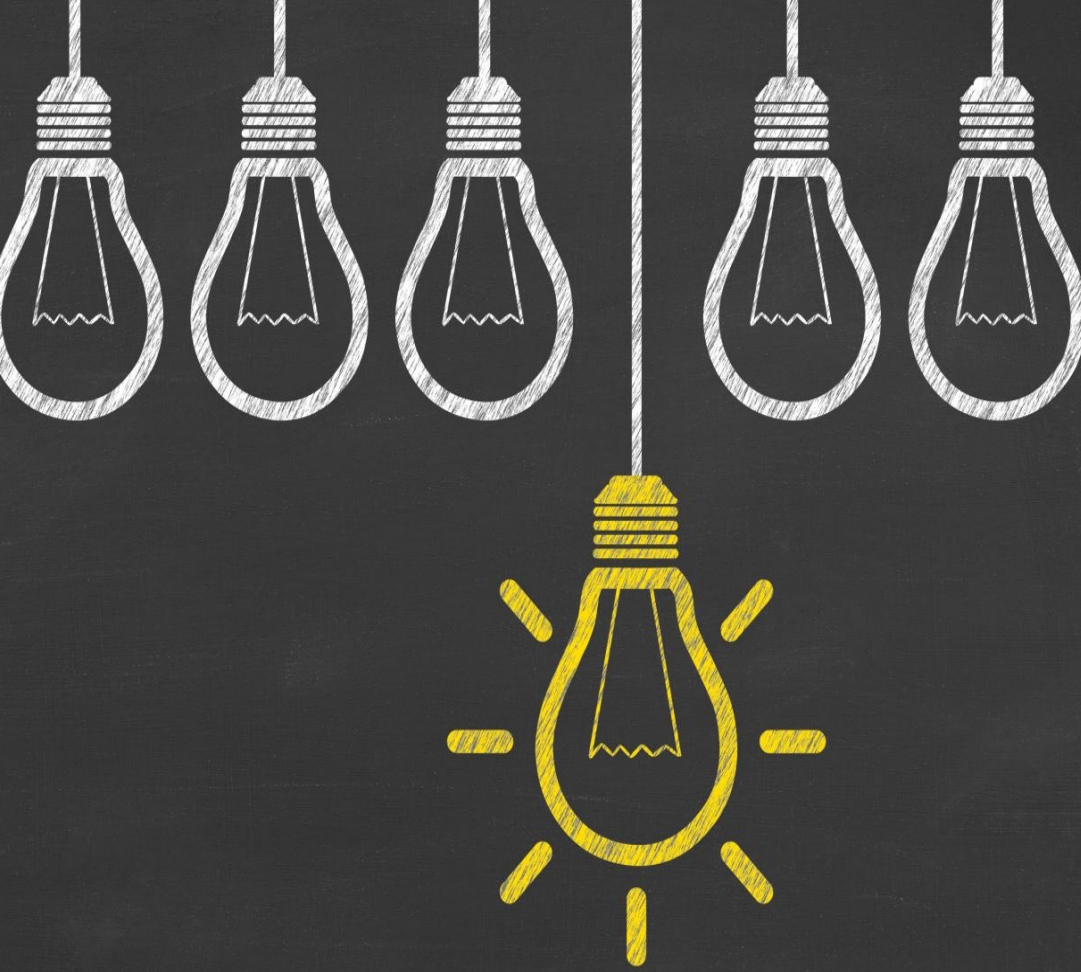
Results from Self-and-Proxy Reported QoL Data: Structural Model (Table 3)

Hypotheses	Proposed relationship	Estimate (Path coefficient) for adults with DS	Estimate (Path coefficient) for caregivers
H1a	PD<-->SD	0.083***	0.112***
	PD<-->IR	0.085***	0.069***
	PD<-->SI	0.137***	0.166***
	PD<-->MW	0.123***	0.136***
	PD<-->RI	0.136***	0.126***
	PD<-->EW	0.045***	0.025*
	PD<-->PW	0.018^{ns}	0.015^{ns}
H2a	SD<-->SI	0.102***	0.154***
	SD<-->IR	0.085***	0.089***
	SD<-->MW	0.092***	0.129***
	SD<-->RI	0.097***	0.112***
	SD<-->EW	0.045***	0.044***
	SD<-->PW	0.025*	0.044***
H3a	IR<-->SI	0.161***	0.12***
	IR<-->RI	0.113***	0.053**
	IR<-->EW	0.074***	0.092***
	IR<-->PW	0.07***	0.087***
	IR<-->MW	0.062**	0.054***
H4a	SI<-->RI	0.201***	0.19***
	SI<-->EW	0.042**	0.035*
	SI<-->PW	0.06***	0.03^{ns}
	SI<-->MW	0.18***	0.193***
H5a	RI<-->EW	0.019^{ns}	0.01^{ns}
	RI<-->PW	0.021^{ns}	0.032*
	RI<-->MW	0.197***	0.158***
H6a	EW<-->PW	0.051***	0.069***
	EW<-->MW	0.014^{ns}	0.001^{ns}
H7a	PW<-->MW	0.016^{ns}	0.013^{ns}
Notes: p < 0.001***, p < 0.01**, p < 0.05*, Not significant (NS) p > 0.05			

- In Table 3, the results are statistically significant at $p < 0.001^{***}$, $p < 0.01^{**}$ and $p < 0.05^*$.
- “NS: $p > 0.05$ ” implies that the result is not statistically significant.
- For instance, in H1a, all relationships were statistically significant except PD <--> PW, which showed no statistical significance in both self-and proxy-reported data.

Similarities and Differences in Self-and-Proxy Reported Data (Table 4)

	Similarities	Differences
Relationship across domains	• Based on self-and-proxy reported data, there were similarities in the interconnectedness of the 8 QoL domains. • There was no statistical significance between PD <--> PW, RI<-->EW, EW<-->MW and PW<-->MW for both reported data	• In the self-reported data, there was a significance difference between variables SI and PW, but it was the opposite in proxy-reported data. • In the self-reported data, there was no statistical significance between RI<-->PW.
Observed variables used for the final model	• After revising the model, only 34 items were used as observed variables for self-reported.	• 38 items were used.



Summary

- In H1a, positive associations were found between PD and 6 other domains (SD, IR, SI, RI, EW, MW) for both groups. No significant link between PD and PW.
- In H2a, positive associations were found between SD and other QoL domains for both groups. Caregivers had slightly stronger connections.
- Results would inform targeted interventions for enhanced QoL in DS individuals



References

- Ajuwon, P. M., 2012. A Study of Nigerian Families who have a family member with Down Syndrome. *Journal on Developmental Disabilities*, 18(2), pp. 36-49.
- Oloyede, O. A., 2011. Down Syndrome in Nigeria Sub Saharan Africa. In: S. Dey, ed. *Prenatal Diagnosis and Screening for Down Syndrome*. Croatia: InTechOpen, pp. 165-176.
- Sango, P.N., 2017. Country profile: intellectual and developmental disability in Nigeria. *Tizard Learning Disability Review*, 22(2), pp. 87-93.



**Thank you for
your attention!**

Any questions?

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