RADAR – Gender Analysis Inference Matrix Template

When a project has many gender variables and many health outcomes, a matrix of inference tests can be a helpful way to observe all of the relationships in a given table. These matrices can be used to identify trends in which gender variables or domains of variables show associations, and which do not. Alternatively, they can also help to identify which health outcomes have the most associations with gender variables, and which seem to be statistically independent of gender dynamics. Color-coding and formatting can help with either of these goals.

It is necessary to highlight, however, that the matrix is the start of inference testing. It is often helpful to then rank any statistically significant associations by p-value or effect size to compare with one another and draw further conclusions. Depending on the number of combinations, also, there may need to be correction for multiple testing, in order to mitigate the risk of false positives. The Bonferroni correction (and other family-wise error rate correction methods) tend to be more stringent compared to the False Discovery Rate correction method.

Also, the gender matrix may be run without adjustment or with adjustment for major confounding variables. However, many gender variables have different relationships to one another and to sociodemographic characteristics. Therefore, rather than using the same covariates to adjust for every model, it is often better to then run another model between gender indicator and health outcome with more careful covariate selection than accounts for the specific relationship a gender indicator is hypothesized to have with other confounders.

In this example, the gender analyst would run each model with the gender indicator as an independent variable, and the health outcome variable as the dependent variable using regression (in this example, all of the outcomes were binary and therefore logistic regression was used). The p-value is presented in the cell and indicates a statistically significant association. Models were excluded if they failed to converge, or if there are too few observations to reasonably test the association.

	Received any tetanus		Used condoms		Received Malaria Prophylaxis		Breastfed last child	
	Women	Men	Women	Men	Women	Men	Women	Men
Able to leave the house	Non-sig	Non-sig	Non-sig	Non-sig	Non-sig	Non-sig	0.042717	Exclude
Women can make own decisions about health	Non-sig	Exclude	0.008625	Non-sig	Non-sig	Non-sig	Exclude	Exclude
Women can make major purchase decisions	Non-sig	Exclude	0.002416	Non-sig	Non-sig	Non-sig	Exclude	Exclude
Women can make decisions to visit friends/family	Non-sig	Exclude	Non-sig	Exclude	Non-sig	Exclude	Exclude	Exclude

Women/both makes major purchases	Non-sig	Exclude	0.002416	Non-sig	Non-sig	Non-sig	Exclude	Exclude
Women/both makes daily purchases	Non-sig	Exclude	0.002464	Non-sig	Non-sig	Non-sig	Non-sig	Exclude
Women/both sells poultry	Non-sig	Non-sig	0.046953	Non-sig	Non-sig	Non-sig	Exclude	Exclude
Women/both sells livestock	0.035629	Exclude	Non-sig	Non-sig	Non-sig	Non-sig	Non-sig	Exclude
Women decide how to use own money	Exclude	Exclude	Exclude	0.022659	Exclude	Non-sig	Exclude	Exclude
Partner attended ANC	0.001283		Non-sig		0.016711		Exclude	
Partner attended delivery	Non-sig		Non-sig		Non-sig		Exclude	
Husband attended HF for family	Non-sig		Non-sig		Non-sig		Exclude	
Woman has own money	Non-sig		0.001334		Non-sig		Exclude	
Woman worked last week	Non-sig	Exclude	Non-sig	Non-sig	Non-sig	Non-sig	Non-sig	Exclude
Woman worked last year	Non-sig	Exclude	Non-sig	Exclude	Non-sig	Non-sig	Exclude	Exclude
Access to mobile banking	Exclude		0.00084		Non-sig		Exclude	
Has own bank account	Exclude	Exclude	Exclude	Exclude	Exclude	Exclude	Exclude	Exclude
Has mobile phone	Non-sig		1.27E-06		Non-sig		Non-sig	
Husband justified in beating wife	Non-sig	Non-sig	0.048974	Non-sig	Non-sig	Non-sig	Exclude	Exclude
Childbearing is women's concern	Non-sig	Exclude	Non-sig	Non-sig	Non-sig	Non-sig	Exclude	Exclude
Doctor is necessary for delivery	Exclude	Exclude	Exclude	Exclude	Exclude	Exclude	Exclude	Exclude
Should the husband accompany to ANC?	Exclude		Exclude		Exclude		Exclude	
Should the husband accompany to delivery?	Exclude		Exclude		Exclude		Exclude	