**Appendix 3**

**R script for pair-wise meta-analysis**

**## The following library used in our calculation**

library(dplyr)

library(meta)

library(dmetar)

library(gemtc)

library(metafor)

library(forestplot)

library(tidyverse)

**## Meta-analysis for OR**

m.gen <- metagen(TE = TE, seTE = seTE,

data = tobacco\_OR,

studlab = study,

sm = "OR",

fixed = TRUE, random = TRUE,

method.tau = "REML",

hakn = TRUE)

summary(m.gen)

**## Meta-analysis for coefficients**

m.gen <- metagen(TE = TE, seTE = seTE,

data = tobacco\_coff,

studlab = study,

sm = "MD",

fixed = TRUE, random = TRUE,

method.tau = "REML",

hakn = TRUE)

summary(m.gen)

**## Publication bias**

library(meta)

## Funnel plot

funnel.meta(m.gen, col = "black")

## Publication bias test

metabias(m.gen, method.bias = "linreg")

eggers.test(m.gen)

## Addressing publication bias: Trim-and-Fill estimate

tf <- trimfill(m.gen)

summary(tf)

## Subgroup meta-analysis by country income group

update.meta(m.gen,

subgroup = inc,

tau.common = FALSE)

**R script for Network meta-analysis**

**## The following library used in our calculation**

library(dmetar)

library(gemtc)

library(netmeta)

library(metafor)

library(forestplot)

library(tidyverse)

## Model Fitting

m.netmeta <- netmeta(TE = TE, seTE = seTE,

treat1 = treat1, # Policy

treat2 = treat2, # Control

studlab = studyid, data = data\_tobacco,

sm = "OR",

comb.fixed = FALSE, comb.random = TRUE,

reference.group = "Control",

details.chkmultiarm = TRUE,

sep.trts = " vs ")

m.netmeta

decomp.design(m.netmeta)

**## Tobacco Policy Ranking**

rank<-netrank(m.netmeta, small.values = "bad")

plot(rank, low = "red", mid = "yellow", high = "green", col = "black",

name ="",

main.col = col,

legend = TRUE,

axis.size = 12,

digits = 2)

**## Network forest plot**

forest(m.netmeta, reference.group = "Control",

digits=2,

drop.reference.group = TRUE,

axis.size = 14,

label.left ="Favors Control",

label.right ="Favors Policy",

clip = c(0.5, 1, 1.5,2.0, 2.5),

xlog = TRUE,

smlab = paste("","Random Effects Model"),

rightcols = c("effect", "ci"),

just.addcols = "right",

sortvar = -Pscore,

drop = TRUE,

lineheight = "auto",

col = fpColors(box = "royalblue",

line = "darkblue"))