

clRkouk

I onh eV; kedu , d , d h oKkfud 0; oLFkk gs
 ftl ds }kjk [kk| inkFKk, oa lks ka dcl a kstu] tS sfd
 #i&jak] Li 'kz xdk] jpuk] rki eku , oalokn dcfy, ekuo
 vuf0; kvkadkseki k vls fo'ySk.k fd; k tkrk gA l onh
 ijh{k.k [kk| ka , oa i ksk.k ijh{k.k kftuea -f" , oa lk' kq
 mRi kn l fEefyr gD dcl vfhklu vak gA l onh ijh{k.k
 l kekl; r%0; atuka@mRi knkadh jat eal ekurk@vl ekurk
 dh rgyuk] 0; atuka@mRi knkadh orEku jat dk fu/klj .k]
 fdl h vo; o vFkok [kk| mRi kn dcfof'k"V xqk dk i rk
 yxku} vflre [kk| mRi kn eaml dsew xqkks dsl eko'k
 dk i rk yxku} mRi kn ds i pl i-hdj .k] mRi kn feyu]
 mRi kn fu#i .k bR; kfn dcfy, fd; k tkrk gA dHkh&dHkh
 , d h vfhkdYi ukvka dh vko'; drk gsrh gs tks mRi kn
 rgyukvads l epp; kagrqvfd i fj'kq) na fofhku rgyukvka
 1/4 kekl; r%ftl gci ijh{k.k cuke fu; a.k mi pkj rgyukvagr
 vfhkdYi uk, adgk tkrk g& grq varj&l adkh i fj'kq) ; ka
 nss okyh vfhkdYi uk, a bu i fj'LFkr; ka ea l gk; d gA
 fofhku ijh{k.k fol; kl tS sfd [k.M vfhkdYi uk, d
 drkj&LrEHk vfhkdYi uk, a, oauhM+vfhkdYi ukvka dcvrxz
 ijh{k.k cuke fu; a.k rgyukvads {ks= eacgr l svud akku
 fd; s x, gA bl fo"k; ij foopukRed , oa mR—"V
 i pjkoysdu dcfy, gnk; r vkfn 1/4 988 1/2 d k mRy[k fd; k
 x; k gA

OKW vkqj vfhkdYi ukvka dks l akks/kr fd; k tk
 l drk gsvls bulgal onh ijh{k.k kadsfy, mi ; kx fd; k tk
 l drk gA mi pkj cuke fu; a.k rgyukvagr OKW vkqj
 vfhkdYi uk, al kfgR; eami yC/k gdf tugal eppr l akksku
 dcmi jkdr l onh ijh{k.k kaesi jh{k.k cuke fu; a.k rgyukvka
 grq mi ; kx fd; k tk l drk gA mi pkj cuke fu; a.k
 rgyukvagr OKW vkqj vfhkdYi ukvka dk , d vPNk
 i pjkoysdu etenkj 1/4 996 1/2 eans[kk tk l drk gA fVax
 1/2 002 1/2 us OKW vkqj vfhkdYi uk fol; kl eafu; a.k&i jh{k.k
 mi pkj dUVKLVT dcvkadyu grqb"Vre vfhkdYi ukvka dh
 l jpk dhA vxoky bR; kfn 1/2 004 1/2 us fofy; e t 1/4 949 1/2
 ysvu oxz ijh{k.k cuke fu; a.k feyku }kjk rgyuk grq
 OKW vkqj vfhkdYi ukvka dh dN Jf.k; ka i klr dh tks
 fift; u , oa jk?kojko 1/4 987 1/2 }kjk nh xbZ fof/k dh , d
 fo'ksk fLFkr gA vxoky bR; kfn 1/2 004 1/2 us; g fl) dj
 fn; k gsfd ; s vfhkdYi uk, a 'kj & b"Vre gA gnk; r , oa
 ; kax 1/2 006 1/2 us mPp n{k fu; a.k l rfyv OKW vkqj
 vfhkdYi uk, al ftr dhA

; kax , oa i kdZ 1/2 007 1/2 us ijh{k.k cuke fu; a.k
 mi pkj rgyuk djsudcfy, OKW vkqj vfhkdYi uk, al ftr
 dhA l kuokus 1/2 007 1/2 }kjk tSrQ; ijh{k.k ka grq mi ; p
 vfhkdYi ukvka dh dN Jf.k; h nh xbZ fkhA ; kax , oa LVQdC
 1/2 008 1/2 us ijh{k.k cuke fu; a.k rgyuk grq OKW vkqj
 vfhkdYi ukvka dh dN Jf.k; ka l ftr dhA gnk; r , oa; kax
 1/2 005 1/2 ; ku , oa ykkt 1/2 010 1/2 vxoky , oa > k 1/2 009 1/2 us
 ijh{k.k mi pkj dcl kfk fu; a.k mi pkj dh rgyuk djsudc
 mnas ; dcfy, l tu vfhkdYi ukvka dh dN i) fr; kanhA

bl y[k e] cg&l =h; ijh{k.k qgrq mi pkj cuke
 fu; a.k vfhkdYi ukvka dh , d J[kyk dk l tu fd; k x; k
 gsftl l segroi wZ mRi kn rgyukvagr qmPp i fj'kq) rk dcl
 vkadyu mi yC/k gksr gA

vfhkdYi uk dh l jpk

eku yfht, l ijh{k.k mRi kn a dh l [; k t, , d
 fo"ke vHkT; vFkok fo"ke ?kr gA eku yfht, nksfu; a.k
 mRi kn g&t-1 i jLij vk; rh; ysvu oxz (MOLS) dsi wZ
 l epp; jpk dhft, A ysvu oxz dh vflre drkj dks gv
 nhft, A 'kSk l kjf.k; ka (t-1) x t vkdkj dh gA i Fke
 l kj.kh e] i Fke drkj dks i Fke fu; a.k rFk v&re drkj
 dks }rh; fu; a.k }kjk cny nhft, A bl h idkj }rh;
 l kj.kh e] }rh; drkj dks i Fke fu; a.k rFk v&re l s, d
 igyh drkj dks }rh; fu; a.k }kjk cny nhft, A bl
 i f0; k dks bl h idkj cuk, jf[k, A bl idkj t LrEHk dh
 i R; d l kj.kh e] t ijh{k.k mRi kn l h k u e k ?kVrs 0e ea
 i Fke fu; a.k }kjk i frLFkfir gks x, g&vls t ijh{k.k
 mRi kn l h k u e k c < fsoYkh; 0e ea }rh; fu; a.k }kjk
 i frLFkfir gks x, g&tc rd fd i R; d drkj nkska
 fu; a.k ka }kjk i frLFkfir gks tkrh gA vc nks l kjf.k; ka dks
 {k r th; bl idkj fudV jf[k, 1/4 d l e; ij nks l kjf.k; k&Z
 fd nksfu; a.k mRi kn l a p r l kj.kh ea dHkh Hkh fdl h Hkh
 , d drkj eal kfk&l kfk u fn[kA bl idkj dh (t-1) x 2t
 vkdkj dh vyx&vyx (t-1)/2 l kjf.k; ka cuk yfht, A
 i R; d l a p r l kj.kh dks m?okZj , d dcl u hps vl; bl
 idkj j [krs jfg, fd i R; d l kj.kh dh igpku cuh jgA
 i R; d l a p r l kj.kh dks, d l = dh rjg] , d l kj.kh dcl
 vlnj i R; d drkj d vof/k dh rjg vls i R; d LrEHk dks
 , d fu.kkz, d dh rjg yss l svflre 0; oLFk i fj .kke ea
 t+2 1/2 t ijh{k.k +2 fu; a.k 1/2 mRi kn ka eas = (t-1)/2 l =]
 p=(t-1) vof/k; ka i fr l = , oa 2t fu.kkz d k agr qcg&l =h;

I onh ijh{k.k gsrq, d vfhkdYi uk nrh gA ; svfhkdYi uk, a i Hkkj i Hkkokagrq l rfyrgA

ifj.kke ,oafoopuk

eku yhft, t=5 vls c=2 cg&l =h; I onh ijh{k.kkagrq ftl eas=2] p=4 vls n=10 dsMOLS dk mi ; ksx djrsqg , d l ftr vfhkdYi uk uhpsnh XkbZ g%

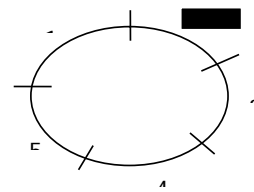
fu.kkZ d

vo/fk	I	II	III	IV	V	VI	VII	VIII	IX	X
i	0 ₁	0 ₁	0 ₁	0 ₁	0 ₁	1	2	3	4	5
ii	2	3	4	5	1	0 ₁	0 ₁	0 ₁	0 ₁	0 ₁
I iii	3	4	5	1	2	0 ₂	0 ₂	0 ₂	0 ₂	0 ₂
I= iv	0 ₂	0 ₂	0 ₂	0 ₂	0 ₂	2	3	4	5	1
v	1	2	3	4	5	0 ₂	0 ₂	0 ₂	0 ₂	0 ₂
vi	0 ₂	0 ₂	0 ₂	0 ₂	0 ₂	5	1	2	3	4
II vii	0 ₁	0 ₁	0 ₁	0 ₁	0 ₁	4	5	1	2	3
viii	5	1	2	3	4	0 ₁	0 ₁	0 ₁	0 ₁	0 ₁

; gka 1] 2]&5 ijh{k.k n'kkZs g\$ tcf d 0₁ , oa 0₂ nks fu; a.k inf'kr djrsqg mRi kn i Hkkokadcvkadyu gsrq l puk vk0; g (C) uhpsbl idkj fn; k x; k g%

6.73	-0.66	-0.86	-0.86	-0.66	-1.83	-1.83
-0.66	6.73	-0.66	-0.86	-0.86	-1.83	-1.83
-0.86	-0.66	6.73	-0.66	-0.86	-1.83	-1.83
-0.86	-0.86	-0.66	6.73	-0.66	-1.83	-1.83
-0.66	-0.86	-0.86	-0.66	6.73	-1.83	-1.83
-1.83	-1.83	-1.83	-1.83	-1.83	5.49	3.67
-1.83	-1.83	-1.83	-1.83	-1.83	3.67	5.49

bl vk0; g l s; g n'kk tk l drk gsf d ; g , d vka'kd l rfyrg vfhkdYi uk gStgkaij ijh{k.k mRi knkad c l h/ks i Hkko , d ifjorZu'khy oYkh; I kgp; Z ; kstuk dk ikyu dj jgs gA I kgp; Z ; kstuk ea mRi knkad dh , d l Hkkfor 0; oLFkk dksuhpsbl idkj fn[kk; k tk l drk g%



fdl h pki eafn; sx; smRi kn dcfy,] , dne ck; a vls nk; apki eafn[kk; h nsus okys ijh{k.k mRi kn i Eke l kgp; Z g\$ n' j s ck; a vls nk; a f}rh; I kgp; Z g\$ vr%

fofHku ijh{k.k mRi knkad l s l ad/kr i kFkfed dUVRLVt dk vkadyu rnkud kj nksfHku idkj dsid j.kkad sfd; k x; k gA

l h/ks i Hkkj i Hkkokagrq ijh{k.k cuke ijh{k.k $\bar{V}(\tau_t - \hat{\tau}_t) \sigma^{-2}$

, oa $\bar{V}(\rho_t - \hat{\rho}_t)$, ijh{k.k cuke fu; a.k $\bar{V}(\tau_t - \hat{\tau}_t)$

, oa $\bar{V}(\rho_t - \hat{\rho}_t)$ dcmRi knkad ad/kr dUVRLVt dsvkadyu

dsvls r id j.k dh x.kuk dcmnns; l sfodfl r fd; sx,

, l , , l i ksae dk mi ; ksx fd; k x; k gA t=5 vls c=2

cg&l =h; I onh ijh{k.kkagrq ftl eas=2] p=4 vls n=10 dsMOLS

dk mi ; ksx djrsqg , d l ftr vfhkdYi uk dk l af.kr vls r id j.k bl idkj g\$

$\bar{V}(\tau_t - \hat{\tau}_t) \sigma^{-2} = 0.436$, $\bar{V}(\tau_t - \hat{\tau}_c) \sigma^{-2} = 0.266$,

$\bar{V}(\rho_t - \hat{\rho}_t) \sigma^{-2} = 0.619$, oa $\bar{V}(\rho_t - \hat{\rho}_c) \sigma^{-2} = 0.367$.

fu"d"KZ

; g i) fr nks fu; a.k okys ijh{k.k mRi knkad c

fo'ke vHkkt; vFkok vHkkt; ?kk l d; k dh rgyuk gsrq

i Hkkj i Hkkokadcfy, l rfyrg vfhkdYi ukvkadh , d Jdkyk

l ftr djrh gA fu.kkZ dka dh l d; k ijh{k.k mRi knkad dh

l d; k dh nksqph pkfg, A ; svfhkdYi uk, avka'kd id j.k

l rfyrg gftuea ijh{k.k mRi kn ifjorZu'khy oYkh; I kgp; Z

; kstuk dk ikyu dj jgs gA ijh{k.k cuke fu; a.k dUVRLVt

dsfy, vuokfur id j.k ijh{k.k cuke ijh{k.k dUVRLVt

dh rgyuk eade ik; sx, vls ; g l h/ks dcl kFk&l kFk i Hkkj

i Hkko dcfy, ik; sx, rFkk ; sid j.k ijh{k.k mRi knkad dh

l d; k c<usij de gksx, FkA

I nHkZ

Aggarwal, M.L., Deng, L.Y. and Jha, M.K. (2004). Some new residual treatment effects designs for comparing test treatments with a control. *Journal of Applied Statistics*, **31** (9), 1065-1081.

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