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Gruppo Italiano per la Valutazione degli Interventi in Terapia Intensiva



Il confronto fra modelli pre- e post-operatorio nei pazienti cardiochirurgici

28° Meeting GiViTI - Pesaro 2019

Anna Zamperoni Ospedale Ca' Foncello, Treviso



**Modelli prognostici nel pz cch (mortalità postoperatoria) sviluppati con
dati preoperatori**

Euroscore I European System for Cardiac Operative Risk Evalutation **1999**

Euroscore II European System for Cardiac Operative Risk Evalutation **2011**

STS Society of Thoracic Surgeons Cardiac Surgery Risk Models **2008**

ACEF Age Creatinine Ejection Fraction Score **2011**



Modelli prognostici nel pz cch (mortalità postoperatoria) sviluppati con dati post-operatori all'ingresso in TI-CCH

- Modelli sviluppati TI-generali e validati in TI-CCH:

SAPS II, SOFA , APACHE II...

- Modelli sviluppati TI-CCH e validati in TI-CCH:

Intensive Care Unit Risk Stratification Score ICURS 1997

Cardiac Surgery Score **CASUS** 2005

Biagioli Model 2006

Acute Kidney Injury after Cardiac Surgery Model AKICS 2007

Salamonsen Model 2008

Meyfroid Model 2011



Doppi modelli → Pre e post

Ranucci M.

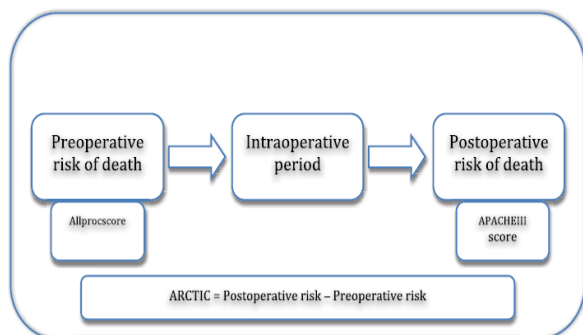
PlosOne Oct **2010**;Vol5:10(e13551)

EUROSCORE + picco lattati ed fc all'ingresso in TICCH

ACEF + picco lattati ed fc all'ingresso in TICCH

Coulson T.G.

*J Thorac Cardiovasc Surg.***2014**;148:6(3076-3083)



Doerr F.

Med Sci Monit Basic Res **2015**;21:172-178

Table 1. The 'modified' and the 'additive' CASUS.

	Organ system	Descriptor	Score points				
			0	1	2	3	4
Additive CASUS	Respiratory	PaO ₂ /FIO ₂ (mmHg/%)	Extubated	>250	151–250	75–150	<75
	Renal	Creatinine (mg/dl)	<1.2	1.2–2.2	2.3–4.0	4.1–5.5	>5.5
		CVVH/dialysis	No				Yes
	Liver	Bilirubin (mg/dl)	<1.2	1.2–3.5	3.6–7.0	7.1–14.0	>14.0
	Cardiovascular	PAR=HR × CVP/MAP	<10.1	10.1–15.0	15.1–20.0	20.1–30.0	>30.0
		Lactic acid (mmol/l)	<2.1	2.1–4.0	4.1–8.0	8.1–12.0	>12.0
		Intraaortic balloon pump	No				Yes
		Ventricular assist device	No				Yes
	Coagulation	Platelets × 10 ³ /μL	>120	81–120	51–80	21–50	<21
	Central nervous	Neurologic state	Normal		Confused	Sedated	Diffuse neuropathy
Modified CASUS	'Additive EuroSCORE'		0–2 (low)		3–5 (medium)		≥6 (high)



A score to estimate 30-day mortality after intensive care admission after cardiac surgery

Yoan Lamarche, MD,^a Mahsa Elmi-Sarabi, MSc,^b Lillian Ding, MSc,^c James G. Abel, MD, MSc,^d Demetrios Sirounis, MD,^e and André Y. Denault, MD, PhD^b

Method: Preoperative and intraoperative data from 30,350 patients in four hospitals were used to build a multiple logistic regression model estimating 30-day mortality after cardiac surgery. Sixty percent of the patients were used as a derivation group and forty percent as a validation group.

CONCLUSIONS

We have developed a new score to estimate 30-day mortality after cardiac surgery for patients who are admitted to cardiac surgery ICUs based on pre- and intraoperative risk factors. Although preoperative risk stratification is important, mortality risk also needs to be assessed immediately after surgery because the surgery represents a turning point for the patient and the beginning of the ICU care. This

*9 anni raccolta dati
4 centri*



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Caratteristiche popolazione pz cch:

- popolazione omogenea

età/fattori rischio/patologie/interventi/complicanze/...

- numerosità Giviti 19-23 centri, 7800-8000 pz / anno

- bassa mortalità ospedaliera 2-3%

 - valutati outcome alternativi a mortalità intraospedaliera

non disponibili dati sulla qualità della vita

tempo di degenza in TICCH/in ospedale molto legato all'organizzazione locale e standardizzazione dei percorsi → forti distorsioni sono possibili



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1° modello prognostico



2° modello prognostico





16.787 pz in 20 centri anni 2016-2017

esclusi pz con ch. aorta discendente ed endoprotesi

pz ammessi in TICCH prima dell'intervento

pz riammessi in TICCH

15.882 pz

13.500 utilizzati per costruzione dei modelli pre e post, i rimanenti per validazione interna



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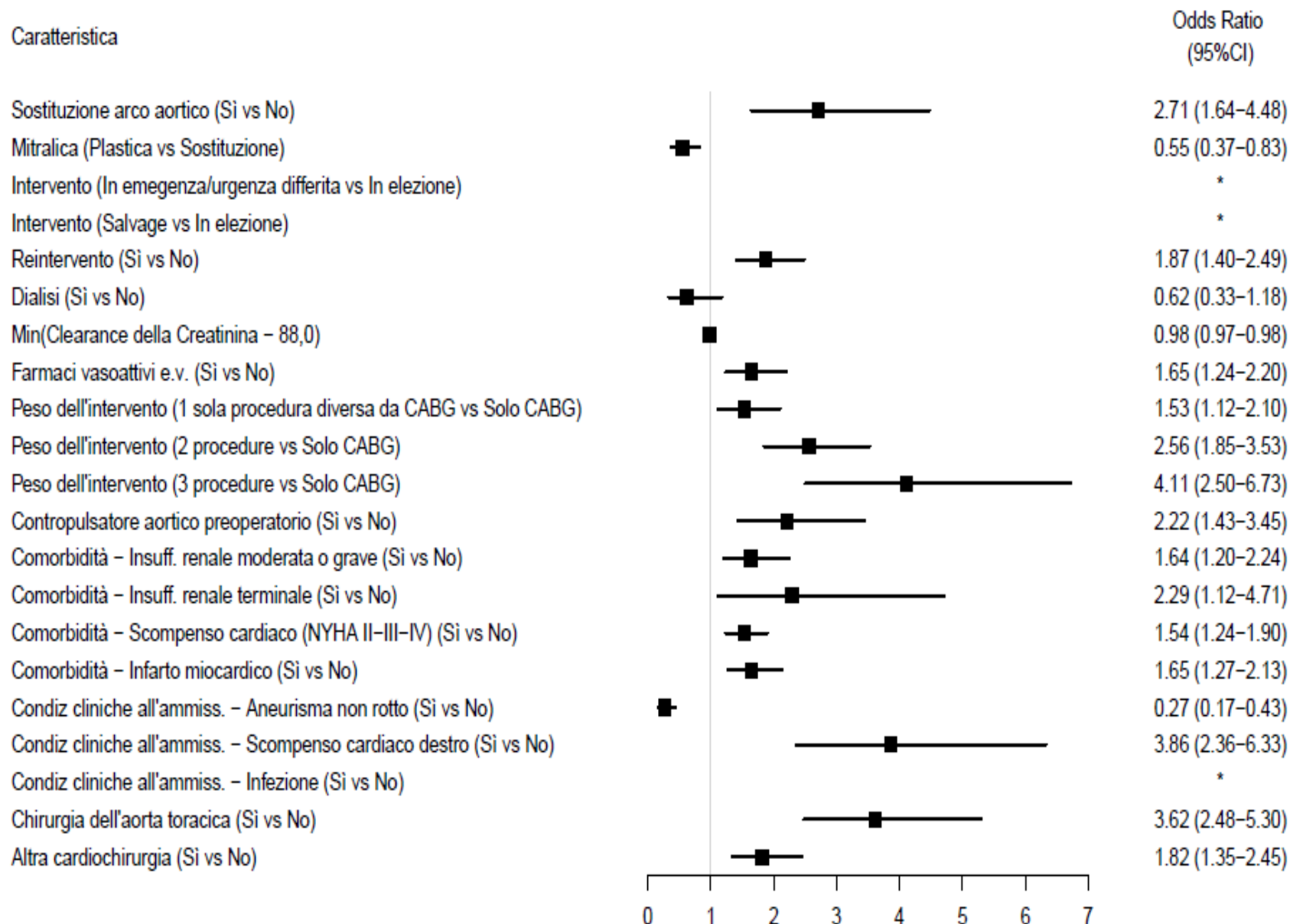


testate tutte le variabili presenti in entrambe gli anni
2016 e 2017

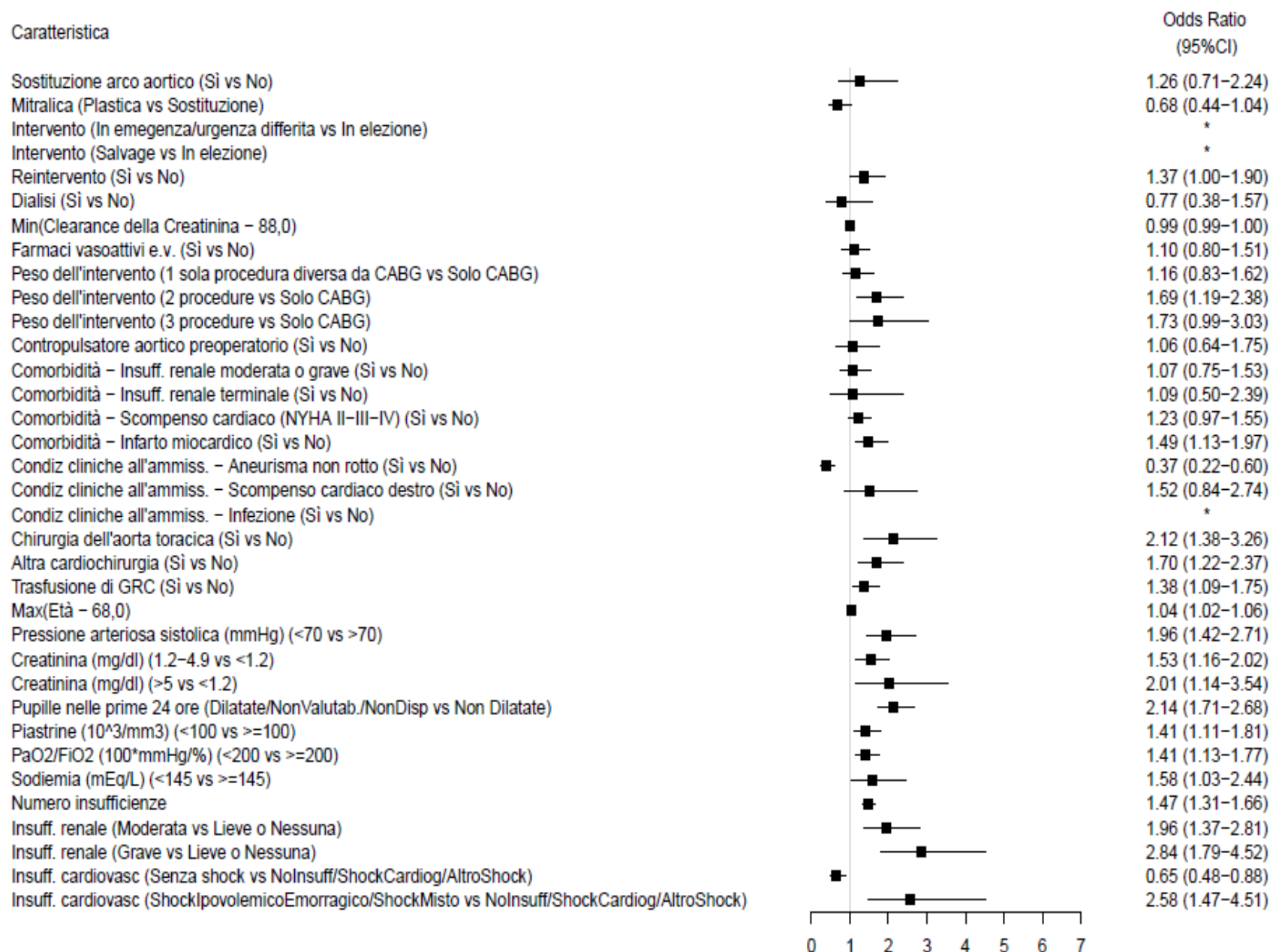
tenute solo quelle con ODDS ratio diverso da 1

cioè quelle che modificano
aumentando o diminuendo la mortalità ospedaliera

MODELLO PRE



MODELLO POST





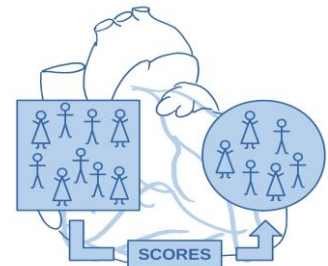
i modelli pre e post sono stati testati

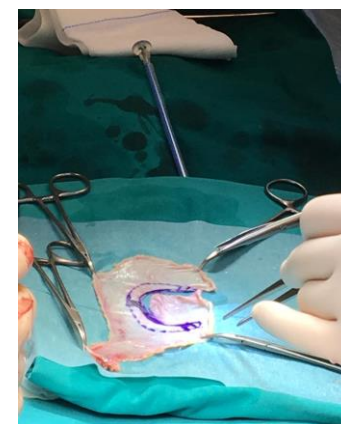
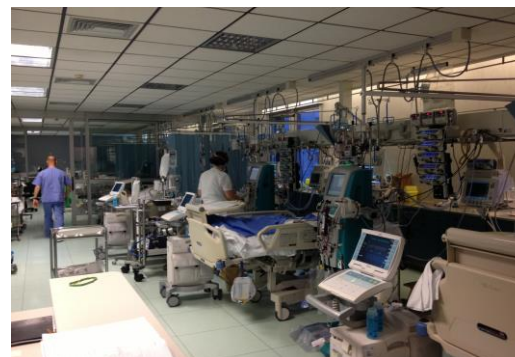
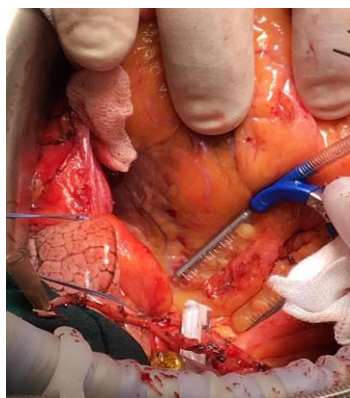
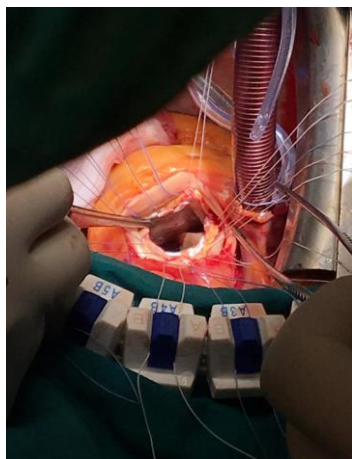
- nei sottogruppi STS: cabg, valvola singola, cabg-valvola singola
- nei sottogruppi elezione, urgenza differita, emergenza, salvage
- nei sottogruppi definiti dalle variabili entrate nel modello
- in sottogruppi definiti da variabili non entrate nel modello ma che il clinico riteneva potessero avere una rilevanza



Interazioni tra variabili

infezione (endocardite) sembra essere
protettiva nell'emergenza urgenza







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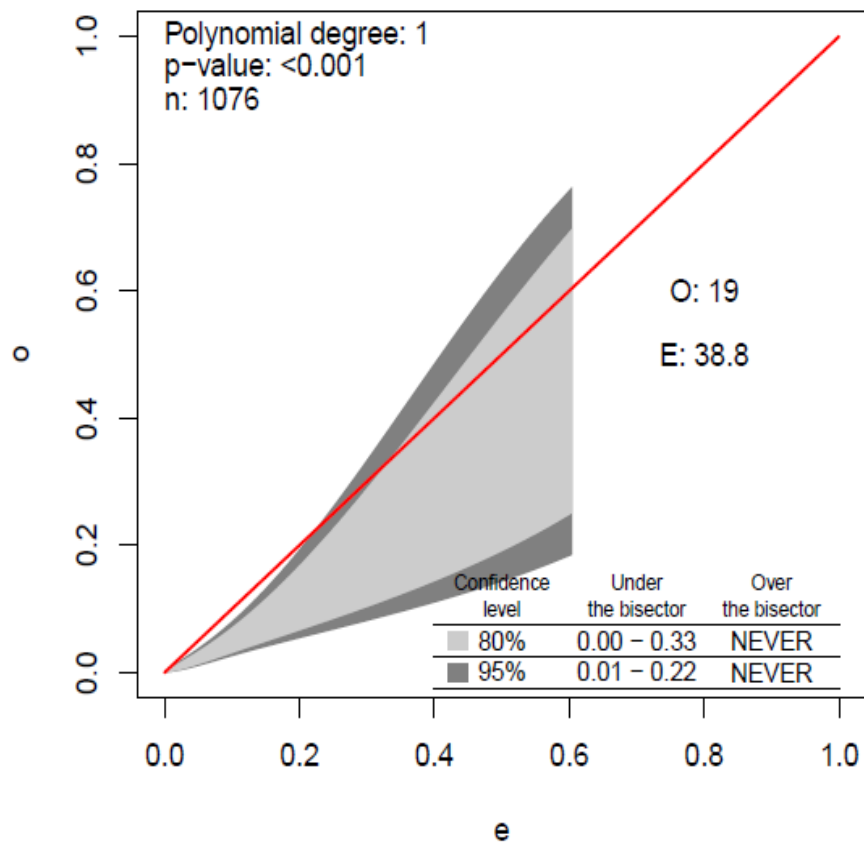


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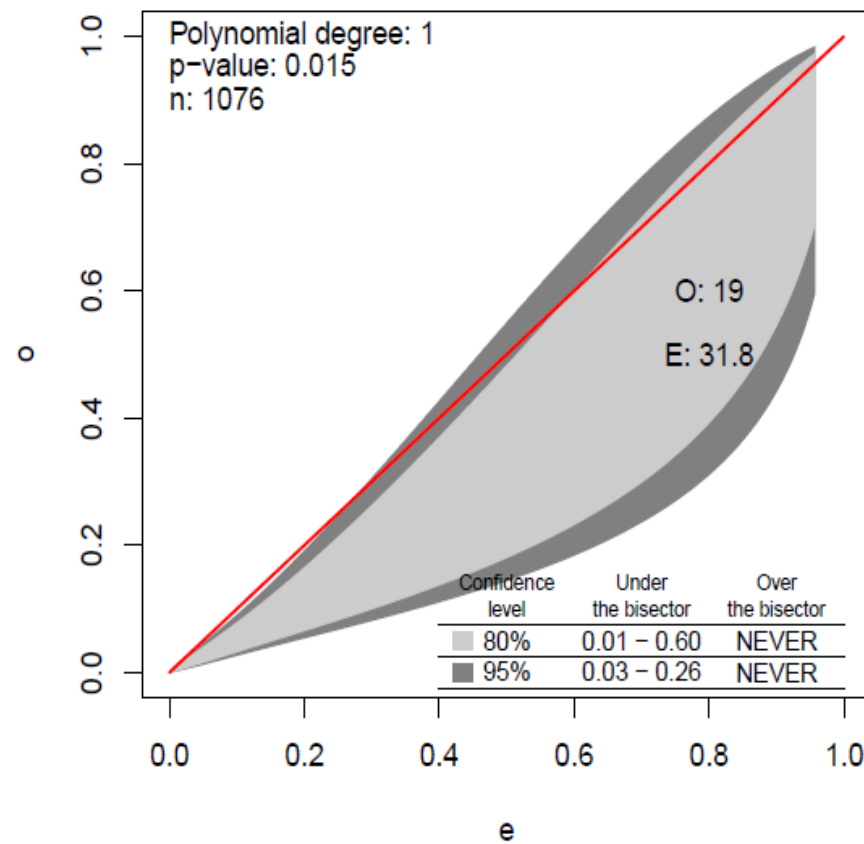
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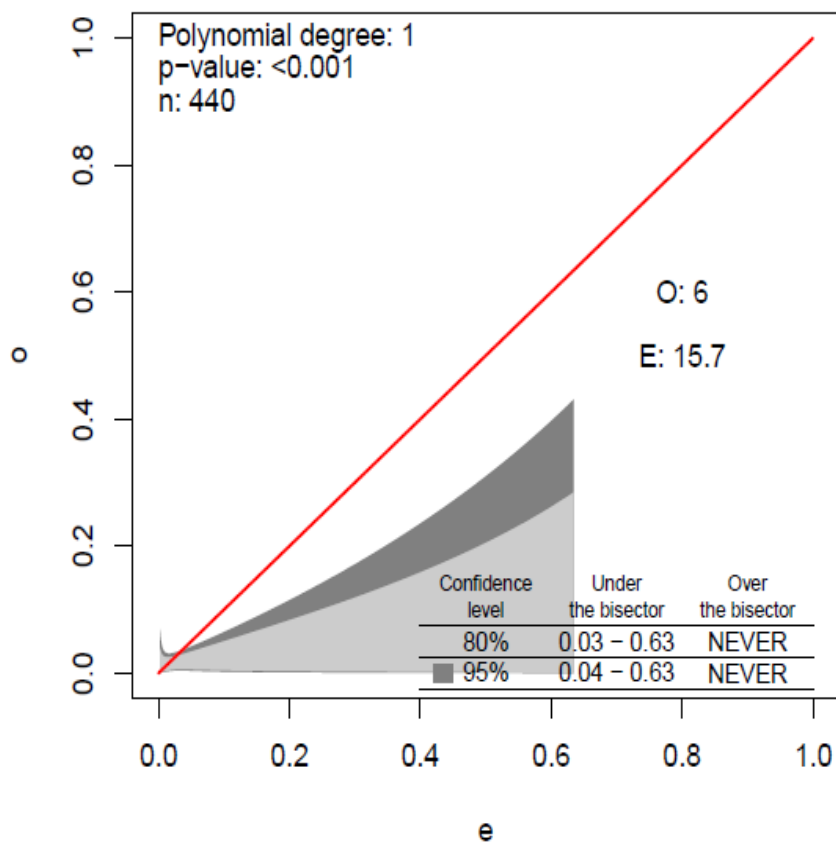


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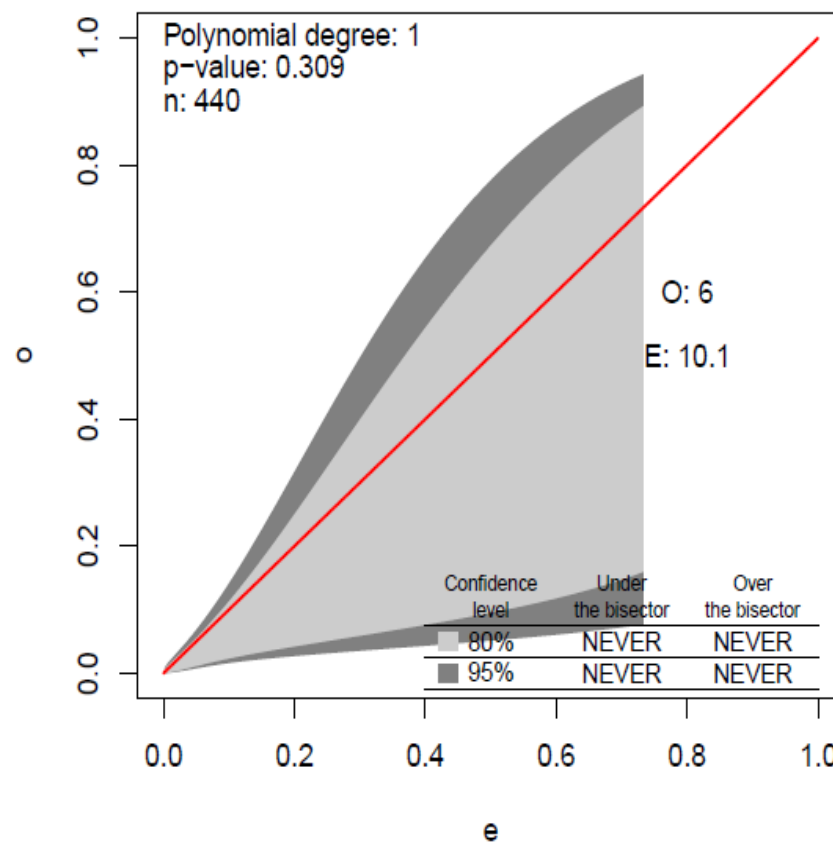
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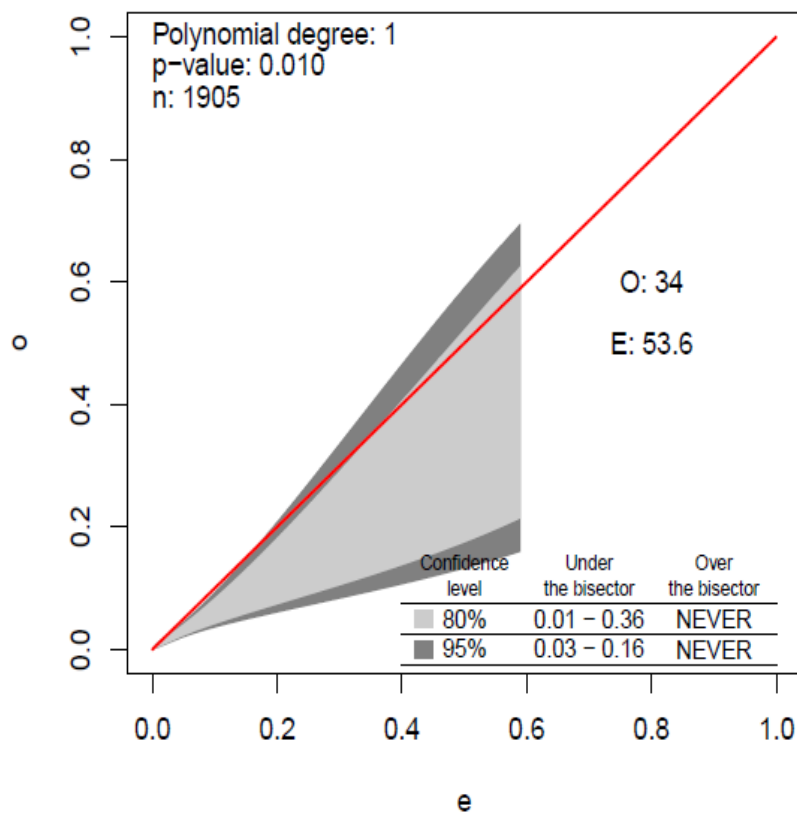


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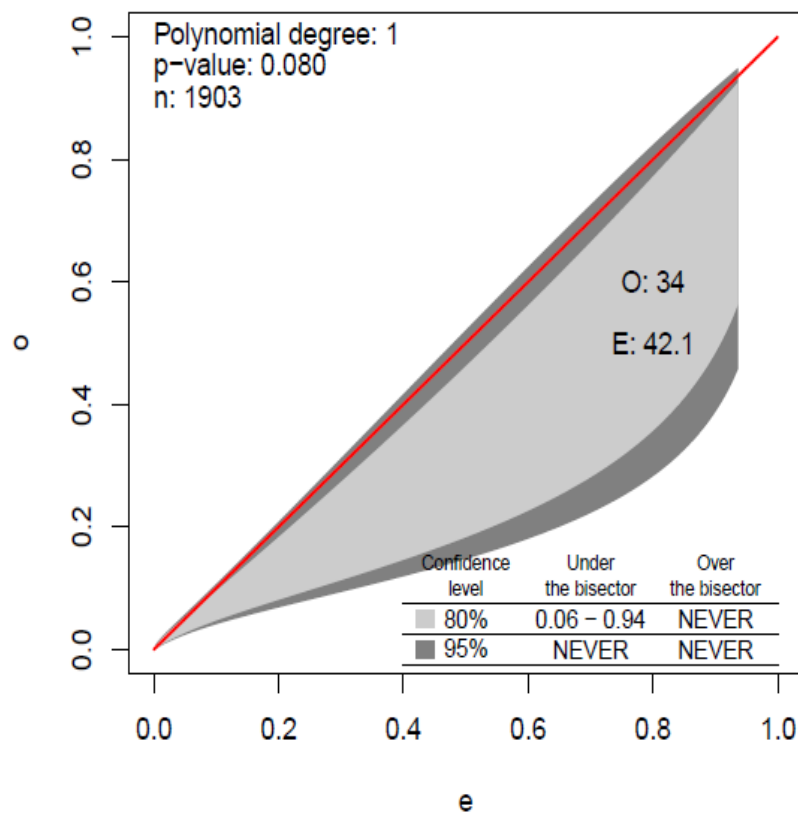
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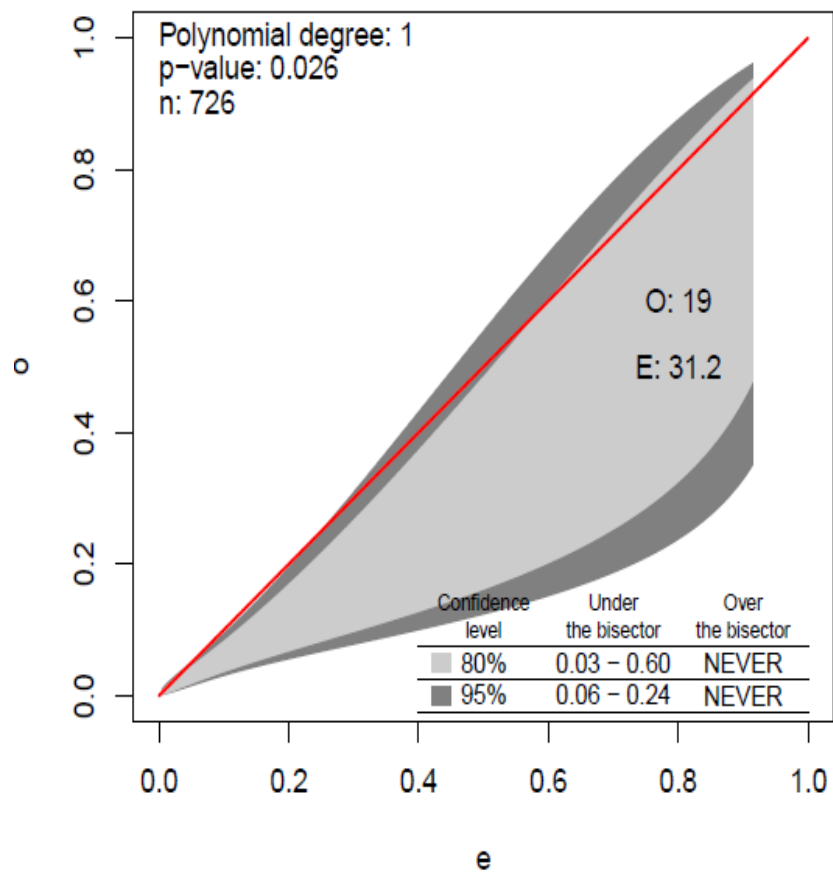


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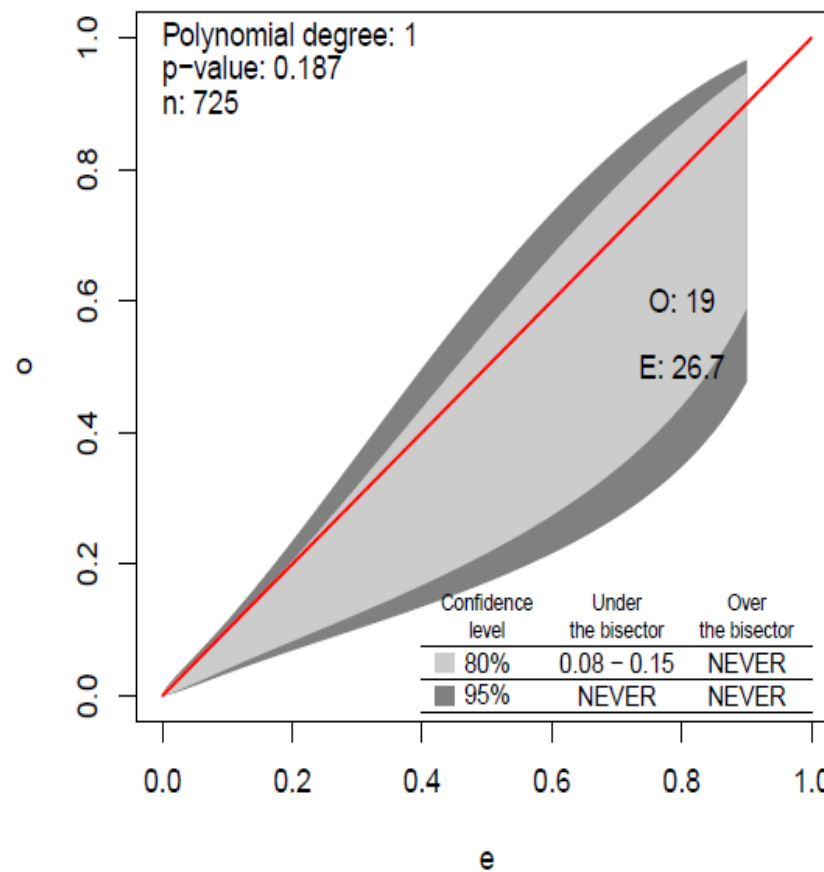
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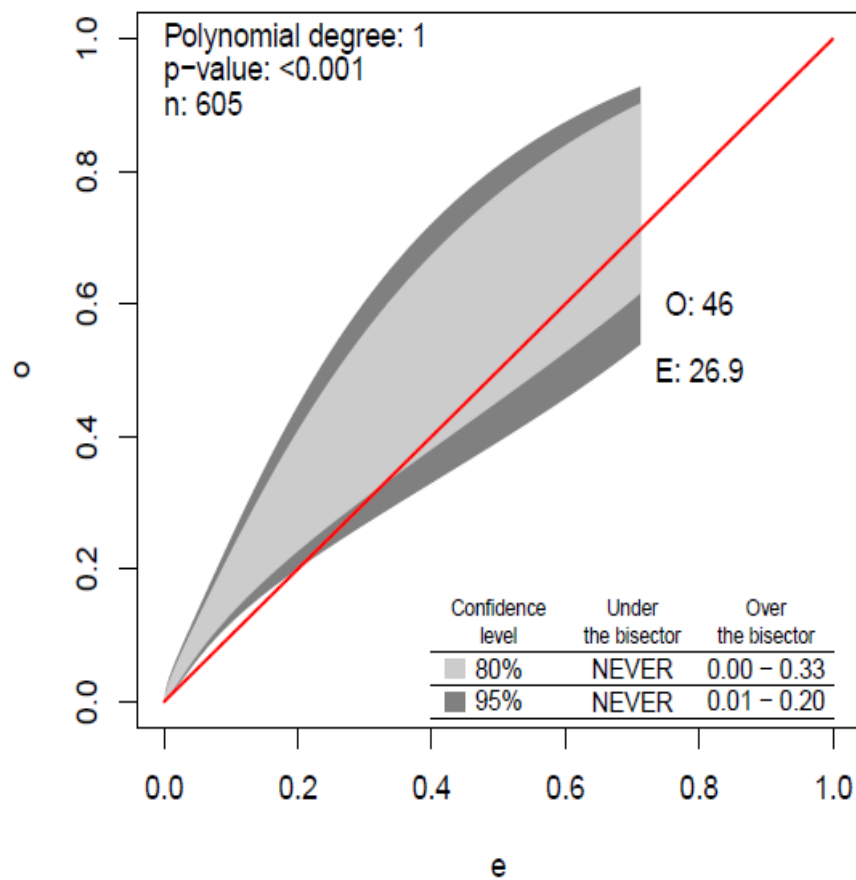


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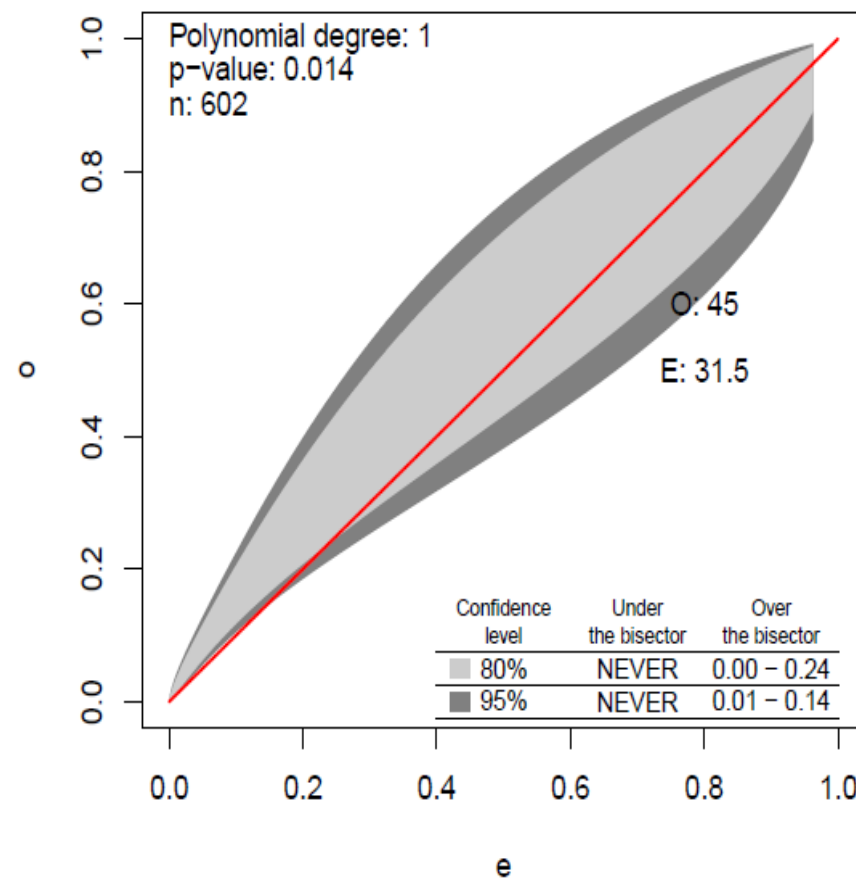
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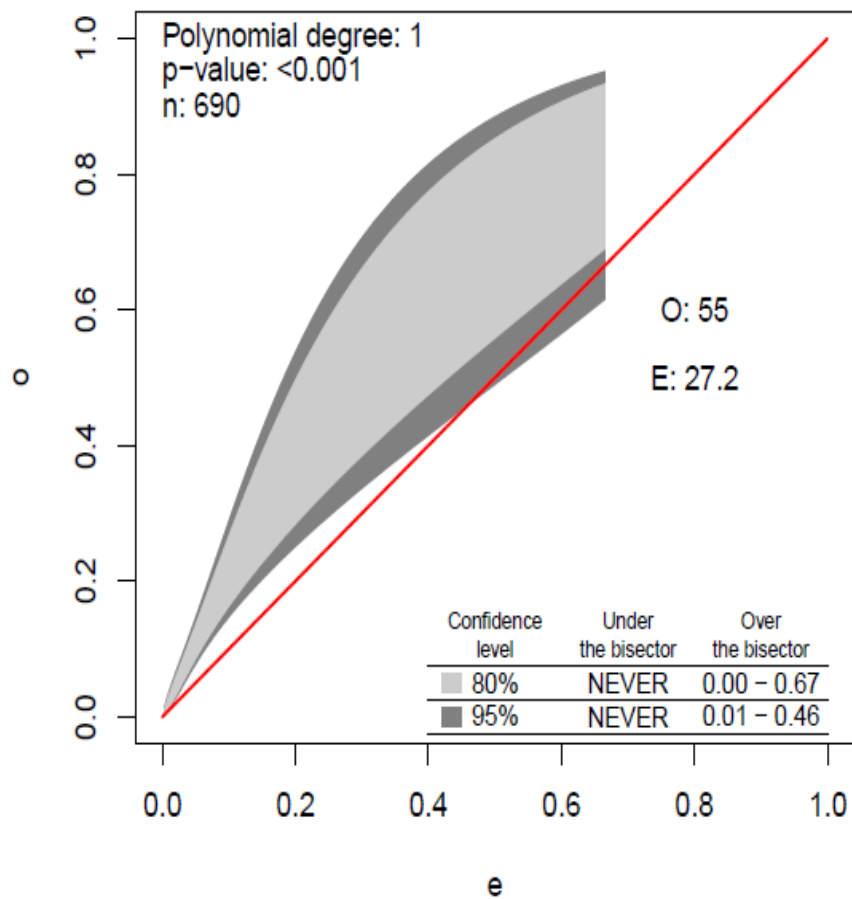


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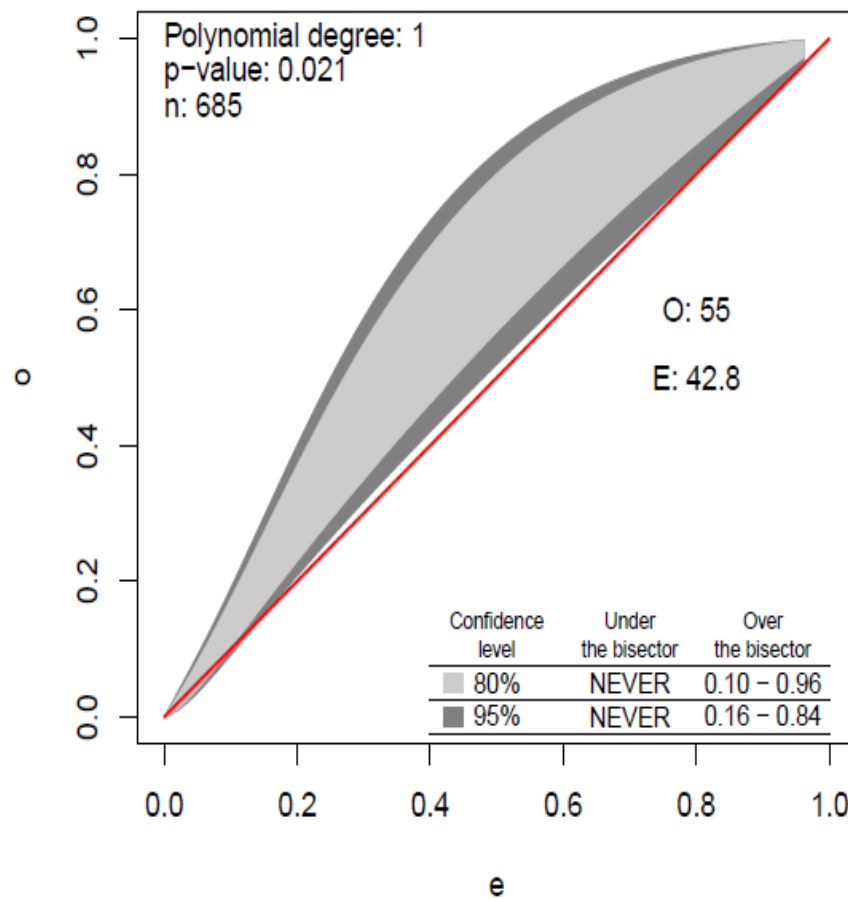
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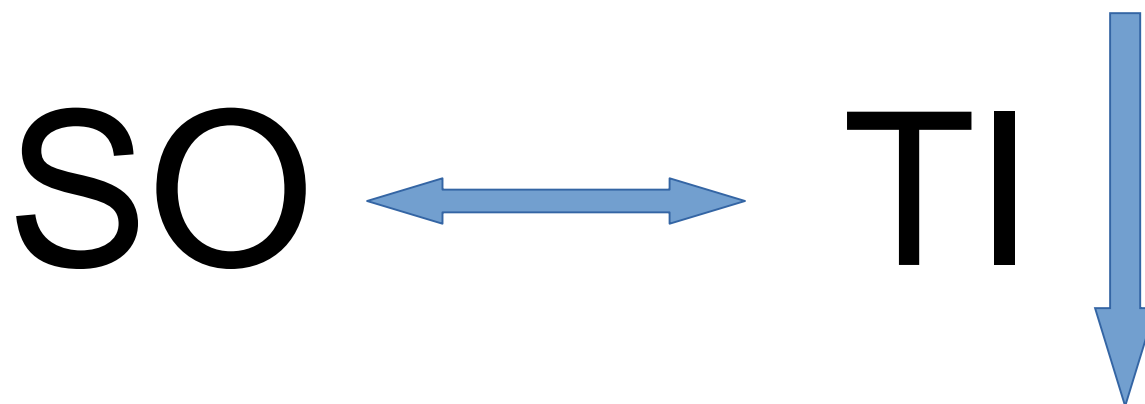
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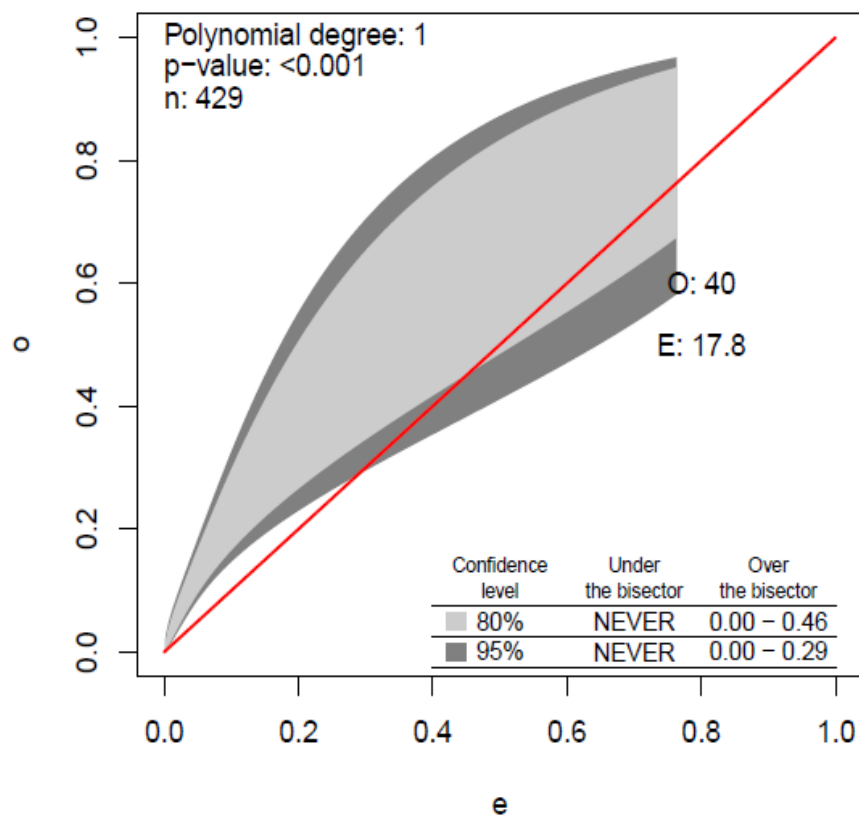


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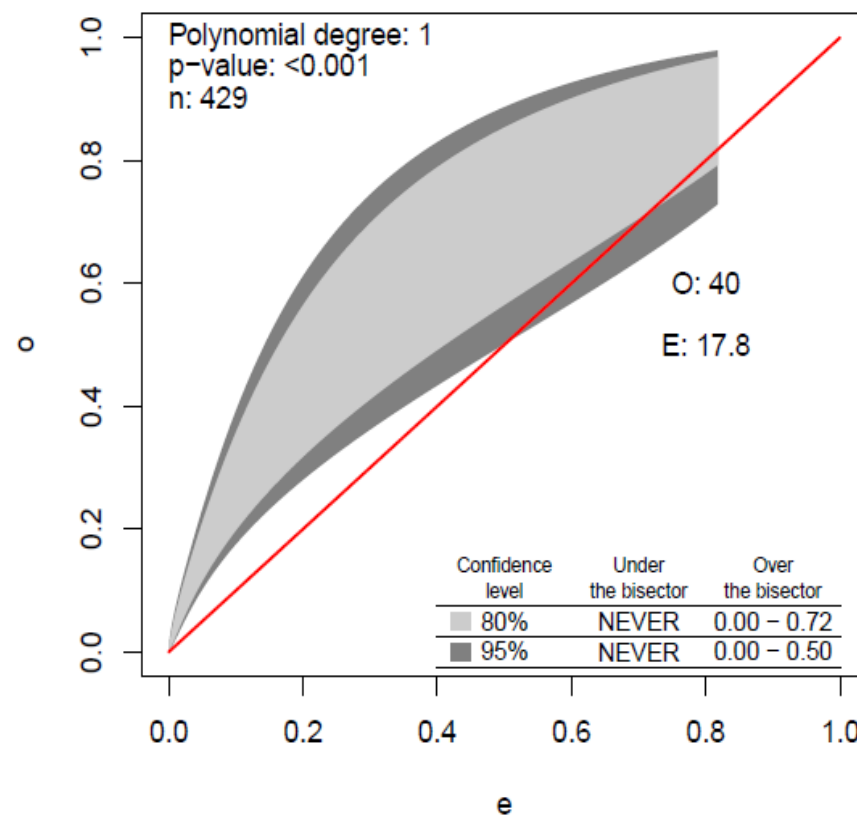
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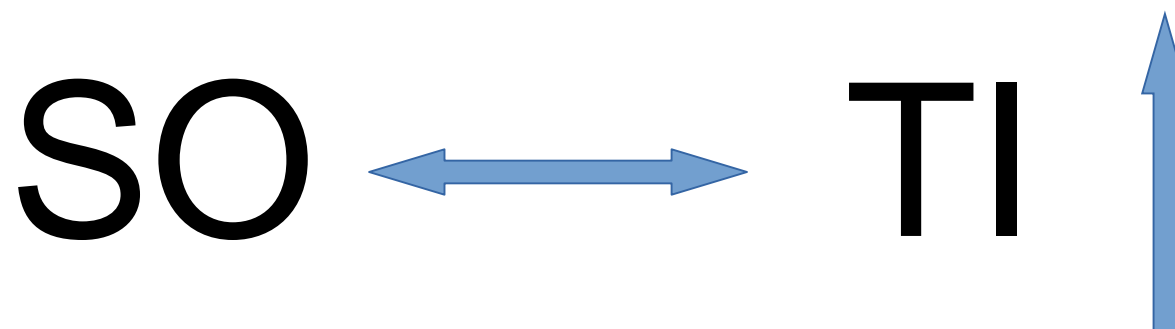
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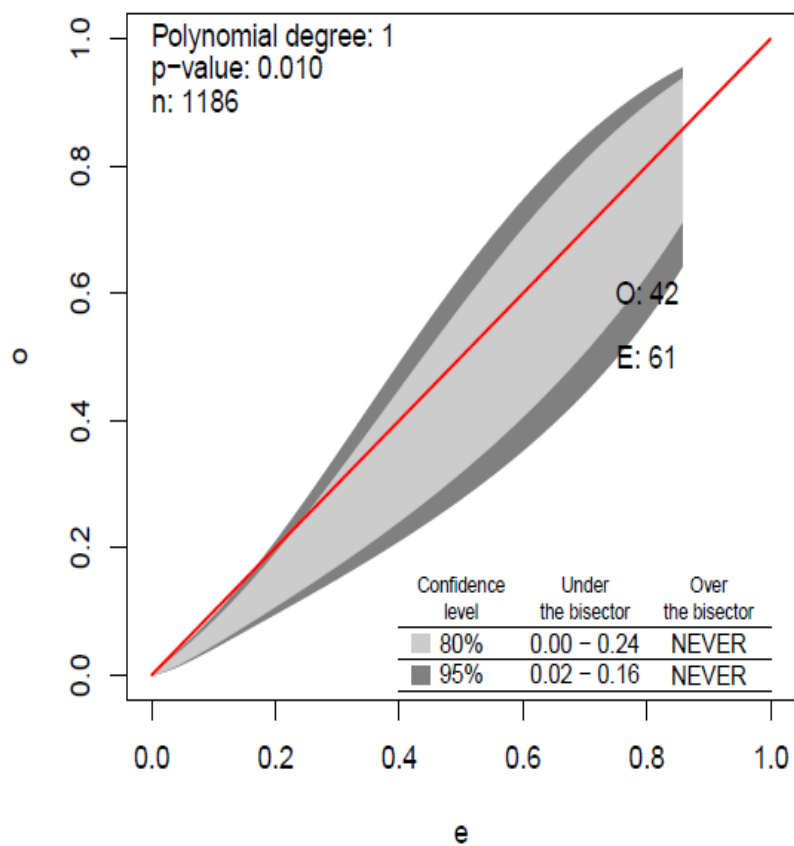


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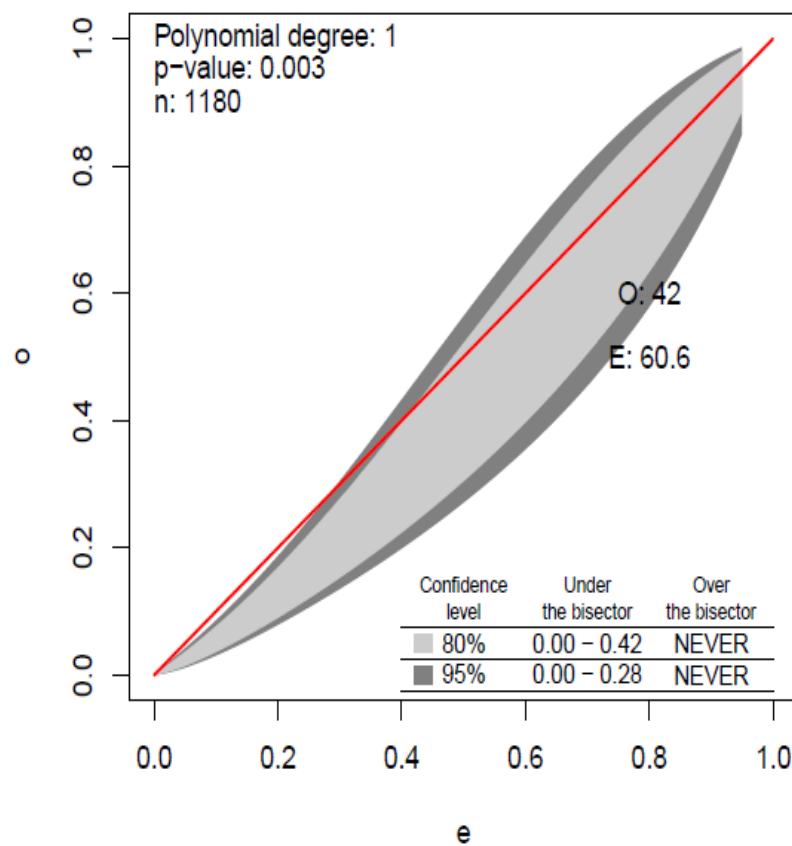
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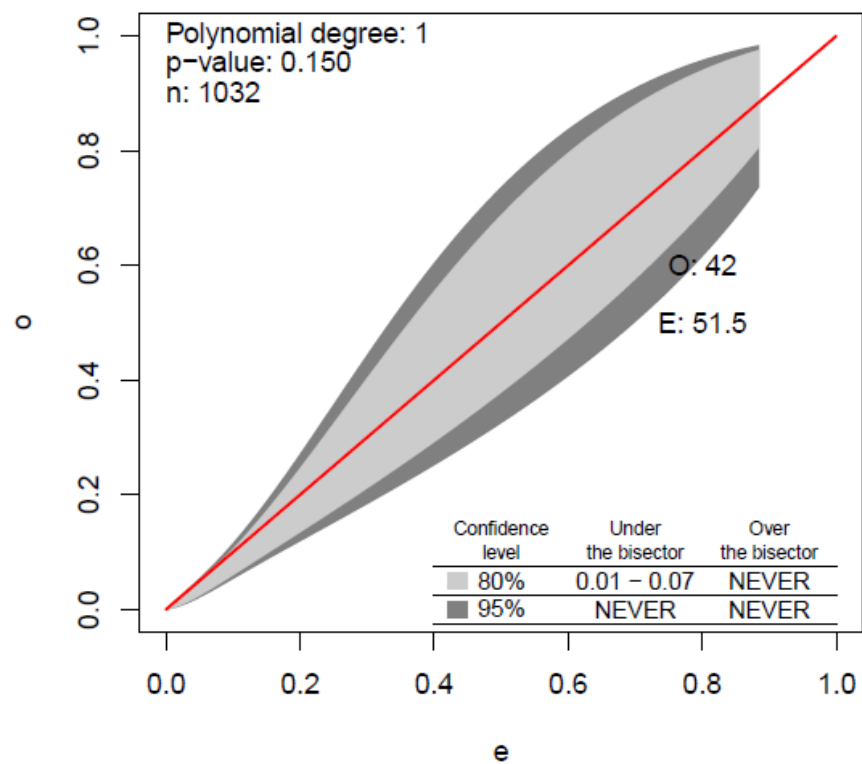


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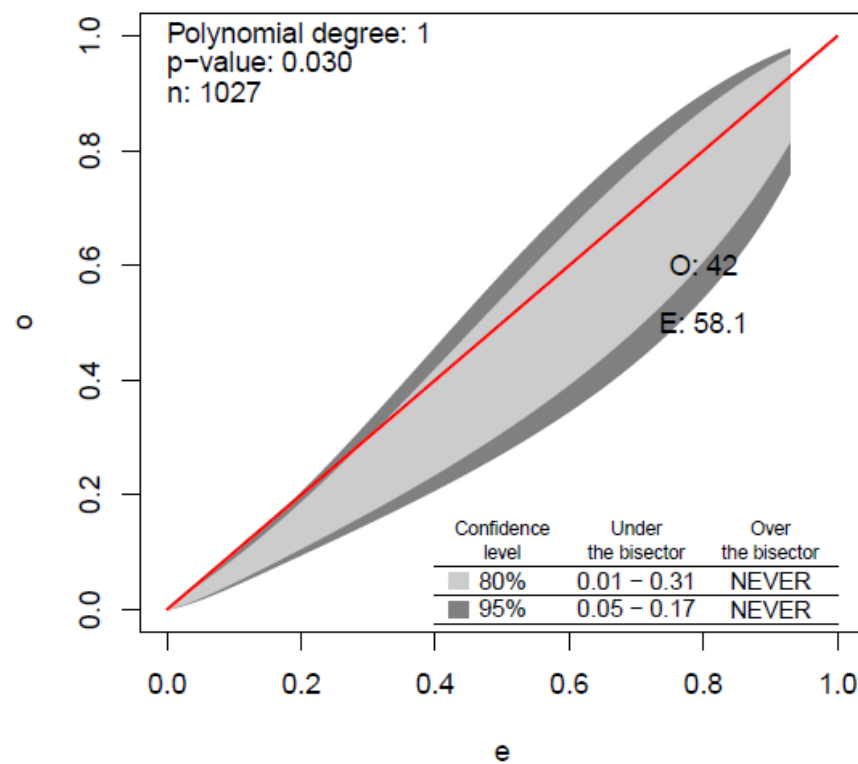
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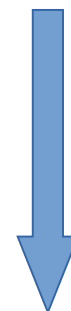
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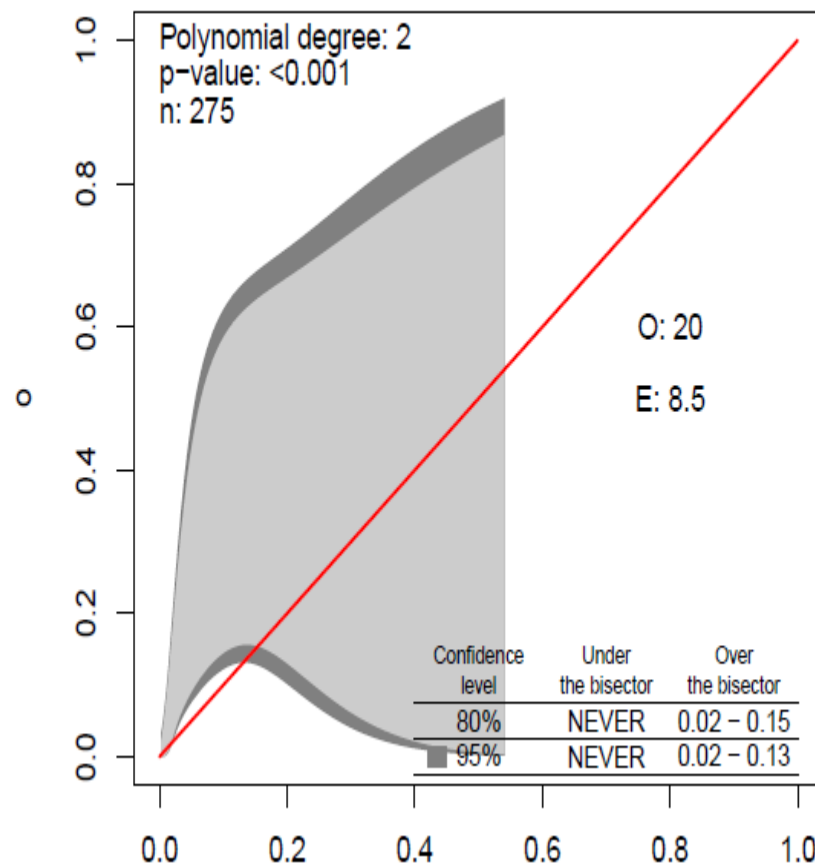
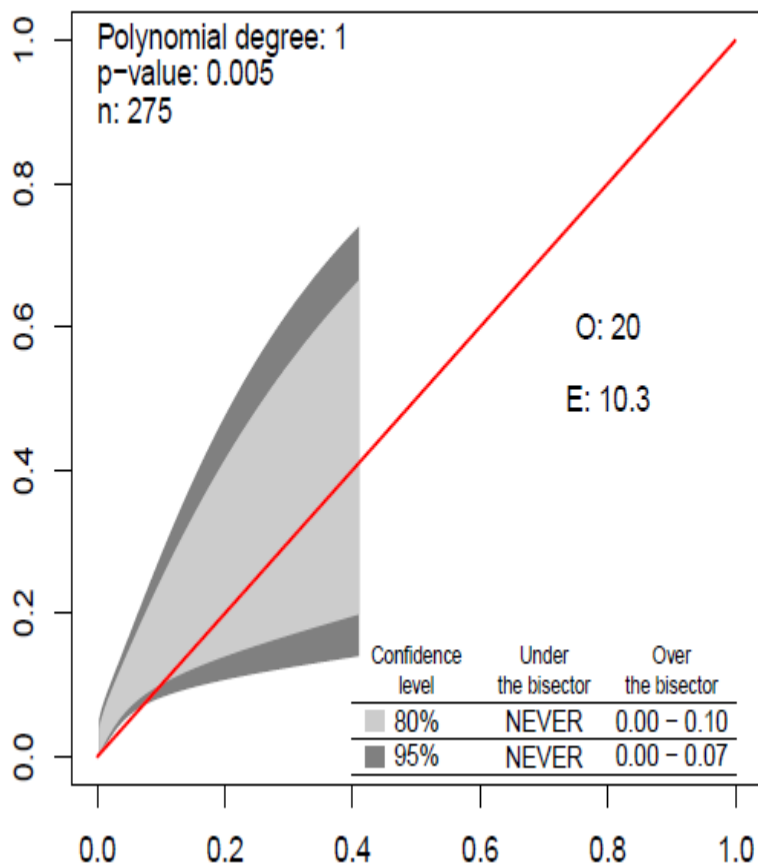
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Updating EuroSCORE by including emotional, behavioural, social and functional factors to the risk assessment of patients undergoing cardiac surgery: a study protocol

Pernille Fevejle Cromhout,¹ Selina Kikkenborg Berg,^{2,3} Philip Moons,^{4,5}
Sune Damgaard,⁶ Samer Nashef,⁷ Lau Caspar Thygesen³

BMJ Open 2019;9:e026745



Prognostic multivariable modelling study

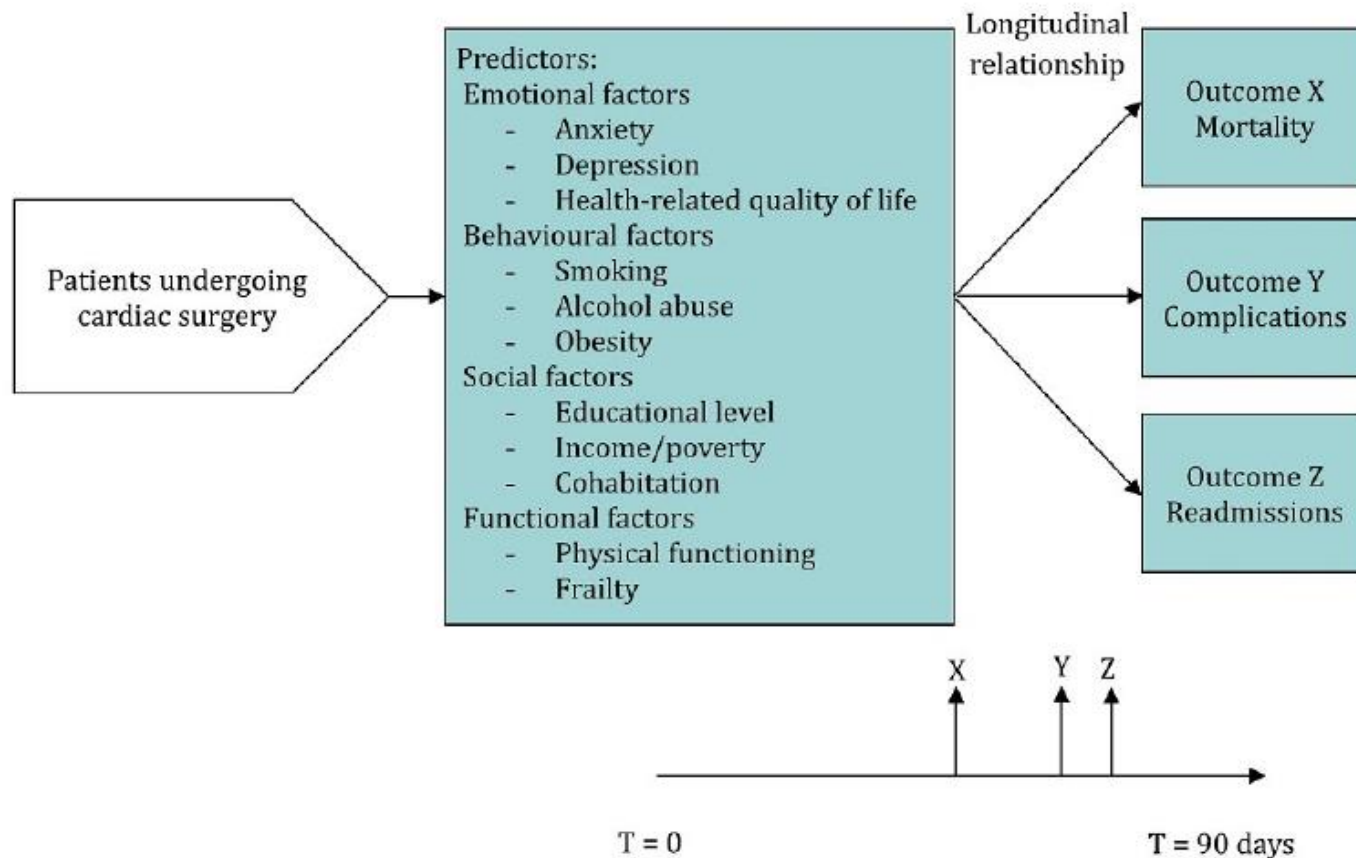


Figure 1 Schematic presentation of prognostic prediction modelling study.



“For the majority of my patients, it isn’t enough to understand the biologic basis of disease. My prescriptions mean nothing if we cannot address the social determinants underlying their health issues”

Pooja Yerramilli *STAT* 16 sept 2019



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Grazie dell'attenzione!!!

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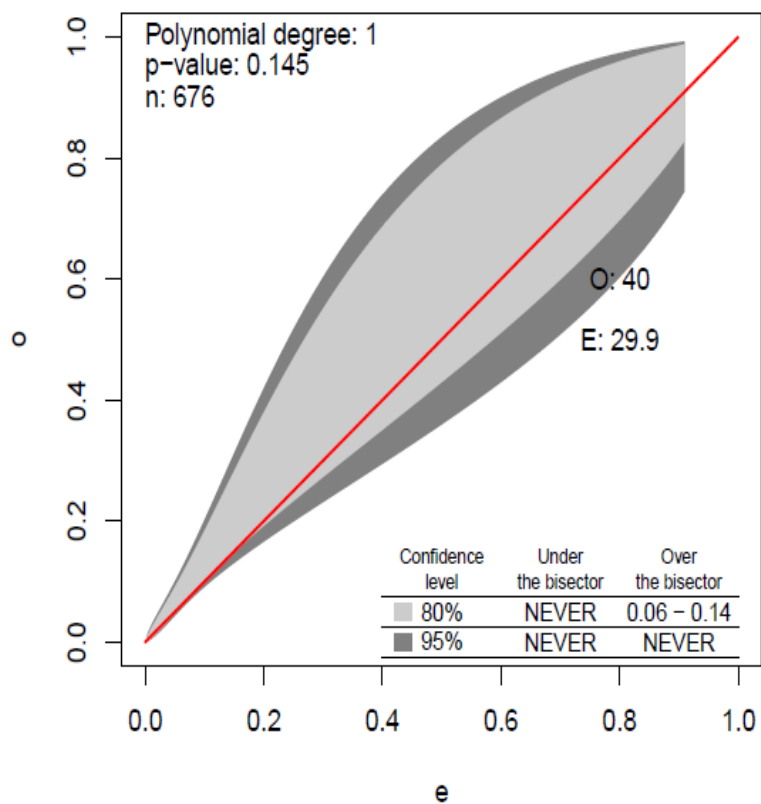


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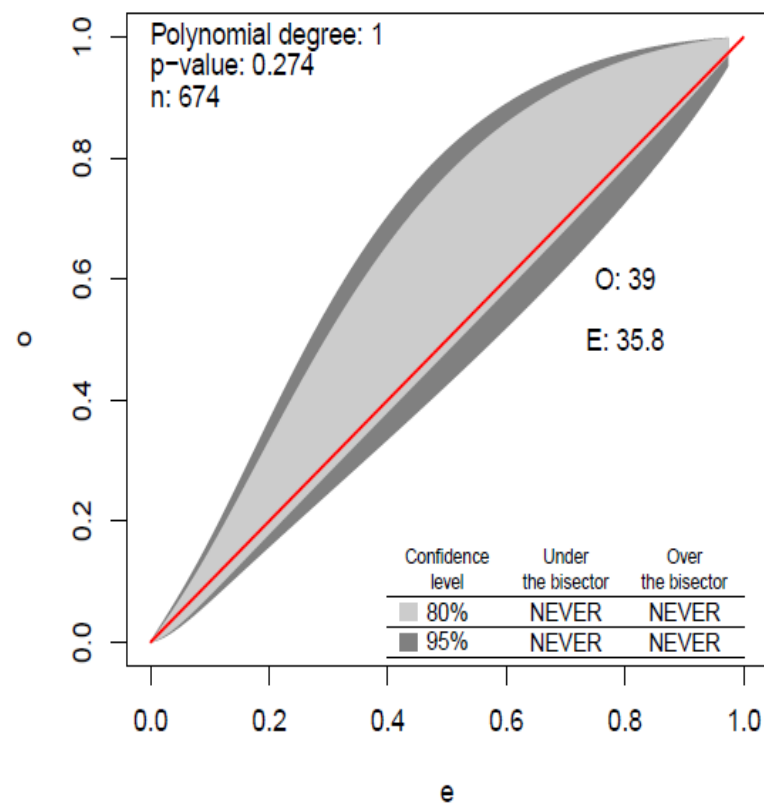
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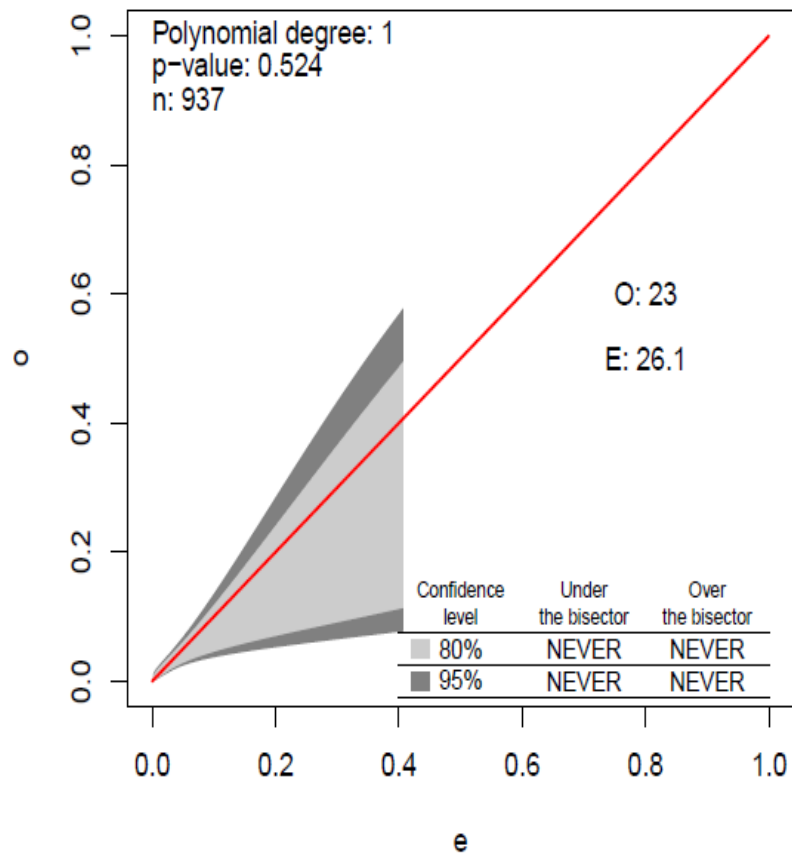


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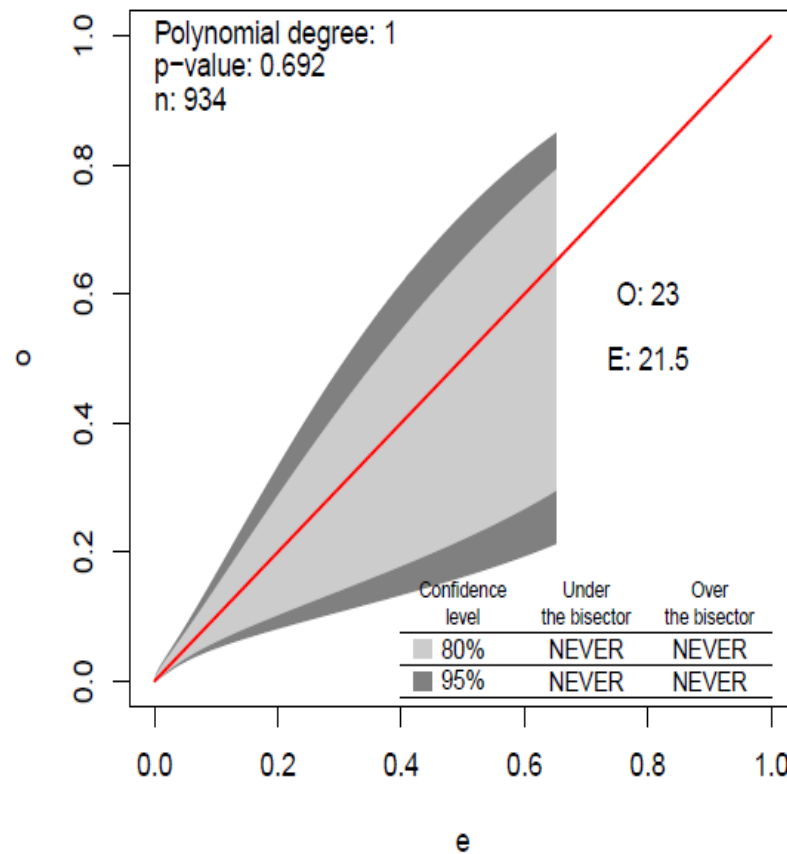
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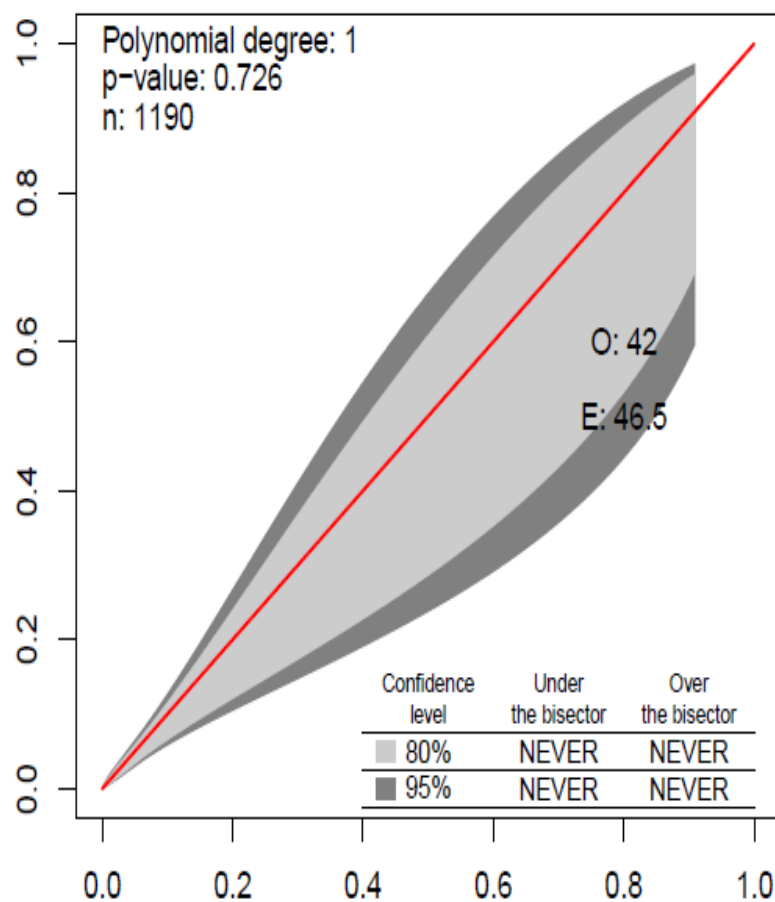


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