

Table S1. Quality assessment of included studies.

Items	Study limitation considered	Long enough follow-up period	Univariate/multivariate analysis used	Predefinition of OS/PFS	Clear cut-off value of PIV	Clear description of including criteria	Clear description of tumor stage/ clinical setting	Patients' consent for research	Clear description of purpose objectives
Baba,2022(training)	1	0	0	1	1	1	1	1	1
Baba,2022(validation)	1	0	1	1	1	1	1	1	1
Chen,2022	1	1	1	1	1	1	1	1	1
Corti,2021	1	0	1	1	1	1	1	1	1
Demir,2022	1	0	0	1	1	1	1	1	1
Efile,2023	1	1	1	1	1	1	1	1	1
Fuca,2020	1	0	1	1	1	1	1	1	1
Fuca,2021	1	0	1	1	1	1	1	1	1
Gambichler,2022	1	0	1	1	1	1	1	1	1
Guyen,2021	1	0	1	1	1	1	1	1	1
Guyen,2022	1	0	1	1	1	1	1	1	1
Karadag,2022	1	0	1	1	1	1	1	1	1
Kucuk,2023	1	0	1	1	1	1	1	1	1
Liang,2023	1	1	1	1	1	1	1	1	1
Ligorio,2021	1	0	1	1	1	1	1	1	1
Lin,2022	1	1	1	1	1	1	1	1	1
Mesti,2023	1	1	1	1	1	1	1	1	1
Perez-Martelo,2022	1	1	1	1	1	1	1	1	1
Provenzano,2023	1	1	1	1	1	1	1	1	1
Qi,2023	1	1	1	1	1	1	1	1	1
Sahin,2021	1	0	1	1	1	1	1	1	1
Sato (1),2022	1	0	1	1	1	1	1	1	1

Sato (2),2022	1	0	1	1	1	1	1	1	1
Susok,2022	1	1	1	1	1	1	1	1	1
Topkan,2022	1	0	1	1	1	1	1	1	1
Topkan,2022	1	0	1	1	1	1	1	1	1
Wang,2022	1	1	1	1	1	1	1	1	1
Yazgan,2022	1	1	1	1	1	1	1	1	1
Yeh,2023	1	0	1	1	1	1	1	1	1
Yekeduz,2022	1	0	1	1	1	1	1	1	1
Zeng,2022(training)	1	0	1	1	1	1	1	1	1
Zeng,2022(validation)	1	0	1	1	1	1	1	1	1

Table S2. Meta-regression analyses for the association of confounding factors and the hazard ratio for overall survival and progression-free survival.

Covariates	Overall survival			Progression-free survival		
	β value	p value	95%CI	β value	p value	95%CI
Country	0.284	0.310	-0.290-0.857	-0.048	0.872	-0.671-0.576
Study center	0.034	0.872	-0.407-0.475	-0.032	0.899	-0.562-0.498
Sample size	-0.097	0.635	-0.520-0.326	0.052	0.810	-0.400-0.503
Cancer type	-0.031	0.534	-0.134-0.072	-0.034	0.667	-0.201-0.133
Selection method	-0.126	0.347	-0.402-0.150	-0.018	0.947	-0.573-0.528
Cut-off value	0.209	0.248	-0.160-0.577	0.121	0.633	-0.409-0.650
Treatment strategy	0.098	0.435	-0.162-0.359	0.125	0.413	-0.193-0.442
Tumor stage	-0.169	0.239	-0.461-0.124	-0.207	0.368	-0.683-0.270
Analysis method	0.086	0.666	-0.328-0.499	0.314	0.266	-0.237-0.896
Follow-up	-0.020	0.862	-0.256-0.217	-0.043	0.758	-0.339-0.252



Figure S1. Forest plot of subgroup analyses assessing the relationship between the PIV score and OS. A: Country (Asian vs. Non-Asian); B: Study center (Single center vs. Multiple center); C: Sample size (>150 vs. <150); D: Cancer type (Gastrointestinal vs. Breast vs. Lung vs. Melanoma vs. Others); E: Selection method (ROC vs. Median vs. MSR); F: Cut-off value (<350 vs. >350); G: Treatment strategy (Surgery vs. Chemo/radiotherapy vs. Immunotherapy contained vs. Others); H: Tumor stage (Non-metastatic vs. Mixed vs. Metastatic); I: Analysis method (Univariate vs. Multivariate); J: Follow-up time (<30 months vs. >30 months vs. NA).

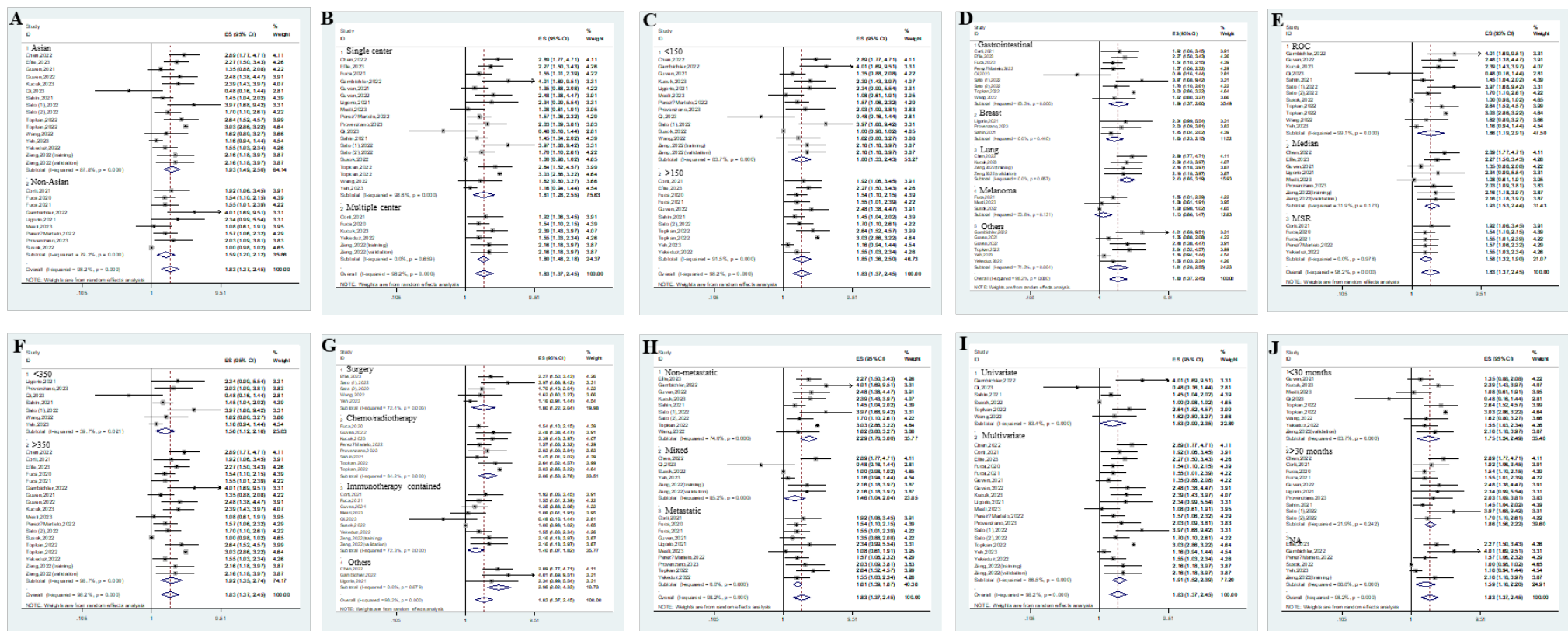


Figure S2. Forest plot of subgroup analyses assessing the relationship between the PIV score and PFS. A: Country (Asian vs. Non-Asian); B: Study center (Single center vs. Multiple center); C: Sample size (>150 vs. <150); D: Cancer type (Gastrointestinal vs. Breast vs. Lung vs. Melanoma vs. Others); E: Selection method (ROC vs. Median vs. MSR); F: Cut-off value (<350 vs. >350); G: Treatment strategy (Surgery vs. Chemo/radiotherapy vs. Immunotherapy contained vs. Others); H: Tumor stage (Non-metastatic vs. Mixed vs. Metastatic); I: Analysis method (Univariate vs. Multivariate); J: Follow-up time (<30 months vs. >30 months vs. NA).

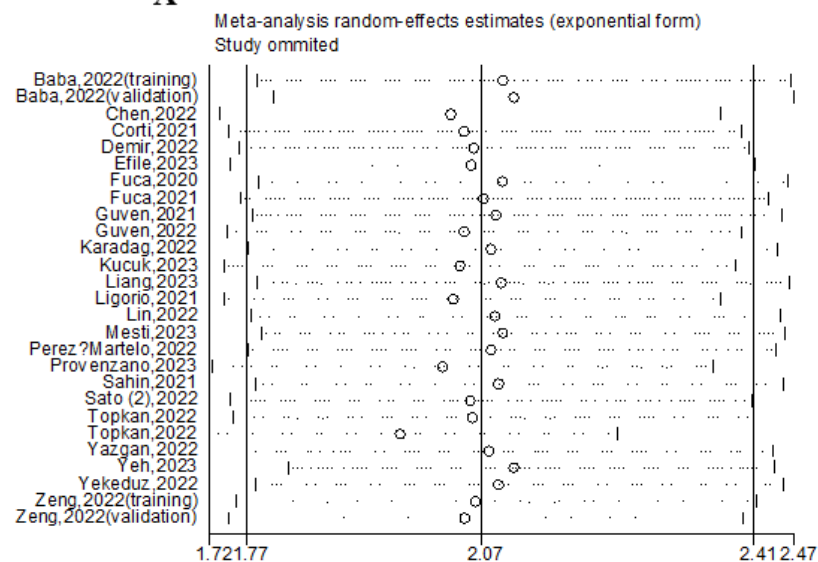
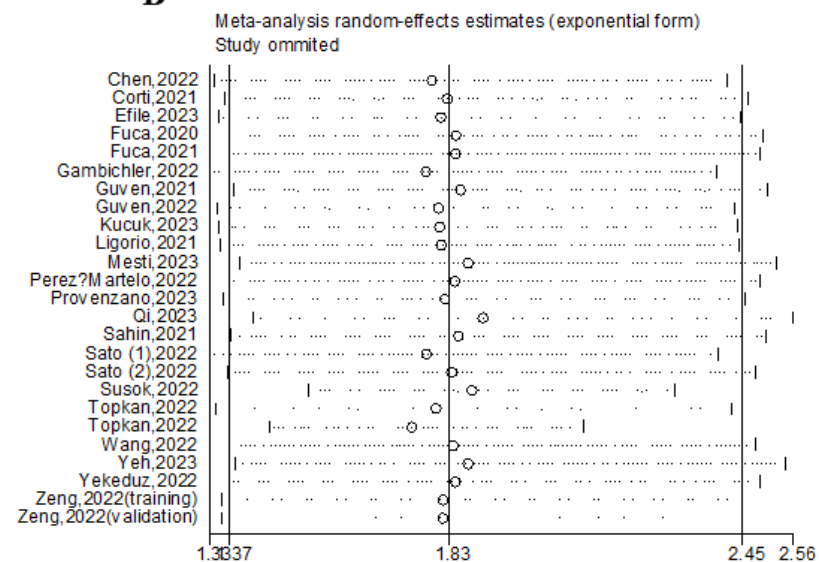
A**B**

Figure S3. Sensitivity analyses assessing the relationship between the PIV score and survival outcomes including OS (A) and PFS (B).

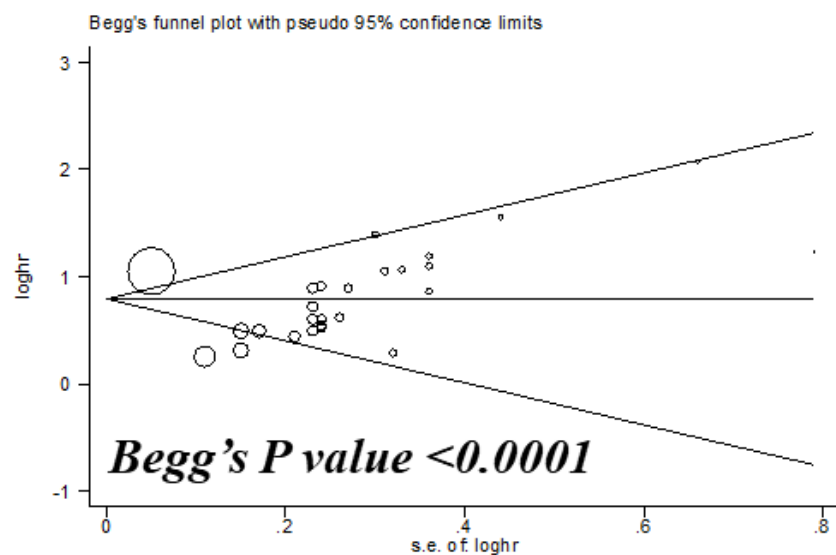
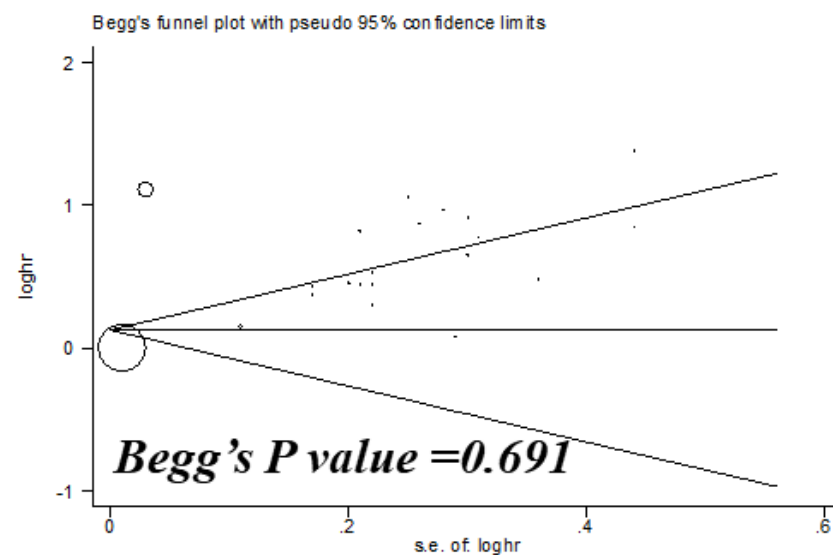
A**B**

Figure S4. Begg's funnel plot assessing publication bias between PIV and survival outcomes, including OS (A) and PFS (B). The Begg's P values were <0.0001 and 0.691, respectively.