Supplementary Materials

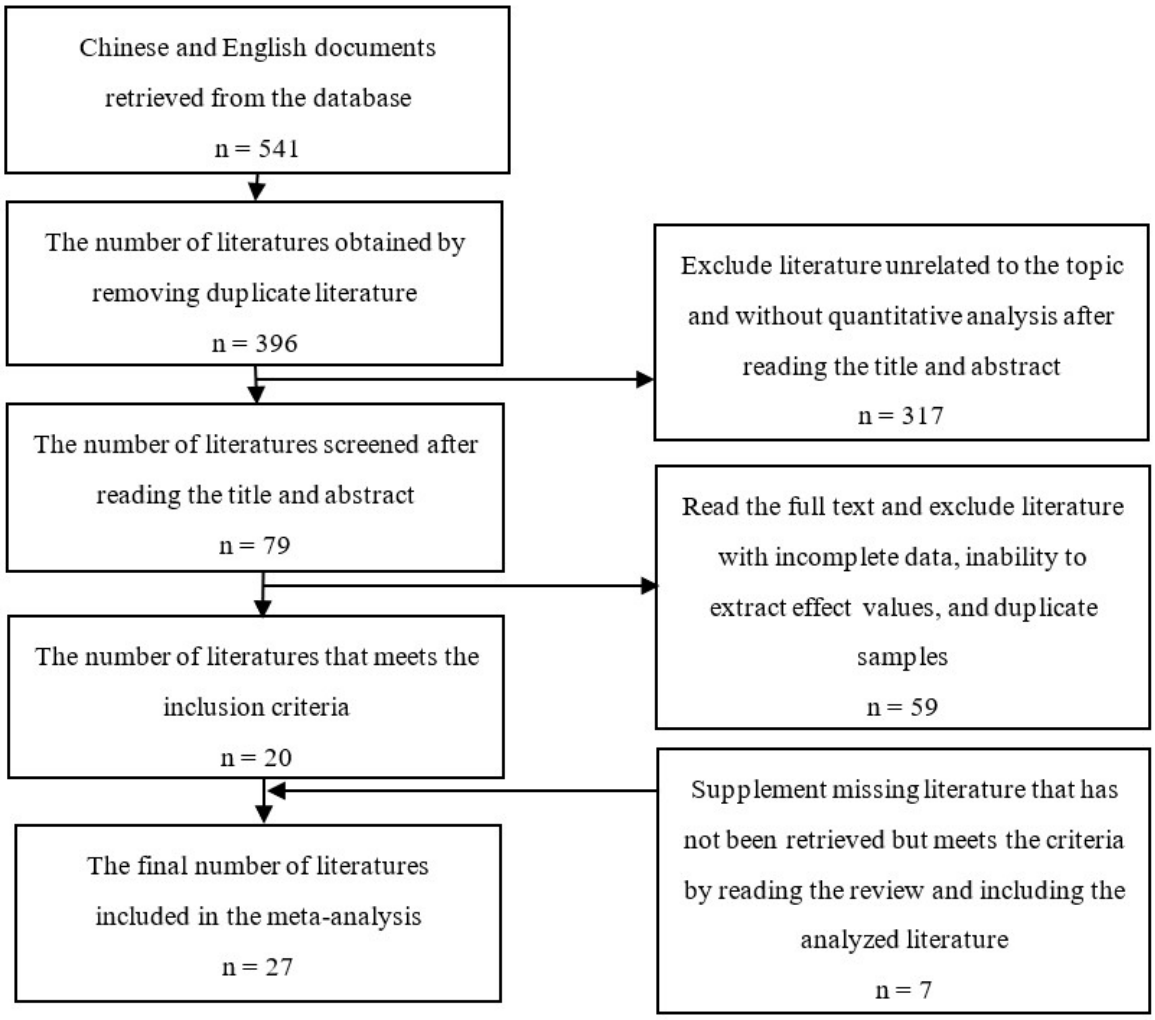

Figure S1. The process of selecting literature.

Table S1. Research samples and encoding.

Reference number	the first author name	literature type	publication year	publication source	research area	statistical method	sample size
1	Yang L.	Journal Article	2023	Sustainability	Inner Mongolia	Ordinary Least Square	270
2	Chen C.	Journal Article	2023	Chinese Journal of Grassland	Inner Mongolia	Multiple Linear Regression	186
3	Liu L. J.	Journal Article	2023	Journal of Arid Land Resources and Environment	Qinghai	Multiple Linear Regression	310
4	Zhi R.	Journal Article	2022	Acta Agrestia Sinica	Inner Mongolia	Ordinary Least Square	219
5	Ma X. P.	Journal Article	2017	Agricultural Outlook	Inner Mongolia	Multiple Linear Regression	112
6	Ma Y. F.	Journal Article	2024	Chinese Journal of Grassland	Qinghai	Ordinary Least Square	304
7	Zhou S. Q.	Journal Article	2020	Journal of Northwest A&F University(Social Science Edition)	Ningxia、Inner Mongolia	Ordinary Least Square	355
8	Luo Y. Y.	Journal Article	2020	Rural Economy	Ningxia	Logit	343
9	He H. Y.	Master's thesis	2023	Northwest A&F University	Qinghai	Ordinary Least Square	300
10	Bai G. P.	Master's thesis	2023	Northwest A&F University	Qinghai	Ordinary Least Square	320
11	Ma L. L.	Master's thesis	2020	Lanzhou University	Gansu、Qinghai	Ordinary Least Square	387
12	Ji C. T.	Journal Article	2020	Chinese Journal of Grassland	Gansu	Multiple Linear Regression	84
13	Lei W. Y.	Master's thesis	2016	Inner Mongolia Agricultural University	Inner Mongolia	Logistic	123
14	Liu M. L.	Journal Article	2023	Journal of Desert Research	Gansu	Multiple Linear Regression	102
15	Ma X. L.	Master's thesis	2022	Gansu Agricultural University	Qinghai	Ordinary Least Square	414
16	Du S. Q.	Journal Article	2019	Chinese Journal of Grassland	Gansu	Multiple Linear Regression	140
17	Qi X. H.	Journal Article	2018	Acta Agrestia Sinica	Inner Mongolia	Pearson Correlation Analysis	111
18	Zhao Y.	Master's thesis	2020	Inner Mongolia University	Inner Mongolia	Multiple Linear Regression	336
19	Cui X. J.	Journal Article	2022	Pratacultural Science	Gansu	Logistic	309
20	Wang J. R.	Master's thesis	2018	Xinjiang Agricultural University	Xinjiang	Logistic	200
21	Wu J. S. G. L.	Master's thesis	2017	Inner Mongolia Agricultural University	Inner Mongolia	Multiple Linear Regression	130
22	Ou X. S.	Master's thesis	2017	Inner Mongolia University	Inner Mongolia	Multiple Linear Regression	179

23	Wang D. X.	Master's thesis	2016	Inner Mongolia Agricultural University	Inner Mongolia	Multiple Linear Regression	108
24	Da B. X. L. T.	Master's thesis	2014	Inner Mongolia Agricultural University	Inner Mongolia	logit	120
25	Ning Y. C.	Journal Article	2011	Inner Mongolia Science Technology & Economy	Gansu	Multiple Linear Regression	100
26	Zhang R. X.	Journal Article	2016	Animal Husbandry and Feed Science	Inner Mongolia	Multiple Linear Regression	83
27	Fang F.	Master's thesis	2014	Xinjiang Agricultural University	Xinjiang	Logistic	193

Table S2. Variable sensitivity analysis.

Variable	n	N	E	SE_E	Z	*P*	Confidence interval		Q_t	P_Q	I^2 (%)	τ^2
							lower	upper				
Loan situation	9	2518	0.0354	0.0200	1.7656	0.0775	-0.0039	0.0747	7.2691	0.5079	0.01	0.0000
Loan situation	9	2534	0.0313	0.0200	1.5649	0.1176	-0.0079	0.0705	7.5066	0.4831	0.14	0.0000
Loan situation	9	2528	0.0300	0.0200	1.4968	0.1344	-0.0093	0.0692	7.4220	0.4919	0.17	0.0000
Loan situation	9	2538	0.0358	0.0200	1.7933	0.0729	-0.0033	0.0749	7.1791	0.5174	0.06	0.0000
Loan situation	9	2424	0.0371	0.0204	1.8153	0.0695	-0.0030	0.0772	7.0950	0.5264	0.16	0.0000
Loan situation	9	2730	0.0224	0.0192	1.1632	0.2447	-0.0153	0.0601	0.8090	0.9992	0.00	0.0000
Loan situation	9	2659	0.0328	0.0195	1.6822	0.0925	-0.0054	0.0710	7.4936	0.4844	0.02	0.0000
Loan situation	9	2483	0.0328	0.0202	1.6243	0.1043	-0.0068	0.0724	7.5077	0.4830	0.07	0.0000
Loan situation	9	2645	0.0327	0.0196	1.6716	0.0946	-0.0056	0.0711	7.5015	0.4836	0.19	0.0000
Loan situation	9	2483	0.0309	0.0202	1.5301	0.1260	-0.0087	0.0704	7.4943	0.4844	0.01	0.0000
Per capita grassland area	8	1033	0.1968	0.0522	3.7715	0.0002	0.0945	0.2991	18.7611	0.0090	59.86	0.0125
Per capita grassland area	8	1020	0.2148	0.0521	4.1261	<.0001	0.1128	0.3169	18.4934	0.0099	58.76	0.0121
Per capita grassland area	8	1013	0.2100	0.0532	3.9444	<.0001	0.1056	0.3143	19.0805	0.0079	60.12	0.0129
Per capita grassland area	8	905	0.2090	0.0558	3.7417	0.0002	0.0995	0.3184	19.2087	0.0076	58.87	0.0140
Per capita grassland area	8	984	0.1866	0.0519	3.5983	0.0003	0.0850	0.2883	16.8397	0.0185	56.21	0.0114
Per capita grassland area	8	774	0.2379	0.0400	5.9501	<.0001	0.1595	0.3163	8.1582	0.3189	14.71	0.0019
Per capita grassland area	8	971	0.2045	0.0549	3.7250	0.0002	0.0969	0.3121	19.1779	0.0076	60.28	0.0137
Per capita grassland area	8	980	0.1802	0.0499	3.6113	0.0003	0.0824	0.2781	15.2895	0.0325	52.48	0.0099
Per capita grassland area	8	992	0.1768	0.0483	3.6582	0.0003	0.0821	0.2716	14.4546	0.0437	50.18	0.0089

Note: n denotes numerical effect size; N is the number of samples; E is the comprehensive effect size; SEE is the standard error of E; Z is the statistical measure for the effect value test; P denotes the significance level; Qt is the heterogeneity test Q-statistic; PQ is the Q-statistic; I2 represents the proportion of heterogeneity in the overall change; τ2 is the estimated value of overall heterogeneity.