# 2020 年长安大学 SSCI 论文产出概况

长安大学图书馆学科服务工作组 2021 年 6 月

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# 第一章 数据来源与简介

本报告的数据来源于 SSCI 数据库,检索时间范围: 2020 年 1 月——2020 年 12 月;报告检索及筛选条件:第一作者单位署名为长安大学的论文;报告中论文的检索及被引频次采集日期: 2021 年 3 月 15 日。

社会科学引文索引(Social Sciences Citation Index,SSCI),是 Web of Science 的一个子库,全球最权威的社会科学引文数据库,收录社会科学领域中最具权威和影响力的 3300 多种学术期刊,涉及社会科学的 57 个学科,收录的内容可回溯至 1900 年。包括经济学、人类学、地理学、信息科学、社会科学、心理学等 57 个学科领域。

# 第二章 SSCI 论文统计及学院分布概况

# 2.1 近五年 SSCI 发文量统计

不区分第一作者和第二作者进行统计,长安大学 2020 年被 SSCI 数据库收录的论文有 223 篇,其中第一作者机构为长安大学的有 157 篇,与 2016-2019 这四年相比,数量有大幅增长,占近五年发文量的 39%。

发表年份	发文量	占近 5 年发文总量的百分比
2016	13	3.2%
2017	36	9.0%
2018	71	17.7%
2019	125	31.1%
2020	157	39 %
合计	402	100%

表 1 2016-2020 年按第一作者被 SSCI 收录论文的数量

# 2.2 各学院 SSCI 论文发文情况及被引次数

2020年,以长安大学为第一作者单位发表的 SSCI 论文分别分布在 15 个学院。各学院发表的论文情况详见表 2。从表 2 可知,2020年发表 SSCI 论文最多的学院为经济与管理学院和汽车学院,均有 36 篇,其次是运输工程学院,有 29 篇。

序号	学院	发文数量	被引总次数
1	经济与管理学院	36	57
2	汽车学院	36	42
3	运输工程学院	29	11
4	公路学院	18	7
5	建筑学院	8	15
6	水利与环境学院	8	5
7	建筑工程学院	4	0
8	信息工程学院	3	6
9	电子与控制工程学院	3	2
10	人文学院	3	1
11	土地工程学院	3	1
12	地质工程与测绘学院	2	5

表 2 按学院发表 SSCI 论文统计表

13	地球科学与资源学院	2	2
14	心理健康教育与咨询中心	1	2
15	外国语学院	1	0

注: 上表中的数据统计均为第一作者为"长安大学"的 SSCI 论文

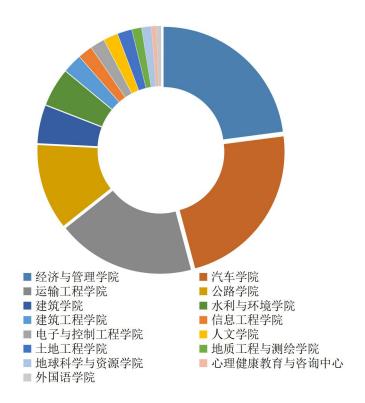


图 1 2020 年长安大学各单位 SSCI 论文发表情况图

# 2.3 各学院 SSCI 论文第一作者发文统计及被引次数

2020 年我校发表的 157 篇 SSCI 论文中,发文量在 3 篇及以上的作者有 6人,其中经济与管理学院 5人、汽车学院 1人,详见下列表格。

表 3 经济与管理学院 SSCI 发文量统计表

序号	姓名	所属学院	发文数量	被引次数
1	张静晓	经济与管理学院	7	17
2	马飞	经济与管理学院	5	11
3	王超	经济与管理学院	4	12
4	史金召	经济与管理学院	3	4
5	杜强	经济与管理学院	3	2
6	彭志敏	经济与管理学院	2	4
7	张圣忠	经济与管理学院	2	2
8	白礼彪	经济与管理学院	2	0
9	汪勇杰	经济与管理学院	1	3
10	徐海成	经济与管理学院	1	1
11	刘丹	经济与管理学院	1	1
12	Shoaib, Muhammad	经济与管理学院	1	0

13	孙启鹏	经济与管理学院	1	0
14	李倩	经济与管理学院	1	0
15	赵米芸	经济与管理学院	1	0
16	周茵	经济与管理学院	1	0

表 4 汽车学院 SSCI 发文量统计表

序号	姓名	所属学院	发文数量	被引次数
1	王畅	汽车学院	4	6
2	付锐	汽车学院	2	3
3	牛世峰	汽车学院	2	1
4	沈小燕	汽车学院	2	1
5	张智	汽车学院	2	1
6	赵轩	汽车学院	1	16
7	阎莹	汽车学院	1	6
8	陈运星	汽车学院	1	3
9	郭应时	汽车学院	1	1
10	韩飞	汽车学院	1	1
11	李震	汽车学院	1	1
12	刘通	汽车学院	1	1
13	Liu Yili	汽车学院	1	1
14	蔡晶	汽车学院	1	0
15	邓明阳	汽车学院	1	0
16	韩万里	汽车学院	1	0
17	李彬	汽车学院	1	0
18	李文	汽车学院	1	0
19	刘静	汽车学院	1	0
20	孙秦豫	汽车学院	1	0
21	王辉	汽车学院	1	0
22	王姝	汽车学院	1	0
23	吴付威	汽车学院	1	0
24	谢培	汽车学院	1	0
25	Yan Shengyu	汽车学院	1	0
26	Yan Xingpei	汽车学院	1	0
27	杨伟	汽车学院	1	0
28	张海伦	汽车学院	1	0
29	张洪加	汽车学院	1	0

表 5 运输工程学院 SSCI 发文量统计表

序号	姓名	所属学院	发文数量	被引次数
1	程小云	运输工程学院	2	3
2	龙雪琴	运输工程学院	2	0
3	马壮林	运输工程学院	2	0

4       彭志鹏       运输工程学院       1       2         5       轉雪艳       运输工程学院       1       1         6       陈刚       运输工程学院       1       1         7       陈红       运输工程学院       1       1         8       高洁       运输工程学院       1       1         9       李笛       运输工程学院       1       1         10       刘丽娜       运输工程学院       1       1         11       周备       运输工程学院       1       0         12       蔡晶       运输工程学院       1       0         13       陈恒瑞       运输工程学院       1       0         14       丁玲       运输工程学院       1       0         15       高亚楠       运输工程学院       1       0         16       桂嘉伟       运输工程学院       1       0         17       黄岩       运输工程学院       1       0         18       李琼       运输工程学院       1       0         19       卢昕玮       运输工程学院       1       0         20       邵海鹏       运输工程学院       1       0         21       肖梅       运输工程学院       1       0         22					
6       陈刚       运输工程学院       1       1         7       陈红       运输工程学院       1       1         8       高洁       运输工程学院       1       1         9       李笛       运输工程学院       1       1         10       刘丽娜       运输工程学院       1       1         11       周备       运输工程学院       1       0         12       蔡晶       运输工程学院       1       0         13       陈恒瑞       运输工程学院       1       0         14       丁玲       运输工程学院       1       0         15       高亚楠       运输工程学院       1       0         16       桂嘉伟       运输工程学院       1       0         17       黄岩       运输工程学院       1       0         18       李琼       运输工程学院       1       0         19       卢昕玮       运输工程学院       1       0         20       邵海鹏       运输工程学院       1       0         21       肖梅       运输工程学院       1       0         22       徐婷       运输工程学院       1       0         23       余丽洁       运输工程学院       1       0         24	4	彭志鹏	运输工程学院	2	0
7       陈红       运输工程学院       1       1         8       高洁       运输工程学院       1       1         9       李笛       运输工程学院       1       1         10       刘丽娜       运输工程学院       1       1         11       周备       运输工程学院       1       0         12       蔡晶       运输工程学院       1       0         13       陈恒瑞       运输工程学院       1       0         14       丁玲       运输工程学院       1       0         15       高亚楠       运输工程学院       1       0         16       桂嘉伟       运输工程学院       1       0         17       黄岩       运输工程学院       1       0         18       李琼       运输工程学院       1       0         19       卢昕玮       运输工程学院       1       0         20       邵海鵬       运输工程学院       1       0         21       肖梅       运输工程学院       1       0         22       徐婷       运输工程学院       1       0         23       余丽洁       运输工程学院       1       0         24       袁长伟       运输工程学院       1       0	5	韩雪艳	运输工程学院	1	2
8 高洁 运输工程学院 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	6	陈刚	运输工程学院	1	1
9       李笛       运输工程学院       1       1         10       刘丽娜       运输工程学院       1       1         11       周备       运输工程学院       1       0         12       蔡晶       运输工程学院       1       0         13       陈恒瑞       运输工程学院       1       0         14       丁玲       运输工程学院       1       0         15       高亚楠       运输工程学院       1       0         16       桂嘉伟       运输工程学院       1       0         17       黄岩       运输工程学院       1       0         18       李琼       运输工程学院       1       0         19       卢昕玮       运输工程学院       1       0         20       邵海鹏       运输工程学院       1       0         21       肖梅       运输工程学院       1       0         22       徐婷       运输工程学院       1       0         23       余丽洁       运输工程学院       1       0         24       袁长伟       运输工程学院       1       0	7	陈红	运输工程学院	1	1
10       刘丽娜       运输工程学院       1       1         11       周备       运输工程学院       1       0         12       蔡晶       运输工程学院       1       0         13       陈恒瑞       运输工程学院       1       0         14       丁玲       运输工程学院       1       0         15       高亚楠       运输工程学院       1       0         16       桂嘉伟       运输工程学院       1       0         17       黄岩       运输工程学院       1       0         18       李琼       运输工程学院       1       0         19       卢昕玮       运输工程学院       1       0         20       邵海鵬       运输工程学院       1       0         21       肖梅       运输工程学院       1       0         22       徐婷       运输工程学院       1       0         23       余丽洁       运输工程学院       1       0         24       袁长伟       运输工程学院       1       0	8	高洁	运输工程学院	1	1
11       周备       运输工程学院       1       1         12       蔡晶       运输工程学院       1       0         13       陈恒瑞       运输工程学院       1       0         14       丁玲       运输工程学院       1       0         15       高亚楠       运输工程学院       1       0         16       桂嘉伟       运输工程学院       1       0         17       黄岩       运输工程学院       1       0         18       李琼       运输工程学院       1       0         19       卢昕玮       运输工程学院       1       0         20       邵海鹏       运输工程学院       1       0         21       肖梅       运输工程学院       1       0         22       徐婷       运输工程学院       1       0         23       余丽洁       运输工程学院       1       0         24       袁长伟       运输工程学院       1       0	9	李笛	运输工程学院	1	1
12       蔡晶       运输工程学院       1       0         13       陈恒瑞       运输工程学院       1       0         14       丁玲       运输工程学院       1       0         15       高亚楠       运输工程学院       1       0         16       桂嘉伟       运输工程学院       1       0         17       黄岩       运输工程学院       1       0         18       李琼       运输工程学院       1       0         19       卢昕玮       运输工程学院       1       0         20       邵海鹏       运输工程学院       1       0         21       肖梅       运输工程学院       1       0         22       徐婷       运输工程学院       1       0         23       余丽洁       运输工程学院       1       0         24       袁长伟       运输工程学院       1       0	10	刘丽娜	运输工程学院	1	1
13       陈恒瑞       运输工程学院       1       0         14       丁玲       运输工程学院       1       0         15       高亚楠       运输工程学院       1       0         16       桂嘉伟       运输工程学院       1       0         17       黄岩       运输工程学院       1       0         18       李琼       运输工程学院       1       0         19       卢昕玮       运输工程学院       1       0         20       邵海鵬       运输工程学院       1       0         21       肖梅       运输工程学院       1       0         22       徐婷       运输工程学院       1       0         23       余丽洁       运输工程学院       1       0         24       袁长伟       运输工程学院       1       0	11	周备	运输工程学院	1	1
14     丁玲     运输工程学院     1     0       15     高亚楠     运输工程学院     1     0       16     桂嘉伟     运输工程学院     1     0       17     黄岩     运输工程学院     1     0       18     李琼     运输工程学院     1     0       19     卢昕玮     运输工程学院     1     0       20     邵海鹏     运输工程学院     1     0       21     肖梅     运输工程学院     1     0       22     徐婷     运输工程学院     1     0       23     余丽洁     运输工程学院     1     0       24     袁长伟     运输工程学院     1     0	12	蔡晶	运输工程学院	1	0
15       高亚楠       运输工程学院       1       0         16       桂嘉伟       运输工程学院       1       0         17       黄岩       运输工程学院       1       0         18       李琼       运输工程学院       1       0         19       卢昕玮       运输工程学院       1       0         20       邵海鵬       运输工程学院       1       0         21       肖梅       运输工程学院       1       0         22       徐婷       运输工程学院       1       0         23       余丽洁       运输工程学院       1       0         24       袁长伟       运输工程学院       1       0	13	陈恒瑞	运输工程学院	1	0
16       桂嘉伟       运输工程学院       1       0         17       黄岩       运输工程学院       1       0         18       李琼       运输工程学院       1       0         19       卢昕玮       运输工程学院       1       0         20       邵海鹏       运输工程学院       1       0         21       肖梅       运输工程学院       1       0         22       徐婷       运输工程学院       1       0         23       余丽洁       运输工程学院       1       0         24       袁长伟       运输工程学院       1       0	14	丁玲	运输工程学院	1	0
17       黄岩       运输工程学院       1       0         18       李琼       运输工程学院       1       0         19       卢昕玮       运输工程学院       1       0         20       邵海鹏       运输工程学院       1       0         21       肖梅       运输工程学院       1       0         22       徐婷       运输工程学院       1       0         23       余丽洁       运输工程学院       1       0         24       袁长伟       运输工程学院       1       0	15	高亚楠	运输工程学院	1	0
18     李琼     运输工程学院     1     0       19     卢昕玮     运输工程学院     1     0       20     邵海鹏     运输工程学院     1     0       21     肖梅     运输工程学院     1     0       22     徐婷     运输工程学院     1     0       23     余丽洁     运输工程学院     1     0       24     袁长伟     运输工程学院     1     0	16	桂嘉伟	运输工程学院	1	0
19     卢昕玮     运输工程学院     1     0       20     邵海鹏     运输工程学院     1     0       21     肖梅     运输工程学院     1     0       22     徐婷     运输工程学院     1     0       23     余丽洁     运输工程学院     1     0       24     袁长伟     运输工程学院     1     0	17	黄岩	运输工程学院	1	0
20     邵海鹏     运输工程学院     1     0       21     肖梅     运输工程学院     1     0       22     徐婷     运输工程学院     1     0       23     余丽洁     运输工程学院     1     0       24     袁长伟     运输工程学院     1     0	18	李琼	运输工程学院	1	0
21     肖梅     运输工程学院     1     0       22     徐婷     运输工程学院     1     0       23     余丽洁     运输工程学院     1     0       24     袁长伟     运输工程学院     1     0	19	卢昕玮	运输工程学院	1	0
22     徐婷     运输工程学院     1     0       23     余丽洁     运输工程学院     1     0       24     袁长伟     运输工程学院     1     0	20	邵海鹏	运输工程学院	1	0
23     余丽洁     运输工程学院     1     0       24     袁长伟     运输工程学院     1     0	21	肖梅	运输工程学院	1	0
24	22	徐婷	运输工程学院	1	0
	23	余丽洁	运输工程学院	1	0
	24	袁长伟	运输工程学院	1	0
	25	赵丹	运输工程学院	1	0

表 6 公路学院 SSCI 发文量统计表

序号	姓名	所属学院	发文数量	被引次数
1	张弛	公路学院	2	1
2	许金良	公路学院	2	0
3	邓亚娟	公路学院	1	2
4	张晓冬	公路学院	1	2
5	焦帅阳	公路学院	1	1
6	王晓明	公路学院	1	1
7	高旭和	公路学院	1	0
8	李哲	公路学院	1	0
9	龙雪琴	公路学院	1	0
10	马书红	公路学院	1	0
11	彭波	公路学院	1	0
12	王亚琼	公路学院	1	0
13	武娜	公路学院	1	0
14	产中	公路学院	1	0
15	袁浩允	公路学院	1	0
16	张宏	公路学院	1	0

表 7 建筑学院 SSCI 发文量统计表

序号	姓名	所属学院	发文数量	被引次数
1	侯全华	建筑学院	2	3
2	段亚琼	建筑学院	1	6
3	丁华	建筑学院	1	3
4	马轩	建筑学院	1	2
5	沈童	建筑学院	1	1
6	鱼晓惠	建筑学院	1	0
7	张月	建筑学院	1	0

表 8 水利与环境学院 SSCI 发文量统计表

序号	姓名	所属学院	发文数量	被引次数
1	王雪丽	水利与环境学院	2	0
2	霍艾迪	水利与环境学院	1	2
3	韦晓伟	水利与环境学院	1	2
4	罗梦雅	水利与环境学院	1	1
5	冯文文	水利与环境学院	1	0
6	贾志峰	水利与环境学院	1	0
7	李宇	水利与环境学院	1	0

表 9 建筑工程学院 SSCI 发文量统计表

序号	姓名	所属学院	发文数量	被引次数
1	日晶	建筑工程学院	2	0
2	王彤	建筑工程学院	1	0
3	袁春博	建筑工程学院	1	0

表 10 信息工程学院 SSCI 发文量统计表

序号	姓名	所属学院	发文数量	被引次数
1	崔华	信息工程学院	1	5
2	李腾龙	信息工程学院	1	1
3	吴金中	信息工程学院	1	0

表 11 电子与控制工程学院 SSCI 发文量统计表

序号	姓名	所属学院	发文数量	被引次数
1	薛超	电子与控制工程学院	2	2
2	李曙光	电子与控制工程学院	1	0

表 12 人文学院 SSCI 发文量统计表

序号	姓名	所属学院	发文数量	被引次数
1	Li Xiaoping	人文学院	1	1
2	冀芳	人文学院	1	0
3	刘兰剑	人文学院	1	0

# 表 13 土地工程学院 SSCI 发文量统计表

	姓名	所属学院	发文数量	—— 被引次数
1	邵雅静	土地工程学院	1	1
2	韩磊	土地工程学院	1	0
3	王晓峰	土地工程学院	1	0

# 表 14 地质工程与测绘学院 SSCI 发文量统计表

序号	姓名	所属学院	发文数量	被引次数
1	隋立春	地址工程与测绘学院	1	4
2	吴田军	地址工程与测绘学院	1	1

# 表 15 地球科学与资源学院 SSCI 发文量统计表

序号	姓名	所属学院	发文数量	被引次数
1	Liang Yihang	地球科学与资源学院	1	1
2	刘晓波	地球科学与资源学院	1	1

# 表 16 心理健康教育与咨询中心 SSCI 发文量统计表

序号	姓名	所属学院	发文数量	被引次数
1	鞠成婷	心理健康教育与咨询中心	1	2

# 表 17 外国语学院 SSCI 发文量统计表

序号	姓名	所属学院	发文数量	被引次数
1	林忠	外国语学院	1	0

# 第三章 SSCI 发表论文来源期刊及研究方向统计

# 3.1 SSCI 发表论文来源期刊及影响因子统计

2020年,以长安大学为第一作者单位发表的 SSCI 论文分布在 58 种期刊中,发文数量最多的期刊是《SUSTAINABILITY》,共计 30 篇,占总发文量的 19.11%,其 2020年的影响因子是 2.576,其次是《JOURNAL OF ADVANCED TRANSPORTATION》和《INTERNATIONAL JOURNAL OF ENVIRONMENTAL RESEARCH AND PUBLIC HEALTH》,均占总发文量的 10.19%,2020年的影响因子分别是 1.670和 2.468,详见表 18。

表 18 2020 年按第一作者 SSCI 发表论文来源期刊

序号	来源期刊	发文数 量	影响因子	占 2020 年总发 文量的百分比
1	SUSTAINABILITY	30	2.576	19.11%
2	JOURNAL OF ADVANCED TRANSPORTATION	16	1.670	10.19%
3	INTERNATIONAL JOURNAL OF ENVIRONMENTAL RESEARCH AND PUBLIC HEALTH	16	2.468	10.19%
4	IEEE ACCESS	12	3.745	7.64%
5	PLOS ONE	6	2.74	3.82%
6	JOURNAL OF CLEANER PRODUCTION	5	7.246	3.18%
7	ENGINEERING CONSTRUCTION AND ARCHITECTURAL MANAGEMENT	4	2.16	2.55%
8	SENSORS	4	3.275	2.55%
9	TRANSPORTATION RESEARCH PART D-TRANSPORT AND ENVIRONMENT	4	4.577	2.55%
10	ADVANCES IN CIVIL ENGINEERING	3	1.161	1.91%
11	POLISH JOURNAL OF ENVIRONMENTAL STUDIES	3	1.383	1.91%
12	SUSTAINABLE CITIES AND SOCIETY	3	5.268	1.91%
13	ACCIDENT ANALYSIS AND PREVENTION	2	3.655	1.27%
14	ENVIRONMENTAL SCIENCE AND POLLUTION RESEARCH	2	3.056	1.27%
15	IEEE TRANSACTIONS ON INTELLIGENT TRANSPORTATION SYSTEMS	2	6.319	1.27%
16	JOURNAL OF URBAN PLANNING AND DEVELOPMENT	2	1.381	1.27%
17	SYMMETRY-BASEL	2	2.645	1.27%
18	APPLIED MATHEMATICS AND COMPUTATION	1	3.472	0.64%
19	COGNITION TECHNOLOGY & WORK	1	1.206	0.64%
20	COMPLEXITY	1	2.462	0.64%
21	COMPUTER COMMUNICATIONS	1	2.816	0.64%

22	COMPUTERS & INDUSTRIAL ENGINEERING	1	4.135	0.64%
23	CORPORATE SOCIAL RESPONSIBILITY AND ENVIRONMENTAL MANAGEMENT	1	4.542	0.64%
24	CURRENT PSYCHOLOGY	1	2.051	0.64%
25	DISCRETE DYNAMICS IN NATURE AND SOCIETY	1	0.87	0.64%
26	ENTROPY	1	2.494	0.64%
27	ENVIRONMENTAL DEVELOPMENT	1	2.400	0.64%
28	EURASIP JOURNAL ON WIRELESS COMMUNICATIONS AND NETWORKING	1	1.408	0.64%
29	FRONTIERS IN EARTH SCIENCE	1	2.689	0.64%
30	GEOLOGICAL JOURNAL	1	1.595	0.64%
31	HUMAN AND ECOLOGICAL RISK ASSESSMENT	1	2.300	0.64%
32	IEEE JOURNAL OF SELECTED TOPICS IN APPLIED EARTH OBSERVATIONS AND REMOTE SENSING	1	3.827	0.64%
33	INDUSTRIAL MANAGEMENT & DATA SYSTEMS	1	3.329	0.64%
34	INTERNATIONAL JOURNAL OF AUTOMOTIVE TECHNOLOGY	1	1.245	0.64%
35	INTERNATIONAL JOURNAL OF INJURY CONTROL AND SAFETY PROMOTION	1	1.342	0.64%
36	INTERNATIONAL JOURNAL OF PRODUCTION ECONOMICS	1	5.134	0.64%
37	JOURNAL OF AIR TRANSPORT MANAGEMENT	1	2.811	0.64%
38	JOURNAL OF BUSINESS & INDUSTRIAL MARKETING	1	2.497	0.64%
39	JOURNAL OF CENTRAL SOUTH UNIVERSITY	1	1.249	0.64%
40	JOURNAL OF CLOUD COMPUTING-ADVANCES SYSTEMS AND APPLICATIONS	1	2.788	0.64%
41	JOURNAL OF COASTAL RESEARCH	1	0.793	0.64%
42	JOURNAL OF INTELLIGENT & FUZZY SYSTEMS	1	1.851	0.64%
43	JOURNAL OF INTELLIGENT TRANSPORTATION SYSTEMS	1	3.269	0.64%
44	JOURNAL OF KOREA TRADE	1	0.628	0.64%
45	JOURNAL OF PACIFIC RIM PSYCHOLOGY	1	0.800	0.64%
46	JOURNAL OF TRANSPORT GEOGRAPHY	1	3.834	0.64%
47	JOURNAL OF TRANSPORTATION ENGINEERING PART A-SYSTEMS	1	0.989	0.64%
48	PHYSICA A-STATISTICAL MECHANICS AND ITS APPLICATIONS	1	2.924	0.64%
49	PROCEEDINGS OF THE INSTITUTION OF CIVIL ENGINEERS-TRANSPORT	1	1.099	0.64%
50	RESEARCH IN TRANSPORTATION BUSINESS AND MANAGEMENT	1	2.189	0.64%
51	SCIENTIFIC REPORTS	1	3.998	0.64%
52	TECHNOLOGY IN SOCIETY	1	2.414	0.64%

53	TRAFFIC INJURY PREVENTION	1	1.38	0.64%
54	TRANSPORTATION	1	4.082	0.64%
55	TRANSPORTATION RESEARCH PART F-TRAFFIC	1	2.518	0.64%
55	PSYCHOLOGY AND BEHAVIOUR	1	2.316	0.0476
56	TRANSPORTMETRICAA-TRANSPORT SCIENCE	1	2.424	0.64%
57	TRANSPORTMETRICA B-TRANSPORT DYNAMICS	1	2.214	0.64%
58	TRAVEL BEHAVIOUR AND SOCIETY	1	3.352	0.64%

注:因 JCR 数据只更新到 2019年,故影响因子为 2019年数据。

# 3.2 2020 年我校发表 SSCI 论文的研究方向

2020年,以长安大学为第一作者单位发表的 SSCI 论文数量最多的研究方向是 Science & Technology - Other Topics; Environmental Sciences & Ecology, 共计 30篇,占总发文量的 19.11%,其次是 Engineering; Transportation和 Computer Science; Engineering,分别占总发文量的 14.01%和 14.01%。

表 19 2020 年我校发表 SSCI 论文的研究方向

序号	研究方向	论文 数量	占 2020 年总发
	Science & Technology - Other Topics; Environmental Sciences & Ecology	<b> </b>	<u>文量的百分比</u> 19.11%
2	Engineering; Transportation	22	14.01%
3	Computer Science; Engineering	17	10.83%
4	Environmental Sciences & Ecology; Public, Environmental & Occupational Health	16	10.19%
5	Science & Technology - Other Topics	9	5.73%
6	Environmental Sciences & Ecology	6	3.82%
7	Business & Economics	5	3.18%
8	Science & Technology - Other Topics; Engineering; Environmental Sciences & Ecology	5	3.18%
9	Transportation	5	3.18%
10	Chemistry; Engineering; Instruments & Instrumentation	4	2.55%
11			2.55%
12	Environmental Sciences & Ecology; Transportation	4	2.55%
13	Construction & Building Technology; Engineering	3	1.91%
14	Construction & Building Technology; Science & Technology - Other Topics; Energy & Fuels	3	1.91%
15	Engineering; Public Administration; Urban Studies	2	1.27%
16	Engineering; Public, Environmental & Occupational Health; Social Sciences - Other Topics; Transportation	2	1.27%
17	Geology	2	1.27%
18	Mathematics; Science & Technology - Other Topics	2	1.27%
19	Physics	2	1.27%
20	Psychology	2	1.27%

21	Public, Environmental & Occupational Health	2	1.27%
22	Biodiversity & Conservation; Environmental Sciences & Ecology	1	0.64%
23	Engineering	1	0.64%
24	Engineering; Operations Research & Management Science	1	0.64%
25	Engineering; Physical Geography; Remote Sensing; Imaging Science &	1	0.64%
	Photographic Technology	1	0.04%
26	Engineering; Telecommunications	1	0.64%
27	Environmental Sciences & Ecology; Physical Geography; Geology	1	0.64%
28	Mathematics	1	0.64%
29	Metallurgy & Metallurgical Engineering	1	0.64%
30	Psychology; Transportation	1	0.64%
31	Social Issues; Social Sciences - Other Topics	1	0.64%

# 附录 I 2020 年各单位发表的 SSCI 论文详细情况

#### 经济与管理学院

第 1 条, 共 36 条

标题: Prediction of multiproject resource conflict risk via an artificial neural network

作者: Bai, LB (Bai, Libiao); Wang, ZG (Wang, Zhiguo); Wang, HL (Wang, Hailing);

Huang, N (Huang, Ning); Shi, HJ (Shi, Huijing)

来源出版物: ENGINEERING CONSTRUCTION AND ARCHITECTURAL MANAGEMENT **DOI:** 10.1108/ECAM-03-2020-0201 提前访问日期: NOV 2020

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使用次数 (最近 180 天):9 使用次数 (2013 年至今):9

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摘要: Purpose Inadequate balancing of resources often results in resource conflict in the multiproject management process. Past research has focused on how to allocate a small amount of resources optimally but has scarcely explored how to foresee multiproject resource conflict risk in advance. The purpose of this study is to address this knowledge gap by developing a model to predict multiproject resource conflict risk.

Design/methodology/approach A fuzzy comprehensive evaluation method is used to transform subjective judgments into quantitative information, based on which an evaluation index system for multiproject resource conflict risk that focuses on the interdependence of multiple project resources is proposed. An artificial neural network (ANN) model combined with this system is proposed to predict the comprehensive risk score that can describe the severity of risk. Findings Accurately predicting multiproject resource conflict risks in advance can reduce the risk to the organization and increase the probability of achieving the project objectives. The ANN model developed in this paper by the authors can capture the essential components of the underlying nonlinear relevance and is capable of predicting risk appropriately. Originality/value The authors explored the prediction of the risks associated with multiproject resource conflicts, which is important for improving the success rate of projects but has received limited attention in the past. The authors established an evaluation index system for these risks considering the

interdependence among project resources to describe the underlying factors that contribute to resource conflict risks. The authors proposed an effective model to forecast the risk of multiproject resource conflicts using an ANN. The model can effectively predict complex phenomena with complicated and highly nonlinear performance functions and solve problems with many random variables.

入藏号: WOS:000592318500001

语言: English

文献类型: Article; Early Access

作者关键词: Multiproject management; Resource conflict; Risk prediction; Artificial

neural network

**KeyWords Plus:** PROJECT SCHEDULING PROBLEM; GENETIC ALGORITHM; CONSTRUCTION; MANAGEMENT; DROPOUT

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来源出版物页码计数: 27 输出日期: 2021-03-15

# 第 2 条, 共 36 条

标题: Influencing Factors for the Promotion of International Vocational Qualification and Certification: Evidences from International Project Manager Professionals in China

作者: Bai, LB (Bai, Libiao); Bao, T (Bao, Tana); Zhang, KM (Zhang, Kaimin); Shi, HJ

(Shi, Huijing); Wang, ZG (Wang, Zhiguo); Bai, SJ (Bai, Sijun)

来源出版物: SUSTAINABILITY 卷: 12 期: 5 文献

号: 1772 **DOI**: 10.3390/su12051772 出版年: MAR 1 2020

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使用次数 (最近 180 天): 5 使用次数 (2013 年至今): 9 引用的参考文献数: 42

摘要: Globalization has driven the promotion of international vocational qualification and certification (IVQC) to unify certification systems and standards. We explore IVQC promotion paths through the introduction and development of China's International Project Manager Professional (IPMP) certification and identify and analyse IVQC

processes' influencing factors. Four factors (economic level, education level, employment level, sex ratio) are proposed; their impacts are hypothesized. Geographically weighted regression (GWR) is employed to identify factor impact relationships and validate assumptions. The results show that the four factors are positive for the promotion of IVQC. Economic level, employment level, and sex ratio contribute to the promotion of IVQC; employment level contributes most. Education level has relatively small impact. Therefore, IVQC is more likely to enter areas with developed economies, high employment rates, and more males. The promotion of IVQC can be facilitated by continuous social progress and international development. However, areas where salient factor levels are too low still present challenges.

入藏号: WOS:000522470900073

语言: English 文献类型: Article

作者关键词: International Vocational Qualification and Certification; engineering education; International Project Manager Professional; geographically weighted regression; influencing factors

KeyWords Plus: GEOGRAPHICALLY WEIGHTED REGRESSION; OPPORTUNITY 地址: [Bai, Libiao] Beihang Univ, Sch Econ & Management, Beijing 100000, Peoples R China.

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#### 第 3 条, 共 36 条

标题: Carbon mitigation by the construction industry in China: a perspective of efficiency and costs

作者: Du, Q (Du, Qiang); Wu, J (Wu, Jiao); Cai, CL (Cai, Changlu); Li, Y (Li, Yi);

Zhou, J (Zhou, Jie); Yan, YQ (Yan, Yunqing)

来源出版物: ENVIRONMENTAL SCIENCE AND POLLUTION

RESEARCH 卷: 28 期: 1 页: 314-325 DOI: 10.1007/s11356-020-10412-z 提前访问

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使用次数 (最近 180 天): 19 使用次数 (2013 年至今): 19

引用的参考文献数:45

摘要: Evaluating carbon emission performance of the construction industry is a significant prerequisite for developing regional carbon mitigation plans. Taking environmental and technical heterogeneities into account, this paper employed a meta-frontier method to measure the carbon emission efficiency, carbon mitigation potential, and costs of the construction sector in different regions of China from 2005 to 2016. The empirical results show that substantial disparities in carbon emission efficiency exist in the construction industry. The total carbon mitigation potential of this sector was 206.76 million tons, with the Lower Yellow river area accounting for the largest proportion at 27%. Meanwhile, the carbon mitigation costs of this sector increased from 584.94 to 1273.30 yuan/ton during 2005-2016. The highest mitigation costs occur in the Lower Yangtze River area and the South Coastal area, indicating it was more costly in these areas to conduct additional carbon emissions mitigation. The results could facilitate the policy formulation on regional-oriented carbon emissions mitigation of the construction industry in China.

入藏号: WOS:000560952200011

**PubMed ID: 32812154** 

语言: English 文献类型: Article

作者关键词: Carbon emission efficiency; Carbon mitigation costs; Meta-frontier analysis; Directional output distance function; Construction industry

**KeyWords Plus:** MARGINAL ABATEMENT COSTS; SHADOW PRICES; CO2 ABATEMENT; ENVIRONMENTAL EFFICIENCY; EMISSIONS EFFICIENCY; REGIONAL DIFFERENCES; PRODUCTIVITY GROWTH; UNDESIRABLE

**OUTPUTS; EMPIRICAL-ANALYSIS; ENERGY EFFICIENCY** 

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#### 第 4 条, 共 36 条

标题: Carbon inequality in the transportation industry: empirical evidence from China作者: Du, Q (Du, Qiang); Li, JT (Li, JingTao); Li, Y (Li, Yi); Huang, N (Huang, Ning); Zhou, J (Zhou, Jie); Li, Z (Li, Zhe)

来源出版物: ENVIRONMENTAL SCIENCE AND POLLUTION

RESEARCH 卷: 27 期: 6 页: 6300-6311 **DOI**: 10.1007/s11356-019-07291-4 出版年: FEB 2020

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使用次数 (最近 180 天): 7 使用次数 (2013 年至今): 12

引用的参考文献数:32

摘要: Transportation has significantly contributed to carbon emissions, and concerns regarding emissions mitigation have become central research issues. To avoid a reversal of the reduction convergence in the environmental field, mitigation strategies should aim to reduce the environmental risks posed by carbon inequality. This article uses the Gini index and Theil index to examine carbon inequality in the transport sector in China and decomposes the per capita carbon inequality using Kaya factors. Then, the variations within and between regions are analyzed by decomposing the Theil index of the carbon

intensity by region. Our major findings are as follows. First, carbon inequality is relatively insignificant in the regional transport sector in China. Second, the main drivers of the per capita carbon inequality include the carbon intensity and per capita added value in the transport sector. Third, intra-regional components are major contributors to the heterogeneous spatial distribution of the carbon intensity, and the degree of carbon inequality in the eastern region is much greater than that in other regions. Moreover, the four economic regional components of the Theil index of the carbon intensity have had an obvious convergence effect since 2009. In addition, this study provides some suggestions for developing differentiated mitigation policies in different regions.

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**PubMed ID: 31865562** 

语言: English 文献类型: Article

作者关键词: Inequality; Carbon emissions; Transportation; Gini index; Theil index **KeyWords Plus:** CO2 EMISSIONS; ENERGY-CONSUMPTION; DECOMPOSITION

ANALYSIS; EFFICIENCY; IMPACT; INCOME

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第 5 条, 共 36 条

标题: Low-Carbon Development of the Construction Industry in China's Pilot Provinces

作者: Du, Q (Du, Qiang); Lu, XR (Lu, Xinran); Yu, M (Yu, Ming); Yan, YQ (Yan,

Yunqing); Wu, M (Wu, Min)

来源出版物: POLISH JOURNAL OF ENVIRONMENTAL

STUDIES 卷: 29 期: 4 页: 2617-2629 **DOI**: 10.15244/pjoes/111969 出版年: 2020

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摘要: The construction industry in China has developed rapidly. However, the development has been accompanied by a large amount of energy consumption and carbon emissions. Thus, the formulation of policies is complex, and research on the impact of emission reduction policies on carbon reduction in the construction industry, especially in China, has become necessary as it has massive regions with uneven development. Combined with the coefficient in the 2012 Intergovernmental Panel on Climate Change (IPCC) guidelines for national greenhouse gas inventories and China's calorific value, this study took the first batch of low-carbon pilot provinces (Guangdong, Hubei, Liaoning, Shaanxi, and Yunnan) announced by China's State Commission for Reform and Development in 2010 as the research object and separated the construction carbon emissions into direct and indirect categories to improve the accuracy of calculations at the provincial level. The EKC (environmental Kuznets curve) and Tapio model were employed to study the relationship between economic growth and carbon emissions of the construction industry, then the decoupling of major influencing factors of carbon emissions in the low-carbon pilot province in China from 2005 to 2014 based on the features of different regions and the economic policy planning in China were comparatively analyzed. The results showed that the construction industry carbon emissions and economic growth had a non-significant decoupling state in underdeveloped regions such as Shaanxi, Liaoning, and Yunnan, which would be better with low carbon development in potential, whereas they were significant decoupling states in well-developed regions such as Guangdong and Hubei. Then, this study revealed that the evolving trends of the decoupling of major influencing factors varied in different provinces; therefore, the results and insights support the policy and decisions to minimize construction carbon emissions.

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语言: English 文献类型: Article

作者关键词: construction industry; carbon emissions; decoupling status; sustainable;

China

**KeyWords Plus:** ECONOMIC-GROWTH; CO2 EMISSIONS;

ENERGY-CONSUMPTION; POLLUTANT EMISSIONS; DIOXIDE EMISSIONS;

IMPACTS; DECOMPOSITION; REDUCTION; LMDI

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#### 第 6 条, 共 36 条

标题: Modeling Formation and Operation of Collaborative Green Innovation between Manufacturer and Supplier: A Game Theory Approach

作者: Li, Q (Li, Qian); Kang, YF (Kang, Yuanfei); Tan, LL (Tan, Lingling); Chen, B (Chen, Bo)

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摘要: Prior research has mainly emphasized the strategic importance of a collaborative green innovation (CGI) between the manufacturer and supplier in a supply chain, leading to an overlook at the decision-making mechanism and determinants of CGI. Guided by the transaction cost economics and social exchange theory, our study constructs a mathematical game model to incorporate the key dimensions of an effective inter-firm collaboration for green innovation. Applying the Nash game bargaining principles, our evolutionary game model analysis provides an analytic system to understand the mechanisms of forming and operating a collaboration partnership between the manufacturer and supplier for green innovation. Based on various scenarios from the numerical simulation parameters for the involved influencing factors, our simulation has

produced the Nash equilibrium solutions and identified the major determining factors for successfully forming and operating CGI. They are the trust level between the manufacturer and supplier as the CGI partners, value/profit sharing ratio between the partners, knowledge complementarity of the partners, and product type for the green innovation.

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语言: English 文献类型: Article

作者关键词: collaborative green innovation; knowledge complementarity; revenue

distribution; trust level; Nash bargaining game

**KeyWords Plus:** PARTNER SELECTION; PRODUCT INNOVATION; CHAIN MANAGEMENT; PERFORMANCE; TRUST; ADVANTAGE; MECHANISM; REVENUE; FIRMS

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# 第7条,共36条

标题: Collaborative intermodal freight transport network design and vehicle arrangement with applications in the oil and gas drilling equipment industry

作者: Liu, D (Liu, Dan); Yan, PY (Yan, Pengyu); Deng, ZH (Deng, Zhenghong); Wang, YH (Wang, Yinhai); Kaisar, EI (Kaisar, Evangelos, I)

来源出版物: TRANSPORTMETRICA A-TRANSPORT

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摘要: Decentralized freight decision making has been proven to be one of the barriers to achieve the optimal cost-saving freight transportation network. This study presents a collaborative intermodal freight network for the transportations of oil and gas drilling equipment, where a freight forwarder serves as a centralized decision-maker to coordinate transportation activities. We formulate the problem as a minimum intermodal transport cost model with a nonlinear objective function. Also, novel path-based decision variables instead of arc-based decision variables are used to formulate the selections of transportation services. A hybrid genetic algorithm and particle swarm optimization algorithm (GA-PSO) in combination with a batch strategy is designed. The experimental results show that the proposed hybrid GA-PSO method has a better performance compared with existing algorithms in terms of the solution quality, and computational time. Furthermore, the proposed approach is applied to real-world instances of O&G drilling equipment in the 'China Railway Express' network.

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语言: English 文献类型: Article

作者关键词: Collaborative intermodal transport network; tactical planning; network flow planning; vehicle arrangement; hybrid genetic algorithm and particle swarm optimization algorithm; batch strategy

**KeyWords Plus:** CARRIER COLLABORATION; ROUTING PROBLEM; ALLOCATION MECHANISMS; LOGISTICS NETWORK; DECISION-SUPPORT; SEARCH; ALGORITHM; MANAGEMENT; ALLIANCES; LOCATION

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#### 第8条,共36条

标题: Exploring the robustness of public transportation for sustainable cities: A double-layered network perspective

作者: Ma, F (Ma, Fei); Shi, WJ (Shi, Wenjing); Yuen, KF (Yuen, Kum Fai); Sun, QP (Sun, Qipeng); Xu, XB (Xu, Xiaobo); Wang, YJ (Wang, Yongjie); Wang, ZH (Wang, Zuohang)

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摘要: The reliable and safe operation of an urban public transportation (UPT) system is of great significance to the sustainable development of a city. In-depth analyses of UPT network by exploring the topological structure and passenger travel features can help explain the mechanisms driving reliable UPT operations. Based on complex network theory, we proposed a robust model for a Bus-Subway double-layered network (BeS DLN) from the structural and functional perspectives. The following indicators were used to quantify the structural robustness of B-S DLN: average path length (APL), relative size of giant component (RSGC) and global network efficiency (GNE). The functional robustness was measured using the ratio of passenger flow loss (R). Using urban traffic data from the Xicheng District of Beijing, we analyzed the cascading failure of BeS DLN based on a nonlinear load-capacity model with two capacity control parameters: alpha and

beta. The simulation results show that alpha and beta significantly impact the cascading failure process of BeS DLN. An increase in beta or decrease in a can enhance the network's ability to resist cascading failure. The parameter control method revealed that the B-S DLN achieves strong robustness when alpha = 0.2 and beta = 0.5. Comparing the network robustness under a random attack and intentional attack, the B-S DLN is more robust under an intentional attack than in the random attack mode. This indicates that the robustness of B-S DLN can be significantly improved by rationally increasing station capacities. (c) 2020 Elsevier Ltd. All rights reserved.

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语言: English 文献类型: Article

作者关键词: Urban public transportation; Double-layered network; Robustness;

Nonlinear load-capacity model; Cascading failure

KeyWords Plus: CASCADING FAILURES; COMPLEX NETWORKS;

VULNERABILITY; METRO; ATTACK; STRATEGY; QUALITY

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# 第 9 条, 共 36 条

标题: The Influence of Continuous Improvement of Public Car-Sharing Platforms on Passenger Loyalty: A Mediation and Moderation Analysis

作者: Ma, F (Ma, Fei); Guo, D (Guo, Dan); Yuen, KF (Yuen, Kum Fai); Sun, QP (Sun, Qipeng); Ren, FX (Ren, Fuxia); Xu, XB (Xu, Xiaobo); Zhao, CY (Zhao, Chengyong) 来源出版物: INTERNATIONAL JOURNAL OF ENVIRONMENTAL RESEARCH

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摘要: Public car-sharing is a growing business model that contributes to sustainable transportation and urban development. The continuous improvement of public car-sharing platform to garner passenger loyalty is vital for a car-sharing platform's success. This study applied perceived value theory, trust theory, and transaction cost theory to construct a structural equation model in order to explain passenger loyalty. Data from 755 surveys were collected using stratified sampling in mainland China. The estimated results of the theoretical model show that the relationship between continuous improvement and passenger loyalty is mediated by passenger perceived value, passenger trust, and transaction costs. Consequently, a multi-group analysis is conducted to analyze the moderation effects of passenger's license and car-sharing experience on the theoretical model. The results show that some of the path coefficients are significantly different between these sub-groups. This indicates that platforms should provide differentiate services for passengers based on the purpose of using car-sharing and usage experience. This study provides new theoretical insights into understanding passenger loyalty with respect to public car-sharing and provides policy recommendations for the sustainable development of public car-sharing.

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语言: English 文献类型: Article

作者关键词: car-sharing; continuous improvement; passenger loyalty; structural equation

model; perceived value

**KeyWords Plus:** PERCEIVED VALUE; CONSUMER PERCEPTIONS; SERVICE QUALITY; TRUST; PERFORMANCE; SATISFACTION; INTENTIONS;

COMMITMENT; TRANSPORT; FRAMEWORK

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#### 第 10 条, 共 36 条

标题: Spatial-Temporal Evolution of Urban Resilience and Its Influencing Factors: Evidence from the Guanzhong Plain Urban Agglomeration

作者: Ma, F (Ma, Fei); Wang, ZH (Wang, Zuohang); Sun, QP (Sun, Qipeng); Yuen, KF (Yuen, Kum Fai); Zhang, YX (Zhang, Yanxia); Xue, HF (Xue, Huifeng); Zhao, SM (Zhao, Shumei)

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摘要: Rapid urbanization places great pressure on the ecological environment and the carrying capacity of cities. Improving urban resilience has become an inherent requirement for the sustainable development of modern cities and urban agglomerations.

This study constructed a comprehensive system to evaluate urban resilience from four perspectives: The ecological environment, economic level, social environment, and infrastructure services. As a case study, the extreme entropy method and panel data from about 16 cities from 2009 to 2016 were used to calculate resilience levels in the Guanzhong plain urban agglomeration (GPUA) in China. The spatial and temporal evolution of urban resilience characteristics in the GPUA were analyzed using ArcGIS. The influencing factors were further explored using a grey correlation analysis. The results showed that the urban resilience of GPUA experienced geographical differentiation in the "East-Central-Western" area and a "circle type" evolution process. Most urban resilience levels were low. The resilience of the infrastructure and the ecological environment significantly impacted the city and became its development weaknesses. Economic considerations have become one of the main factors influencing fluctuations in urban resilience. In summary, this study explored the differences in resilience in the GPUA and provided a reference for improving the urban resilience of other cities located in underdeveloped regions. The study also provided a useful theoretical basis for sustainable urban development.

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语言: English 文献类型: Article

作者关键词: urban agglomeration; urban resilience; extreme entropy method; grey correlation degree; spatial-temporal evolution

**KeyWords Plus:** CLIMATE-CHANGE; COMMUNITY RESILIENCE; CITY; VULNERABILITY; SYSTEMS; ISSUES

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#### 第 11 条, 共 36 条

标题: Assessing the Vulnerability of Logistics Service Supply Chain Based on Complex Network

作者: Ma, F (Ma, Fei); Xue, HF (Xue, Huifeng); Yuen, KF (Yuen, Kum Fai); Sun, QP (Sun, Qipeng); Zhao, SM (Zhao, Shumei); Zhang, YX (Zhang, Yanxia); Huang, K (Huang, Kai)

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摘要: The reliable operation of a logistics service supply chain (LSSC) is a key factor for improving logistics efficiency and service level, and vulnerability is an important indicator of reliable LSSC operation. Based on complex network theory, we reconstructed the running mechanism of logistics service providers, integrators, and demanders. We constructed an improved structure model of LSSC. By observing the selected three indicators (clustering coefficient, maximum connectivity, and network connectivity efficiency), the influence caused by the problem will continue to spread to more subjects along the network when a problem exists in one part of the network. The results showed that the destructive power of deliberate attacks is far greater than the damage caused by random attacks, and the disruption of logistics service integrators will considerably increase the vulnerability of the LSSC. However, even if logistics service integrators are removed completely, the LSSC still can operate at low efficiency. Through a case analysis, we identified the vulnerable nodes in logistics service, clarify the vulnerable mechanism in LSSC, and provide guidance for the operation of LSSC in real life.

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语言: English 文献类型: Article 作者关键词: logistics service supply chain; complex network; vulnerability measure; attack strategy

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#### 第 12 条, 共 36条

标题: Assessing the vulnerability of urban rail transit network under heavy air pollution: A dynamic vehicle restriction perspective

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摘要: With the sharp increase of vehicle emissions in urban areas, some cities in China

have launched dynamic vehicle restriction policies to reduce carbon emissions by limiting the use of private cars. The dynamic vehicle restriction policies include One-Day-Per-Week (ODPW) and Odd-And-Even (OAE). The implementation of these policies can cause private car users to switch to public transport. This adds tremendous pressure on urban public transportation systems, especially the rail transport network (RTN). In this study, we examine the impact of dynamic restriction policies on RTN's vulnerability. An evaluation indicator system for RTN's vulnerability is first constructed using the average shortest path, congestion degree, and average passenger flow intensity. Thereafter, we simulate the cascading failure process of the RTN using a load capacity model. The simulation results show that implementing dynamic vehicle restriction policies will lead to cascading failure of the RTN and increase its vulnerability. According to the simulation results, it was found that when the restriction policy changes from ODPW to OAE, the RTN is more likely to cause cascading failure and its vulnerability increases sharply. Consequently, transport operators should adopt various measures to prevent the cascading failures of RTN and reduce its vulnerability according to different restriction policies.

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作者关键词: Dynamic vehicle restriction; Rail transit network; Vulnerability; Complex

network

**KeyWords Plus:** COMPLEX NETWORKS; ROBUSTNESS; SUBWAY; SHANGHAI; METRO; CENTRALITY; POLICIES; SYSTEM; SAFETY; ERROR

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### 第 13 条, 共 36 条

标题: Spatial Characteristics and Influencing Factors of Carbon Emissions from Energy Consumption in China's Transport Sector: An Empirical Analysis Based on Provincial Panel Data

作者: Peng, ZM (Peng, Zhimin); Wu, QQ (Wu, Qunqi); Li, M (Li, Min)

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摘要: This paper examines the CO2 emissions from energy consumption in China's transport sector, conducting an empirical investigation into the spatial distribution characteristics and influencing factors of transport CO2 emissions. This study, which is based on province-level panel data covering the 30 provincial regions during the period 2001-2016, used the methods of exploratory spatial data analysis (ESDA) and the extended STIRPAT model (examined by the method of system-generalized method of moments (Sys-GMM) regression). The results indicated that the amount of CO2 emissions in China's transport sector has increased steadily during the observation period, but there was a noticeable disparity across the provinces and regions. From the perspective of spatial dimension, the spatial agglomeration characteristics of provincial transport CO2 emissions tended to be strengthened, and the pattern evolutions of spatial distribution presented a path-dependence effect to some extent. The scale of population was found to be the most important influencing factor of transport CO2 emissions, and followed by the per-capita GDP. Further, the improvement of energy efficiency was the key factor to controlling transport CO2 emissions. Compared to freight transportation, passenger transportation was more important in transport CO2 emissions reduction due to its lower efficiency of energy utilization and rapid growth. Meanwhile, electrification played an important inhibitory effect on transport CO2 emissions because of its high fuel efficiency and less pollution. Importantly, we could not support the existence of the environmental Kuznets curve (EKC) hypothesis in China's transport sector during the observation period, which describes the relationship between the environmental pressures and economic development. These findings contain some meaningful implications for policy makers: confirm the priority transport CO2 emissions reduction areas, improve transport energy efficiency, strengthen passenger transportation decarburization policy, and highlight the model shift of fuel consumption.

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语言: English 文献类型: Article

作者关键词: transport CO2 emissions; spatial distribution characteristics; STIRPAT

model; Sys-GMM regression; China

**KeyWords Plus:** ENVIRONMENTAL KUZNETS CURVE; CO2 EMISSIONS; DIOXIDE EMISSIONS; ECONOMIC-GROWTH; DECOMPOSITION ANALYSIS; PERFORMANCE; POPULATION; DETERMINANTS; INTENSITY; AFFLUENCE

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#### 第 14 条, 共 36 条

标题: Temporal-Spatial Pattern and Influencing Factors of China's Province-Level Transport Sector Carbon Emissions Efficiency

作者: Peng, ZM (Peng, Zhimin); Wu, QQ (Wu, Qunqi); Wang, DF (Wang, Dongfang); Li, M (Li, Min)

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摘要: The transport sector, as an industry with high energy consumption and high carbon emissions, plays an increasing role in achieving the goal of carbon emissions reduction in China. Understanding the situation of the transport sector's carbon emissions efficiency and the relevant dominating driving forces is an important prerequisite for formulating

carbon emissions reduction polices. This study evaluated the transport sector carbon emissions efficiency of 30 provinces in China from 2004 to 2016 using the Super slacks-based measure (Super-SBM) model, which employs Moran's I index and spatial econometric approaches to examine its spatial dependence and the dominating driving factors. The results are shown as follows. Firstly, the transport carbon emissions efficiency had a noticeable disparity across the provinces and regions, and the spatial distribution characteristic of transport sector carbon emissions efficiency could be described as "high in the east and low in the west". Secondly, transport sector carbon emissions efficiency presented significant spatial dependence and clustering characteristics, and the pattern evolutions of spatial distribution presented a path-dependence effect to some extent. Thirdly, the regression results of the spatial Durbin model (SDM) indicated that the per-capita GDP and transportation energy consumption structure had significantly positive effects on transport sector carbon emissions efficiency, whereas the urbanization, transportation intensity, transportation energy intensity, and transportation service structure hada negative effect on transport sector carbon emissions efficiency.

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语言: English 文献类型: Article

作者关键词: carbon emissions efficiency; spatial dependence; Moran's I index; spatial

econometric analysis; transport sector; China

**KeyWords Plus:** CO2 EMISSIONS; DIOXIDE EMISSIONS; ENVIRONMENTAL EFFICIENCY; PASSENGER TRANSPORT; ENERGY-CONSUMPTION; ECONOMIC-GROWTH; DECOMPOSITION; PERFORMANCE; INTENSITY; REDUCTION

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### 第 15 条, 共 36 条

标题: Optimal financing mode selection for a capital-constrained retailer under an implicit bankruptcy cost

作者: Shi, JZ (Shi, Jinzhao); Guo, J (Guo, Ju'e); Du, Q (Du, Qiang); Lin, F (Lin, Feng); Lai, KK (Lai, Kin Keung); Cheng, TCE (Cheng, T. C. E.)

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摘要: In the context of the capital-constrained newsvendor problem under an implicit bankruptcy cost, we explore how such a cost affects a capital-constrained retailer's financing mode selection decision between bank credit financing (BCF) and trade credit financing (TCF). We first study the problem in a single credit channel where the retailer can choose only one of the two financing modes. We find that the retailer prefers TCF to BCF only when the TCF interest rate (TCF-IR) is lower than a threshold, and the "dominant area" of TCF expands with increasing bankruptcy cost. We then study the problem in a dual credit channel where the retailer can choose a portfolio comprising BCF and TCF, and examine two repayment sequences, i.e., repaying BCF first, and vice versa. We propose two approaches to solve the problems. We find that if BCF is repaid first, as the TCF-IR increases from zero, the retailer first chooses only TCF, then a portfolio comprising BCF and TCF, and finally only BCF. On the other hand, if TCF is repaid first, the retailer always chooses the single credit channel (BCF or TCF) if the TCF-IR is not greater than a threshold or the bankruptcy cost is higher than a threshold; otherwise, a portfolio comprising BCF and TCF, or only BCF. Finally, we conduct numerical experiments to verify our main theoretical findings and examine the effects of the retailer's internal capital endowment on its financing mode selection decision, showing that a wealthier retailer is more likely to prefer BCF to TCF.

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语言: English 文献类型: Article

作者关键词: Capital-constrained newsvendor; Financing mode selection; Bank credit;

Trade credit; Implicit bankruptcy cost

KeyWords Plus: TRADE CREDIT; SUPPLY CHAIN; INVENTORY MANAGEMENT; POLICY; DELAY; BANK; RISK; EQUILIBRIUM; PRIORITY 地址: [Shi, Jinzhao; Du, Qiang] Changan Univ, Sch Econ & Management, Middle Sect

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#### 第 16 条, 共 36 条

标题: Coordinating the supply chain finance system with buyback contract: A capital-constrained newsvendor problem

作者: Shi, JZ (Shi, Jinzhao); Du, Q (Du, Qiang); Lin, F (Lin, Feng); Li, Y (Li, Yi); Bai, LB (Bai, Libiao); Fung, RYK (Fung, Richard Y. K.); Lai, KK (Lai, Kin Keung)

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摘要: This paper studies the "Capital-constrained Newsvendor (CCNV)" problem in a Supply Chain Finance (SCF) system where the manufacturer offers a buyback (BB)

contract to compensate the lender in the case of the retailer's default. Firstly, a three-level Stackelberg game in the SCF system is characterized with the bank acting as a leader, the manufacturer as a sub-leader and the retailer as a follower. Then, the equilibriums of the SCF game are investigated under a monopolistic bank market and a competitive bank market respectively. On that basis, the coordination strategies of the SCF system are analyzed. It is found that a buyback contract combined with a wholesale price contract fully coordinates the overall SCF system, and all the SCF members benefit from the coordination as long as the buyback price coefficient falls within a favorable range known as the "Pareto Zone". Additionally, a conditional buyback (CBB) contract is studied in the SCF system, and the partial credit guarantee (PCG) contract of Yan, Sun, Zhang, and Liu (2016) is further compared with our BB/CBB contract, confirming the substitutability of these two contracts in an SCF system.

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语言: English 文献类型: Article

作者关键词: Supply chain finance; Capital-constrained newsvendor; Stackelberg game; Buyback contract; System coordination

**KeyWords Plus:** TRADE CREDIT; INVENTORY MANAGEMENT; STACKELBERG STRATEGIES; BANK CREDIT; MODEL; RISK; RETAILER; EQUILIBRIUM; PERFORMANCE; AVERSION

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### 第 17 条, 共 36 条

标题: Evolution of the Complex Partnerships between Banks and B2B e-Trading

Platforms: A Theoretical Interpretation from the Chinese Market

作者: Shi, JZ (Shi, Jinzhao); Guo, JE (Guo, Ju'e); Du, Q (Du, Qiang); Bai, LB (Bai,

Libiao); Li, Y (Li, Yi); Yan, WJ (Yan, Wenjun); Lai, KK (Lai, Kin Keung)

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摘要: Based on the principal-agent theory, we give a theoretical interpretation on evolution of the complex partnerships between the online SCF (supply chain finance) providers in China. First, we describe the principal-agent relationships and analyze the optimal profit-sharing contracts between the banks and the B2B platforms. Then, from a dual perspective of leadership transfer and absolute benefit change, we explain the behavioral choices of the banks in the cooperation. Results show that, at the initial stage of growth of the platforms' abilities to rate online borrowers, the leadership and the absolute benefit of the banks will suffer a "double decline," which explains why the leading banks in China "divorced" the B2B platforms during 2011 to 2013. However, as the platforms' rating abilities grow to "maturity," the absolute benefit of the banks will finally exceed its original level, and then the rational banks would cooperate with the platforms again even at the expense of losing a portion of their leadership, which answers why the banks in China have come back to "remarry" the B2B platforms since 2014.

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CHALLENGES; MANAGEMENT; ADOPTION

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### 第 18 条, 共 36 条

标题: Dynamic Evolution of Safety Regulation of the Ridesharing Industry under Social Media Participation

作者: Sun, QP (Sun, Qipeng); Li, TZ (Li, Tingzhen); Ma, F (Ma, Fei); Guo, XZ (Guo,

Xiaozhuang); Wang, SJ (Wang, Sijie)

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摘要: The emergence of ridesharing has spread against the background of the sharing economy. There have been a lot of controversies since the emergence of ridesharing, particularly regarding regulatory issues. The safety regulation of the ridesharing industry involves many parties, including governments, platform companies, and society at large. Currently, because of the influence of information asymmetry, it increases the uncertainty of governments' regulation effect and the difficulty of making regulation measures. Meanwhile, social media, one of the most important forces of social regulation, has not paid enough attention to playing an appropriate role in the safety regulation of the ridesharing industry. Therefore, this study constructs an evolutionary game model between governments and platform companies that concerns the safety regulations of ridesharing passengers under social media participation. The influence path of social media is explored by model solution and numerical simulation. Our results indicate that social media participation has a positive impact on this safety regulation. Specifically, social media participation could reduce governments' regulatory costs and encourage it to strictly regulate. The exposure of social media could bring losses to platform companies involved and promote platform companies' investments in improving passengers' safety. This study provides a decision basis for governments to introduce social media in the safety regulation of the ridesharing industry.

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语言: English 文献类型: Article

作者关键词: ridesharing; safety regulation; social media; evolutionary game

KeyWords Plus: SHARING ECONOMY; GAME; OPTIMIZATION; GOVERNANCE

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### 第 19 条, 共 36 条

标题: CO2 emission in transportation sector across 51 countries along the Belt and Road

from 2000 to 2014

作者: Wang, C (Wang, Chao); Wood, J (Wood, Jacob); Wang, YJ (Wang, Yongjie);

Geng, XR (Geng, Xinrui); Long, XL (Long, Xingle)

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摘要: The transportation sector is a key economic sector and an important source of CO2 emissions. Due to these environmental implications and a desire to reduce emission levels, the number of empirical analyses on the transportation sector have increased significantly in recent times. Given this pretext, our study examines the heterogeneity and spatial autocorrelation CO2 emissions of the transportation sector for 51 belt and road economies from 2000 to 2014. As part of analysis, we examine the heterogeneity of CO2 emissions in the transportation sector through the use of the Theil index and semi-variogram analysis. Furthermore, our study also analyzed the global and local spatial autocorrelation of transport sector CO2 emissions using the Moran index for participating countries. From the analysis, this study found that the transportation CO2 emission intensity of Central and Western Asia and North Africa is significantly higher than that of other regions along the belt and road, and there is a strong spatial correlation in Southeast Asian countries. Our research provides a key reference point for governments by proposing carbon-reduction policies and the promotion of greener developmental initiatives within the transportation sector. (C) 2020 Elsevier Ltd. All rights reserved.

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语言: English 文献类型: Article

作者关键词: Green transportation; CO2 emission intensity; Theil index; Belt and Road **KeyWords Plus:** POLLUTION-ABATEMENT COSTS; ECONOMIC-GROWTH; CARBON EMISSIONS; SPATIAL-DISTRIBUTION; ENERGY-CONSUMPTION; DRIVING FACTORS; CHINA BELT; DECOMPOSITION; PERSPECTIVE;

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### 第 20 条, 共 36 条

标题: Transportation CO2 emission decoupling: An assessment of the Eurasian logistics corridor

作者: Wang, C (Wang, Chao); Zhao, YL (Zhao, Yuelin); Wang, YJ (Wang, Yongjie); Wood, J (Wood, Jacob); Kim, CY (Kim, Chi Yeol); Li, Y (Li, Yi)

来源出版物: TRANSPORTATION RESEARCH PART D-TRANSPORT AND ENVIRONMENT 卷: 86 文献号: 102486 DOI: 10.1016/j.trd.2020.102486 出版年: SEP 2020

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使用次数 (最近 180 天): 9 使用次数 (2013 年至今): 9 引用的参考文献数: 44 摘要: The Eurasian logistics corridor is as important transportation hub delivering goods and services to countries along the belt and road. While greatly promoting the economic and social development of countries in the region, the corridor also presents enormous energy consumption and CO2 emission challenges. In order to assess these demands, our study combines the Tapio decoupling model and the logarithmic mean divisia index (LMDI) to analyze the relationship between transportation sector development and CO2 emissions. Our study shows that transportation-intensity effect is the main driving force behind CO2 emission reductions in developed countries, while the energy-intensity effect is key to reducing transportation CO2 emissions in developing countries. Moreover, we demonstrated that carbonand transportation-intensity effects inhibit transportation CO2 emissions, while the factors of economic structure and population size help to increase transportation CO2 emission levels. Finally, our research provides an important reference for economies seeking to develop greener transportation sectors.

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语言: English 文献类型: Article

作者关键词: Eurasian logistics corridor; CO2 emission; Tapio decoupling; LMDI; Green transportation

**KeyWords Plus:** ECONOMIC-GROWTH; DECOMPOSITION ANALYSIS; ENERGY-CONSUMPTION; DRIVING FORCES; CHINA; SECTOR;

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输出日期: 2021-03-15

### 第 21 条, 共 36 条

标题: Transportation CO2 emission decoupling: Empirical evidence from countries along the belt and road

作者: Wang, C (Wang, Chao); Wood, J (Wood, Jacob); Geng, XR (Geng, Xinrui); Wang,

YJ (Wang, Yongjie); Qiao, CY (Qiao, Chunyan); Long, XL (Long, Xingle) 来源出版物: JOURNAL OF CLEANER PRODUCTION 卷: 263 文献

号: 121450 **DOI**: 10.1016/j.jclepro.2020.121450 出版年: AUG 1 2020

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摘要: The belt and road has developed into the most active economic corridor in the world, with its economic exchanges greatly stimulating the demand for transportation. Its development also poses greater challenges to those seeking to reduce the level of CO2 emissions within the transportation sector. This paper selects panel data from 51 countries along the belt and road over the 2000-2014 period. First, using the Theil model, we analyze the transportation sector CO2 emissions intensity trends from countries along the belt and road for the period under observation. The Tapio decoupling model is also conducted to better understand the relationship between the overall and regional CO2 emissions and transportation industry growth for countries along belt and road. Additionally, using ArcGIS, the significant evolving regions of CO2 emission intensity in the transportation sector is visualized, and a series of relevant policy suggestions are put forward. The empirical results indicate that the output value and CO2 emissions of the transportation sector of all the countries along the belt and road increased, however the CO2 emissions intensity showed an overall decline with a polarization trend. This study also found that there are three states of decoupling: weak decoupling, recessive coupling and expansive negative decoupling over the period of analysis. Moreover, by offering different regions along the belt and road decoupling state, this study can provide a reference for governments by proposing carbon-reduction policies and promoting green developments within the transportation sector. (C) 2020 Elsevier Ltd. All rights reserved.

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语言: English 文献类型: Article

作者关键词: Transportation sector; CO2 emission; Decoupling analysis; The belt and

road

**KeyWords Plus:** POLLUTION-ABATEMENT COSTS; CARBON-DIOXIDE EMISSION; ECONOMIC-GROWTH; ENERGY-CONSUMPTION; DRIVING FACTORS; PAPER-INDUSTRY; CHINA BELT; SECTOR; DECOMPOSITION; PULP

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### 第 22 条, 共 36 条

标题: The Impact of Logistics Infrastructure Development in China on the Promotion of Sino-Korea Trade: The Case of Inland Port under the Belt and Road Initiative

作者: Wang, C (Wang, Chao); Chu, WL (Chu, Weilong); Kim, CY (Kim, Chi Yeol)

来源出版物: JOURNAL OF KOREA

TRADE 卷: 24 期: 2 页: 68-82 **DOI**: 10.35611/jkt.2020.24.2.68 出版年: APR 2020

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使用次数 (最近 180 天): 11 使用次数 (2013 年至今): 18

引用的参考文献数:58

摘要: Purpose - This study investigates the impact of inland port development in China on the promotion of bilateral trade flows between China and South Korea.

Design/methodology - The probable association between the establishment of inland ports and Sino-Korea trade was estimated using gravity models. In this regards, two sets of data were collected. The first dataset consists of the baseline variables of a gravity model, while the second one includes variables of logistics infrastructure development. The indicators of logistics infrastructure development include inland ports, the amount of government expenditure on transport infrastructure, the lengths of roads and railways, the number of trucks and the number of logistics industry workforce.

Findings - The results show that inland port development has a positive impact on facilitating bilateral trade between China and South Korea. However, the positive association holds only for Chinese regions with a large trade volume and a proximity to seaports. In other regions, the impact of inland ports is not statistically significant. Originality/value - To the best knowledge of the authors, this study is the first attempt to explore the economic impact of inland ports in China. In addition, the findings in this paper provide both policy and managerial implications for the future development of inland ports, such as the strategic location of inland ports and integrated intermodal operations.

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语言: English 文献类型: Article

作者关键词: Gravity Model; Inland Port; Logistics Infrastructure; Sino-Korea Trade

**KeyWords Plus:** DRY PORT; TRANSPORTATION COSTS;

ECONOMIC-DEVELOPMENT; INTERNATIONAL-TRADE; GROWTH;

INVESTMENT; GOVERNANCE; GEOGRAPHY; EVOLUTION; DYNAMICS

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### 第 23 条, 共 36 条

标题: The impact of intelligent transportation points system based on Elo rating on emergence of cooperation at Y intersection

作者: Wang, YJ (Wang, Yongjie); Yao, ZZ (Yao, Zhouzhou); Wang, C (Wang, Chao); Ren, JL (Ren, Jiale); Chen, Q (Chen, Qiao)

来源出版物: APPLIED MATHEMATICS AND COMPUTATION 卷: 370 文献

号: 124923 **DOI**: 10.1016/j.amc.2019.124923 出版年: APR 1 2020

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使用次数 (最近 180 天): 5 使用次数 (2013 年至今): 46

引用的参考文献数:53

摘要: The construction of intelligent transportation system is of great benefit to the efficiency, safety and fairness of urban residents' travel. This paper focuses on a passing dilemma at Y intersection. An intelligent transportation points system (ITPS) based on Elo rating system is proposed to attempt to solve this dilemma. The drivers in the simulation system are given reinforcement learning ability based on Q-learning algorithm, by evaluating the benefits of each behavior. The conclusions are summarized as follows. For pure selfish drivers group, the application of ITPS has little impact on cooperation. For heterogeneous drivers group, the cooperation probability and passing efficiency of drivers can be improved by the regulation of the ITPS. Meantime, the fairness between drivers could be also maintained. It means that the application of ITPS can achieve the unity of fairness and efficiency. From a long-term perspective, the establishment of the ITPS will be a strong guarantee for the reciprocity of the travelers' efficiency and fairness. Therefore, this study is conducive to the future construction of more perfect urban traffic intelligent system. (C) 2019 Elsevier Inc. All rights reserved.

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语言: English 文献类型: Article

作者关键词: Cooperation; ITPS; Elo rating; Q-learning; Agent-based model; Traffic order management

**KeyWords Plus:** PATH DEPENDENCE; ROAD NETWORKS; CAR USE; EVOLUTION; GAME; STRATEGY; MODEL; POPULATIONS; RECIPROCITY; FRAMEWORK

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# 第 24 条, 共 36 条

标题: Do Public-Private Partnerships Improve the Operational Efficiency of Infrastructure in Mainland China?

作者: Xu, HC (Xu, Haicheng); Wei, X (Wei, Xiao); Wang, B (Wang, Bo); Cheng, Y

(Cheng, Yan); Wang, YJ (Wang, Yijiao)

来源出版物: ADVANCES IN CIVIL ENGINEERING 卷: 2020 文献号: 8885308 **DOI**: 10.1155/2020/8885308 出版年: NOV 19 2020

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摘要: Public-private partnerships (PPPs) are widely used to achieve sustainable infrastructure provision. The purpose of this research is to monitor the effects of PPPs in practice. This study calculated the operational efficiency of toll roads in Mainland China and examined the effect of the transformation from government operations to concession on their operational efficiency. The results showed that toll road operations were inefficient in terms of cost savings and that there were significant regional differences in the impact of concession on operational efficiency among three regions. Concession played a positive role in improving the operational efficiency in the eastern region; on the contrary, the influence was significantly negative in the western region. The effect on the central region was not significant. The results indicated that the efficiency advantages of concession were not given full play. The governments of economies in transition should pay more attention to the implementation environment of PPPs to make infrastructure

operations more sustainable.

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语言: English 文献类型: Article

KeyWords Plus: CRITICAL SUCCESS FACTORS; TRADITIONAL

PROCUREMENT; PERFORMANCE; PPPS

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### 第 25 条, 共 36 条

标题: Green dynamic capability of construction enterprises: Role of the business model and green production

作者: Zhang, JX (Zhang, Jingxiao); Ouyang, Y (Ouyang, You); Philbin, SP (Philbin, Simon P.); Zhao, XJ (Zhao, Xiaojing); Ballesteros-Perez, P (Ballesteros-Perez, Pablo); Li, H (Li, Hui)

来源出版物: CORPORATE SOCIAL RESPONSIBILITY AND ENVIRONMENTAL MANAGEMENT 卷: 27 期: 6页: 2920-2940 **DOI**: 10.1002/csr.2012 提前访问日期: AUG 2020 出版年: NOV 2020

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摘要: Improving green dynamic capability is an important business strategy to enhance enterprises' competitive advantage. This study proposes a theoretical framework that considers the business model and green production to analyze how green dynamic capability can be fostered by enterprises. In this study, 202 managers of Chinese construction enterprises were questionnaire surveyed, and partial least squares structural equation modelling was used to test hypotheses. Results show that: (a) the business model is positively related to green dynamic capability, so enterprises need to adjust business model to balance economic benefits and environmental responsibility; and (b) green production directly and indirectly affect green dynamic capability through a positive mediating role of the business model. This study extends the current literature on dynamic capability by investigating the relationship between the business model, green production, and green dynamic capability. This study also provides guidance for enterprises to enhance green dynamic capability and promote sustainable development.

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语言: English 文献类型: Article

作者关键词: business model; green dynamic capability; green production; structural equation model

**KeyWords Plus:** CORPORATE SOCIAL-RESPONSIBILITY; END-OF-PIPE; CLEANER PRODUCTION; PLS-SEM; SUSTAINABLE INNOVATION; MANUFACTURING FIRMS; DECISION-MAKING; MANAGEMENT; DETERMINANTS; PERFORMANCE

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### 第 26 条, 共 36 条

标题: Measuring the capacity utilization of China's transportation industry under environmental constraints

作者: Zhang, JX (Zhang, Jingxiao); Cai, WY (Cai, Wenyi); Philbin, SP (Philbin, Simon P.); Li, H (Li, Hui); Lu, QC (Lu, Qing-Chang); Ballesteros-Perez, P (Ballesteros-Perez, Pablo); Yang, GL (Yang, Guo-liang)

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引用的参考文献数:63

摘要: The transportation industry is challenged by the need for capacity optimization, energy saving and decreasing emissions. Improving our understanding of capacity utilization is important for achieving a strong transportation system. This article analyzes the relationship between carbon dioxide emissions and final energy consumption in the transportation industry. The capacity utilization of China's transportation industry in the period 2011-2017 is explored by two improved DEA-based difference methods. They assess the status quo of China's capacity utilization and explores effective mechanisms to increase it. In addition, the rationale and accuracy of both measurement models are analyzed. Results show that: (1) the relationship between CO2 emissions and final energy consumption can be taken advantage of to improve the accuracy of capacity utilization measurements. (2) China's transportation industry has suffered from the underutilization of capacity, especially in the past three years. (3) Regional differences in capacity utilization are significant, being Southwestern China the region that has most seriously underutilized its capacity. (4) Promoting transportation technology innovation and more rational transportation resources planning are two key mechanisms to improve capacity utilization. This paper broadens our research knowledge of the transportation industry by proposing new measurement approaches for capacity utilization. These can be used to

implement more effective and targeted policies, better allocate production resources, and closely monitor capacity utilization.

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语言: English 文献类型: Article

作者关键词: Transportation industry; Capacity utilization; Environmental constraints

KeyWords Plus: CO2 EMISSIONS; EFFICIENCY ANALYSIS;

ENERGY-CONSUMPTION; SECTORS; DECOMPOSITION; PRODUCTIVITY; SYSTEMS; IMPACT; COSTS; MODEL

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### 第 27 条, 共 36 条

标题: The impact of environmental regulations on urban Green innovation efficiency:

The case of Xi'an

作者: Zhang, JX (Zhang, Jingxiao); Kang, L (Kang, Le); Li, H (Li, Hui);

Ballesteros-Perez, P (Ballesteros-Perez, Pablo); Skitmore, M (Skitmore, Martin); Zuo, J (Zuo, Jian)

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摘要: While balancing economic progress and environmental pollution, environmental regulation plays a vital role conditioning green innovation. However, most research focuses on the effect of such regulations at the industry-or regional-level, lacking city-level analysis. Using the city of Xi'an (China) as a case study, environmental regulations and their effect on urban green innovation are analysed. First, using a slacks-based measure of directional distance functions (SBM-DDF) model we measure the green innovation efficiency of Xi'an from 2003 to 2016. Regression analysis is then used to explore the green innovation effect under the implementation of three environmental regulations, including command-and-control, market-based, and voluntary. Results indicate that market-based and voluntary regulations are more efficient at stimulating green innovation than command-and-control environmental regulations. The environmental regulations and green innovation efficiency also have non-linear inverted U-shape relationships. The findings will help policy makers to design more effective environmental regulations.

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语言: English 文献类型: Article

作者关键词: Environmental regulation; Urban green innovation efficiency; SBM-DDF

model; Undesirable output; Regression analysis

**KeyWords Plus:** POLICY INSTRUMENTS; TECHNOLOGY INNOVATION;

UNDESIRABLE OUTPUTS; PRODUCTIVITY; ENERGY; MODEL;

COMPETITIVENESS; EMISSIONS; PROJECTS; BEHAVIOR

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### 第 28 条, 共 36 条

标题: Simulation analysis of incentives on employees' acceptance of foreign joint venture management practices: a case study

作者: Zhang, JX (Zhang, Jingxiao); Ouyang, Y (Ouyang, You); Li, H (Li, Hui); Ballesteros-Perez, P (Ballesteros-Perez, Pablo); Skitmore, M (Skitmore, Martin)

来源出版物: ENGINEERING CONSTRUCTION AND ARCHITECTURAL

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摘要: Purpose Cultural differences between employees of different nationalities are hindering the development of some transnational joint ventures. Describing and modelling the positive (or negative) factors that cause joint venture employees to accept (or reject) joint management business practices is of great value to all corporations operating abroad with locally sourced employees. Design/methodology/approach This study uses a Sino-Japan construction joint venture project as a representative case study. First, structural equation modelling is used to identify the factors influencing Chinese employees' acceptance of joint venture management practices. Then, a system dynamics model is adopted to simulate the time-dependent effects of the incentives. Findings The study results (1) indicate which incentives strongly affect employee acceptance of joint venture management practices; (2) identify inefficient management practices in cross-cultural joint ventures; and (3) provide evidence that the employees' perceptions of clear purpose, good working relationships and helpful mechanisms positively and directly also support their acceptance of joint management practices. Originality/value -A dynamic simulation method is used to analyse the influence of various incentive factors on employee acceptance of joint management. This provides unprecedented information regarding how these factors interact with each other, hence how their effectiveness varies (both positively and negatively) over time. Further findings also provide new ideas for joint venture managers to adopt more effective management methods.

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语言: English 文献类型: Article

作者关键词: Management incentives; Joint ventures; Organisation diagnosis; Structural equation model (SEM); System dynamics (SD)

**KeyWords Plus:** SYSTEM DYNAMICS; ORGANIZATIONAL-CHANGE;

MULTILEVEL EXAMINATION; DIVERSITY MANAGEMENT;

TASK-PERFORMANCE; MODERATING ROLE; MEDIATING ROLE; WORK

SYSTEMS; PLS-SEM; CONSTRUCTION

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### 第 29 条, 共 36 条

标题: Internal relationships of market-oriented EFQM enablers in the Chinese construction industry

作者: Zhang, JX (Zhang, Jingxiao); Li, H (Li, Hui); Li, VR (Li, Vera); Xia, B (Xia, Bo); Skitmore, M (Skitmore, Martin)

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摘要: Purpose Service-oriented innovation economies are becoming the new trend for the

construction industry. Benchmarking the quality management level of developed countries and improving quality management are also becoming necessities for promoting innovation in the economy. The purpose of this study is to analyse the internal relationships between the five enablers of the European Foundation for Quality Management (EFQM) Excellence model, based on a market-oriented strategy, to serve as a framework for managing and improving quality. Design/methodology/approach Considering the different market environment and culture, this study refines the strategy enabler based on Zebal and Goodwin's (2011) Developing Country Market Orientation Scale, and builds a market-oriented EFQM Excellence model. Structural equation modelling (SEM) is used to analyse the results of a questionnaire survey of 683 China construction industry top enterprises to explore the internal relationships between the model's five enablers. Findings (1) "Leadership" has a positive influence on "Market-Oriented Strategy", "People" and "Partnerships and Resources"; (2) "Market-Oriented Strategy" has positive influence on "Partnerships and Resources"; (3) "People" has a low influence on "Processes, Products and Services"; (4) "Partnerships and Resources" has a medium influence on "Processes, Products and Services" and (5) the relationships between "Market-Oriented Strategy" and "People", "Partnerships and Resources" are not significant. Originality/value This study refines the strategy enabler of the original EFQM Excellence model with Zebal and Goodwin's (2011) Developing Country Market Orientation Scale. It also develops a market-oriented EFQM Excellence model that is suitable for developing countries, and it tests the implicit relationships of its five new enablers in an innovation environment where cultural differences exist.

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语言: English

文献类型: Article; Early Access

作者关键词: EFQM excellence model; Market-oriented strategy; Service quality; Internal relationships; Construction industry; Structural equation modelling (SEM) **KeyWords Plus:** TOTAL QUALITY MANAGEMENT; EXCELLENCE MODEL;

PERFORMANCE; ORIENTATION; FRAMEWORK

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### 第 30 条, 共 36 条

标题: Measuring the capacity utilization of China's regional construction industries considering undesirable output

作者: Zhang, JX (Zhang, Jingxiao); Cai, WY (Cai, Wenyi); Li, H (Li, Hui); Olanipekun,

AO (Olanipekun, Ayokunle Olubunmi); Skitmore, M (Skitmore, Martin)

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摘要: As most industries in developing countries still follow a relatively rough development model, relying on expansionary investment and paying high environmental costs to promote economic growth, they also face the predicament of excess capacity. Conducting capacity utilization (CU) measurement research is the core of dealing with excess capacity. However, most existing research into capacity utilization is concentrated in the manufacturing, coal, and other industries. The quantitative evaluation of the construction industry capacity utilization is very rare, and the environmental impact factors are neglected.

This study aims to develop a capacity utilization measurement index system and use it for the measurement of the construction industry capacity utilization. In doing this, based on the undesirable output perspective, it establishes a capacity utilization measurement index system that considers energy consumption and undesirable output (CO2) for the measurement of construction industry capacity utilization. Two data envelopment

analysis-based (DEA-based) difference methods (the "no variable-link difference" and the "adding variable-link difference" methods) are used to measure China's construction industry capacity utilization between 2011 and 2017.

The findings indicate that using the adding variable-link difference method is more accurate than the no variable-link difference method. It is also shown that the underutilization of capacity in China's construction industry in 2011-2014 is more serious, but it has improved in the past three years. In addition, with the exception of the Jiangsu and Guangxi provinces, there is underutilization of capacity in the construction industry in other provinces and cities in China.

This study extends the existing knowledge system of capacity utilization, including the evaluation system, measurement, and assessment of capacity utilization, and management implications. Based on the perspective of undesirable outputs, this study lays a foundation for research into the capacity utilization in various industries by considering environmental factors. This study has practical significance for China and other developing countries to establish a nationwide capacity monitoring system. (C) 2019 Elsevier Ltd. All rights reserved.

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语言: English 文献类型: Article

作者关键词: Construction industry; Capacity utilization; Difference method; Undesirable

output

**KeyWords Plus:** ENERGY-CONSUMPTION; BUILDING CONSTRUCTION; EFFICIENCY EVALUATION; ECONOMIC-GROWTH; PRODUCTIVITY; PERFORMANCE; WASTES

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### 第 31 条, 共 36 条

标题: Reliability evaluation index for the integrated supply chain utilising BIM and lean approaches

作者: Zhang, JX (Zhang, Jingxiao); Li, H (Li, Hui); Golizadeh, H (Golizadeh, Hamed);

Zhao, CD (Zhao, Chuandang); Lyu, S (Lyu, Sainan); Jin, RY (Jin, Ruoyu)

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摘要: Purpose This research aims to develop an approach to assess the reliability of integrated construction supply chains via an integrated model of building information modelling (BIM) and the lean supply chain (LSC). It reflects the synergistic workflow between BIM and LSC as a novel approach to improve the reliability of construction projects. Design/methodology/approach This research evaluates the reliability of the BIM-LSC approach through a combination of entropy theory, set pair analysis (SPA), and Markov chains (EESM). An exploratory survey was conducted to collect data from 316 industry professionals experienced in BIM and LSC. Subsequently, multiple cycles of calculations were performed with indirect data inputs. Finally, a reliability evaluation index is established for the BIM-LSC approach and potential applications are identified. Findings The results show that the EESM model of BIM-LSC developed in this study can handle not only supply chain reliability evaluation at a given state but also the prediction of reliability in supply chain state transitions due to changing project conditions. This is particularly relevant to the current environment of the construction project, which is characterised by an increasing level of complexity in terms of labour, technology, and resource interactions.

Research limitations/implications - Future research could consider the accuracy and validity of the proposed model in real-life scenarios with by considering both quantitative and qualitative data across the entire lifecycle of projects.

Practical implications - The research offers a model to evaluate the reliability of the BIM-LSC approach. The accuracy of BIM supply chain reliability analysis and prediction in an uncertain environment is improved.

Originality/value The BIM-LSC reliability evaluation and prediction presented in this study provides a theoretical foundation to enhance understanding of the BIM-LSC in the construction project context.

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语言: English 文献类型: Article

作者关键词: Building information modelling; Lean supply chain; Reliability evaluation;

Set pair analysis; Markov chain

**KeyWords Plus: MANAGEMENT** 

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### 第 32 条, 共 36 条

标题: Bilevel Optimization for the Hazmat Transportation Problem with Lane Reservation

作者: Zhang, SZ (Zhang, Shengzhong); Hui, QQ (Hui, Qianqian); Bai, X (Bai, Xue);

Sun, RT (Sun, Rongting)

来源出版物: JOURNAL OF ADVANCED TRANSPORTATION 卷: 2020 文献

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摘要: In this study, we investigate a bilevel optimization model for the hazmat transportation problem with lane reservation. The problem lies in selecting lanes to be reserved in the network and planning paths for hazmat transportation tasks. The trade-off among transportation cost, risk, and impact on the normal traffic is considered. By using the traffic flow theory, we quantify the impact on the normal traffic and modify the traditional risk measurement model. The problem is formulated as a multiobjective bilevel programming model involving the selection of reserved lanes for government and planning paths for hazmat carriers. Two hybrid metaheuristic algorithms based on the particle swarm optimization algorithm and the genetic algorithm, respectively, are proposed to solve the bilevel model. Their performance on small-scale instances is compared with exact solutions based on the enumeration method. Finally, the computational results on large-scale instances are compared and sensitivity analysis on the key parameters is presented. The results indicate the following: (1) Both algorithms are effective methods for solving this problem, and the method based on the particle swarm optimization algorithm requires a shorter computation time, whereas the method based on the genetic algorithm shows more advantages in optimality. (2) The bilevel model can effectively reduce the total risk of the hazmat transportation while considering the interests of hazmat carriers and ordinary travellers. (3) The utilization rate of reserved lanes increases with an increasing number of tasks. Nevertheless, once the proportion of hazmat vehicles becomes excessive, the advantage of reducing the risk of the reserved lanes gradually decreases.

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语言: English 文献类型: Article

**KeyWords Plus:** HAZARDOUS MATERIALS TRANSPORTATION; ROUTING PROBLEM; ROAD NETWORK; FRAMEWORK; ALGORITHM; DESIGN; MODEL

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### 第 33 条, 共 36 条

标题: Green Innovation Mode under Carbon Tax and Innovation Subsidy: An Evolutionary Game Analysis for Portfolio Policies

作者: Zhang, SZ (Zhang, Shengzhong); Yu, YM (Yu, Yingmin); Zhu, QH (Zhu,

Qihong); Qiu, CM (Qiu, Chun Martin); Tian, AX (Tian, Aixuan)

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摘要: Previous literature has shown that manufacturers' choices between radical and incremental green innovation modes can greatly impact the tradeoff between industry growth and carbon emission reduction. Yet, how the government can motivate manufacturers to implement radical green innovations to reduce carbon emission is unclear. In this paper, the researchers construct an evolutionary game model to analyze the joint impacts of carbon tax and innovation subsidy on manufacturers' choices of green innovation mode. We derive the conditions for manufacturers' stable strategies. Based on those results, we find that four factors-carbon tax, innovation subsidy, consumer green preference, and manufacturers' capabilities of absorbing and adopting new technologies-may facilitate the choice of radical innovation. Furthermore, we conduct numerical simulations to verify the theoretical results, and further illustrate how the synergy of carbon tax rate and subsidy level affects the evolution of the green innovation mode choices. Specifically, we demonstrate the superiority of portfolio policy in the early stage of green innovation over single policy. In contrast, in the later stage, it is carbon tax

but not innovation subsidy that remains effective. We discuss the insights for the government to formulate appropriate environmental policies to effectively promote the adoption of green innovation and reduce carbon emission.

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作者关键词: green innovation; carbon tax; innovation subsidy; consumer green

preference; evolutionary game

**KeyWords Plus:** RESEARCH-AND-DEVELOPMENT; SUPPLY CHAIN COORDINATION; CUSTOMER PRESSURE; EMISSIONS; TECHNOLOGY; CHINA; SUSTAINABILITY; PERFORMANCE; STRATEGIES; MANAGEMENT

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# 第 34 条, 共 36 条

标题: Financial Leverage, Economic Growth and Environmental Degradation: Evidence from 30 Provinces in China

作者: Zhao, MY (Zhao, Miyun); Yang, R (Yang, Rui); Li, Y (Li, Yi)

来源出版物: INTERNATIONAL JOURNAL OF ENVIRONMENTAL RESEARCH

AND PUBLIC HEALTH 卷: 17 期: 3 文献号: 831 DOI: 10.3390/ijerph17030831 出

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摘要: This study seeks to investigate the endogenous relationship between financial leverage, economic growth and environmental degradation in China by employing a the generalized moments method (GMM) panel vector autoregressive (PVAR) approach with a panel of data from China's 30 provinces over the period 1997-2016. Three key results arise. First, financial leverage can significantly lessen economic growth, while economic growth decreases financial leverage. Second, economic growth provides an important impetus to boost carbon emissions. Finally, carbon emissions have inversely pushed up financial leverage. These results reflect to some extent China's impressive rate of economic growth, which has been attained via continuously supporting inefficient state-owned enterprises and heavy and polluting industries through bank loans. The results are further supported by the variance decomposition. The findings provide valuable policy implications for deepening financial supply-side structure reform to transform and upgrade China's real economy. These policy implications are conductive to developing a low-carbon economy.

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**PubMed ID: 32013117** 

语言: English 文献类型: Article

作者关键词: financial leverage; economic growth; carbon emissions; GMM panel VAR

**KeyWords Plus:** ENERGY-CONSUMPTION; DEVELOPMENT LEAD; MONETARY-POLICY; CO2 EMISSIONS; IMPACT; INCOME; TRADE

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### 第 35 条, 共 36 条

标题: The dilemma of relational embeddedness: mediating roles of influence strategies in managing marketing channel opportunism

作者: Zhou, Y (Zhou, Yin); Yang, W (Yang, Wei); Zhuang, GJ (Zhuang, Guijun)

来源出版物: JOURNAL OF BUSINESS & INDUSTRIAL

MARKETING **DOI**: 10.1108/JBIM-01-2020-0021 提前访问日期: NOV 2020

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摘要: Purpose

The purpose of this study is to develop a better understanding of how relational embeddedness offers marketing channel partners both benefits and hazards. The nonlinear effect of relational embeddedness on channel opportunism is investigated. Influence strategies (i.e. coercive and noncoercive influence) are also examined as mediators of this nonlinear effect.

Design/methodology/approach

Survey data are gathered from a sample of 149 manufacturers in China. The hypotheses are tested through regression analysis.

**Findings** 

The results support the hypothesis that relational embeddedness has a U-shaped effect on opportunism, and that this relationship can be mediated through noncoercive influence strategies. The results also indicate that coercive influence has an inverted U-shaped effect and noncoercive influence has a U-shaped effect on opportunism.

Research limitations/implications

This research serves as a launching point for further investigations into the "black box" of the double-edged effects of relational embeddedness. Other channel behavior constructs can be explored in future studies.

**Practical implications** 

Firms should be aware of the benefits and pitfalls associated with relational embeddedness in marketing channels. They should be alert to using influence strategies when managing channel opportunism.

Originality/value

This study addresses the dilemma of embeddedness in marketing channel relationships

and reveals its causes and mechanisms by exploring the mediating effects of influence strategies.

入藏号: WOS:000590883000001

语言: English

文献类型: Article; Early Access

作者关键词: Opportunism; Influence strategies; Relational embeddedness; Coercive

influence; Noncoercive influence

**KeyWords Plus:** BUYER-SUPPLIER RELATIONSHIPS; DARK-SIDE; INTERFIRM RELATIONSHIPS; INTERORGANIZATIONAL RELATIONSHIPS; RELATIONSHIP COMMITMENT; EXCHANGE HAZARDS; POWER; PERFORMANCE;

**DEPENDENCE**; TRUST

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### 第 36 条, 共 36 条

标题: An integrated framework to prioritize blockchain-based supply chain success factors

作者: Shoaib, M (Shoaib, Muhammad); Lim, MK (Lim, Ming K.); Wang, C (Wang, Chao)

来源出版物: INDUSTRIAL MANAGEMENT & DATA

SYSTEMS 卷: 120 期: 11 页: 2103-2131 DOI: 10.1108/IMDS-04-2020-0194 提前访

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摘要: Purpose The purpose of this study is to identify and prioritize the factors that can positively influence the implementation of a blockchain-based supply chain via an integrated framework. To the best of the authors' knowledge, no previous study has focused on prioritizing these factors. Design/methodology/approach First, this study conducts a multivocal literature review, and a total of 48 success factors (SFs) are identified and mapped into 11 categories. Second, the identified success factors and their categories are further validated by industry practitioners using a questionnaire survey approach. Finally, this study applies an analytical hierarchy process to prioritize the identified SFs and their categories and to assess their importance for successful blockchain implementation in the supply chain management process. Findings The "Accessibility" category has the highest importance, and the "Overall efficiency" category has the second highest rank. As far as the success factors are concerned, "Trackability" and "Traceability" are considered to be the prime success factors of a blockchain-based supply chain. The taxonomy of the categories and their success factors provide an outline for supply chain organizations to establish a strategy to implement blockchain technology. Practical implications This technology can be practically applied in a sustainable supply chain. Another vital application of this blockchain technology is in banking and finance because of the blockchain's immutable data recording property. Originality/value To the best of the authors' knowledge, there is no previous study focused on building a taxonomic model that allows supply chain organizations to compare this paper's model with existing models and outline the necessary actions to improve supply chain activities. The questionnaire-based survey developed to validate the success factors in real-world practices and the factors' prioritization can help academic researchers and industrial practitioners to set their strategic goals accordingly.

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语言: English 文献类型: Article

作者关键词: Blockchain; Supply chain management; Success factors; Analytic hierarchy process

**KeyWords Plus:** HEALTH-SCIENCES; GREY LITERATURE; INDUSTRY 4.0; MANAGEMENT; REVIEWS; TRACEABILITY; BARRIERS

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#### 汽车学院

### 第 1 条, 共 36 条

标题: Exploring Factors Affecting the Yellow-Light Running Behavior of Electric Bike Riders at Urban Intersections in China

作者: Cai, J (Cai, Jing); Zhao, JY (Zhao, Jianyou); Liu, J (Liu, Jing); Shen, K (Shen, Ke); Li, X (Li, Xun); Ye, YT (Ye, Yuntao)

来源出版物: JOURNAL OF ADVANCED TRANSPORTATION 卷: 2020 文献

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摘要: Electric bikes play an important role in the urban transportation system in China. Yellow-light running behavior of riders is one of the most critical factors for e-bike riders involved in traffic crashes at intersection. The main purpose of this study is to explore how a variety of factors affect e-bike riders' yellow-light running behaviors at intersection by a field observation conducted in Xi'an, China. Based on 396 e-bike riders who faced yellow-light samples, two analytical methods, the principle component analysis logistics model and a base logistics model, were employed to evaluate the impacts of contributing

factors on e-bike riders' yellow-light running behavior. The modeling results showed that seven variables significantly affect the e-bike riders' yellow-light running behavior, which were the approaching speed of e-bike, the distance to stop line, riders' age and gender attributes, type of e-bike, and the characteristics of intersection including the width of intersection and the existence of physical barriers. This study can provide valuable insights into understanding e-bike riders' yellow-light running behavior and may also help decision makers propose countermeasures to reduce e-bike rider-related crashes at intersection.

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语言: English 文献类型: Article

**KeyWords Plus:** CHARACTERIZING DRIVER BEHAVIOR; RISK-TAKING BEHAVIORS; SIGNALIZED INTERSECTION; PRINCIPAL-COMPONENTS; LOGISTIC-REGRESSION; TRAFFIC ANALYSIS; FLASHING GREEN; DILEMMA ZONE; CYCLISTS; MOTORCYCLISTS

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### 第 2 条, 共 36 条

标题: Mobile Phone Use in a Car-Following Situation: Impact on Time Headway and Effectiveness of Driver's Rear-End Risk Compensation Behavior via a Driving Simulator Study

作者: Chen, YX (Chen, Yunxing); Fu, R (Fu, Rui); Xu, QJ (Xu, Qingjin); Yuan, W

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来源出版物: INTERNATIONAL JOURNAL OF ENVIRONMENTAL RESEARCH AND PUBLIC HEALTH 卷: 17 期: 4 文献号: 1328 DOI: 10.3390/ijerph17041328 出

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引用的参考文献数:50

摘要: Mobile phone use while driving has become one of the leading causes of traffic accidents and poses a significant threat to public health. This study investigated the impact of speech-based texting and handheld texting (two difficulty levels in each task) on car-following performance in terms of time headway and collision avoidance capability; and further examined the relationship between time headway increase strategy and the corresponding accident frequency. Fifty-three participants completed the car-following experiment in a driving simulator. A Generalized Estimating Equation method was applied to develop the linear regression model for time headway and the binary logistic regression model for accident probability. The results of the model for time headway indicated that drivers adopted compensation behavior to offset the increased workload by increasing their time headway by 0.41 and 0.59 s while conducting speech-based texting and handheld texting, respectively. The model results for the rear-end accident probability showed that the accident probability increased by 2.34 and 3.56 times, respectively, during the use of speech-based texting and handheld texting tasks. Additionally, the greater the deceleration of the lead vehicle, the higher the probability of a rear-end accident. Further, the relationship between time headway increase patterns and the corresponding accident frequencies showed that all drivers' compensation behaviors were different, and only a few drivers increased their time headway by 60% or more, which could completely offset the increased accident risk associated with mobile phone distraction. The findings provide a theoretical reference for the formulation of traffic regulations related to mobile phone use, driver safety education programs, and road safety public awareness campaigns. Moreover, the developed accident risk models may contribute to the development of a driving safety warning system.

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PubMed ID: 32092914

语言: English 文献类型: Article

作者关键词: distraction; speech-based texting; handheld texting; time headway; rear-end accident probability; compensation behavior

KeyWords Plus: DISTRACTION; PREVALENCE; SPEED

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### 第 3 条, 共 36 条

标题: Factors Influencing the User Acceptance of Automated Vehicles Based on Vehicle-Road Collaboration

作者: Deng, MY (Deng, Mingyang); Guo, YS (Guo, Yingshi); Fu, R (Fu, Rui); Wang, C (Wang, Chang)

来源出版物: IEEE

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摘要: The development of smart highway and vehicle-road collaboration has stimulated the market applications of automated vehicles. However, consumer acceptance of automated vehicles will influence the time course of automated driving technology promotion. This research explores user acceptance and demand for automated vehicles based on vehicle-road collaboration and identifies which factors drive the acceptance of automated vehicles. A sample of 3900 questionnaires are obtained through classification sampling. The descriptive statistical analysis of 3594 effective multi-source sample data shows that the user acceptance of automated vehicles based on the vehicle-road collaborative environment is 70.94%. The results show that the five categories of groups have significant differences in the acceptance of automated vehicles, and the focus on individual variables is higher than the overall acceptance. Due to the contradiction and

dependence among various variables, multiple regression analysis is introduced. The results show that the six variables of safety, practicability, economy, highly automated driving functions, vehicle-road collaborative fusion application, and after-sale service have a significant positive impact on the acceptance of automated vehicles. The reasons why these six factors affect user acceptance are then analyzed in depth. The fitting model and acceptance value range obtained by this research can be used for market research. The research findings provide data support and theoretical reference for the research and development, marketing, teaching, and servicing of autonomous driving technology.

入藏号: WOS:000554372400001

语言: English 文献类型: Article

作者关键词: Autonomous vehicles; Collaboration; Roads; Automobiles; Law; Automated vehicles; vehicle-road collaboration; acceptance; market research; regression analysis

KevWords Plus: TECHNOLOGY; INTENTION; TRUST

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# 第 4 条, 共 36 条

标题: A Comparative Study of Accident Risk Related to Speech-Based and Handheld Texting during a Sudden Braking Event in Urban Road Environments

作者: Fu, R (Fu, Rui); Chen, YX (Chen, Yunxing); Xu, QJ (Xu, Qingjin); Guo, YX (Guo, Yuxi); Yuan, W (Yuan, Wei)

来源出版物: INTERNATIONAL JOURNAL OF ENVIRONMENTAL RESEARCH

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使用次数 (最近 180 天): 3 使用次数 (2013 年至今): 3

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摘要: The use of mobile phones while driving is a very common phenomenon that has become one of the main causes of traffic accidents. Many studies on the effects of mobile phone use on accident risk have focused on conversation and texting; however, few studies have directly compared the impacts of speech-based texting and handheld texting on accident risk, especially during sudden braking events. This study aims to statistically model and quantify the effects of potential factors on accident risk associated with a sudden braking event in terms of the driving behavior characteristics of young drivers, the behavior of the lead vehicle (LV), and mobile phone distraction tasks (i.e., both speech-based and handheld texting). For this purpose, a total of fifty-five licensed young drivers completed a driving simulator experiment in a Chinese urban road environment under five driving conditions: baseline (no phone use), simple speech-based texting, complex speech-based texting, simple handheld texting, and complex handheld texting. Generalized linear mixed models were developed for the brake reaction time and rear-end accident probability during the sudden braking events. The results showed that handheld texting tasks led to a delayed response to the sudden braking events as compared to the baseline. However, speech-based texting tasks did not slow down the response. Moreover, drivers responded faster when the initial time headway was shorter, when the initial speed was higher, or when the LV deceleration rate was greater. The rear-end accident probability respectively increased by 2.41 and 2.77 times in the presence of simple and complex handheld texting while driving. Surprisingly, the effects of speech-based texting tasks were not significant, but the accident risk increased if drivers drove the vehicle with a shorter initial time headway or a higher LV deceleration rate. In summary, these findings suggest that the effects of mobile phone distraction tasks, driving behavior characteristics, and the behavior of the LV should be taken into consideration when developing algorithms for forward collision warning systems.

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**PubMed ID: 32781529** 

语言: English 文献类型: Article

作者关键词: speech-based texting; handheld texting; brake reaction time; rear-end accident probability; driving behavior characteristics; lead vehicle deceleration rate **KeyWords Plus:** MOBILE PHONE USE; CRASH RISK; COLLISION; DRIVERS; VEHICLE; BEHAVIOR; TIME; INTERSECTIONS; DISTRACTION; PREDICTION 地址: [Fu, Rui; Chen, Yunxing; Xu, Qingjin; Guo, Yuxi; Yuan, Wei] Changan Univ, Sch Automobile, Xian 710064, Peoples R China.

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### 第 5 条, 共 36 条

标题: Research on the Influence of Vehicle Speed on Safety Warning Algorithm: A Lane Change Warning System Case Study

作者: Fu, R (Fu, Rui); Zhang, YL (Zhang, Yali); Wang, C (Wang, Chang); Yuan, W (Yuan, Wei); Guo, YS (Guo, Yingshi); Ma, Y (Ma, Yong)

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摘要: Speed has an important impact on driving safety, however, this factor is not included in existing safety warning algorithms. This study uses lane change systems to study the influence of vehicle speed on safety warning algorithms, aiming to determine lane change warning rules for different speeds (DS-LCW). Thirty-five drivers are recruited to carry out an extreme trial and naturalistic driving experiment. The vehicle speed, relative speed, relative distance, and minimum safety deceleration (MSD) related to lane change characteristics are then analyzed and calculated as warning rule characterization parameters. Lane change warning rules for a rear vehicle in the target lane under four-speed levels of  $60 \le v \le 70 \text{ km/h}$ ,  $70 \le v \le 80 \text{ km/h}$ ,  $80 \le v \le 90 \text{ km/h}$ , and  $v \le v \le 90 \text{ km/h}$ , and  $v \le v \le 90 \text{ km/h}$ , and  $v \le v \le 90 \text{ km/h}$ , and  $v \le v \le 90 \text{ km/h}$ .

are established. The accuracy of lane change warning rules not considering speed level (NDS-LCW) and ISO 17387 are found to be 87.5% and 79.8%, respectively.

Comparatively, the accuracy rate of DS-LCW under four-speed levels is 94.6%, 93.8%, 90.0%, and 92.6%, respectively, which is significantly superior. The algorithm proposed in this paper provides warning in the lane change process with a smaller relative distance, and the accuracy rate of DS-LCW is significantly superior to NDS-LCW and ISO 17387.

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语言: English 文献类型: Article

作者关键词: different speed; minimum safety deceleration; naturalistic driving; lane

change warning system; comparative verification

**KeyWords Plus:** DRIVER ASSISTANCE SYSTEMS; INFORMATION; HIGHWAYS; LIMITS

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#### 第 6 条, 共 36 条

标题: Accelerated Failure Time Model to Explore the Perception Response Times of Drivers in Simulated Car-Following Scenarios

作者: Guo, YS (Guo, Yingshi); Zhang, Z (Zhang, Zhi); Yuan, W (Yuan, Wei); Wang, C

(Wang, Chang); Wu, FW (Wu, Fuwei); Liu, ZF (Liu, Zhuofan)

来源出版物: JOURNAL OF ADVANCED TRANSPORTATION 卷: 2020 文献

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摘要: In the development of effective rear-end collision alarm systems, understanding the factors that influence the perception response times (PRT) of drivers is important for the design of a reasonable lead time for the warning (or intervention) of likely collisions. Previous studies have proposed different approaches for examining the impact of situational or individual factors on the PRT of drivers. However, unobserved heterogeneity has not been considered and neither has a duration-modeling approach been used, resulting in a lack of accurate estimation. The purpose of the present study was to explore the effect of the driving situation and individual differences on the PRT of drivers while also considering unobserved heterogeneity. A total of 101 participants were exposed to different levels of secondarily cognitive load and situational urgency in simulated d scenarios. Several accelerated failure time (AFT) duration models, both with and without heterogeneity, were developed to model the PRT of drivers, while factors related to driving situation and individual differences were incorporated. The results indicate that influential factors include age, working memory capacity (WMC), cognitive load, and initial time headway exerted significant effects on the PRT of drivers. The hazard rate changed by 14.4%, 22.6%, and 7.5% when age, cognitive load, and initial time headway changed by one unit, respectively. Furthermore, the hazard rate decreases by more than 20% for individuals with higher WMC compared with baseline individuals. These results suggest that the AFT model that considers unobserved heterogeneity can provide a more accurate estimation of the PRT compared to other duration models. These findings can be expected to provide a further understanding of drivers' braking behaviors, which will contribute to the development of advanced driving assistant systems as well as safety assessments of in-vehicle information and communication technologies.

入藏号: WOS:000559283000003

语言: English 文献类型: Article

**KeyWords Plus:** WORKING-MEMORY CAPACITY; INDIVIDUAL-DIFFERENCES;

DISTRACTION; ATTENTION; YOUNG

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### 第 7 条, 共 36 条

标题: Traffic assignment problem under tradable credit scheme in a bi-modal stochastic transportation network: A cumulative prospect theory approach

作者: Han, F (Han, Fei); Zhao, XM (Zhao, Xiang-mo); Cheng, L (Cheng, Lin)

来源出版物: JOURNAL OF CENTRAL SOUTH

UNIVERSITY 卷: 27 期: 1 页: 180-197 DOI: 10.1007/s11771-020-4287-0 出版

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摘要: The traffic equilibrium assignment problem under tradable credit scheme (TCS) in a bi-modal stochastic transportation network is investigated in this paper. To describe traveler's risk-taking behaviors under uncertainty, the cumulative prospect theory (CPT) is adopted. Travelers are assumed to choose the paths with the minimum perceived generalized path costs, consisting of time prospect value (PV) and monetary cost. At equilibrium with a given TCS, the endogenous reference points and credit price remain constant, and are consistent with the equilibrium flow pattern and the corresponding travel time distributions of road sub-network. To describe such an equilibrium state, the CPT-based stochastic user equilibrium (SUE) conditions can be formulated under TCS. An equivalent variational inequality (VI) model embedding a parameterized fixed point (FP) model is then established, with its properties analyzed theoretically. A heuristic solution algorithm is developed to solve the model, which contains two-layer iterations. The outer iteration is a bisection-based contraction method to find the equilibrium credit price, and the inner iteration is essentially the method of successive averages (MSA) to determine the corresponding CPT-based SUE network flow pattern. Numerical experiments are provided to validate the model and algorithm.

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语言: English 文献类型: Article

作者关键词: tradable credit scheme; cumulative prospect theory; endogenous reference points; generalized path costs; stochastic user equilibrium; variational inequality model; heuristic solution algorithm

**KeyWords Plus:** CONGESTION MANAGEMENT; TRAVEL; MODEL; PERMITS; DESIGN; POINT

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# 第8条,共36条

标题: Driver behaviour and traffic accident involvement among professional urban bus drivers in China

作者: Han, WL (Han, Wanli); Zhao, JY (Zhao, Jianyou)

来源出版物: TRANSPORTATION RESEARCH PART F-TRAFFIC PSYCHOLOGY AND BEHAVIOUR 卷: 74 页: 184-197 DOI: 10.1016/j.trf.2020.08.007 出版年: OCT 2020

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摘要: The present research aimed to investigate specific behaviors of professional urban bus drivers in China with the revised Driver Behavior Questionnaire (DBQ), and to define the relationships among various driving behaviors (errors, positives, inattention errors, violations), background information (age, years of driving experience, mobility, etc.), self-assessment, and traffic accident. To achieve such goals, the present research designed a four-dimensional DBQ with 20 items for professional urban bus drivers in China. The KMO coefficient of the whole scale was 0.835, and Bartlett's test was statistically significant (p < 0.000), which demonstrated strong validity of the scale and should be suitable for factor analysis. The four loading factors accounted for 58.991%. In addition, the reliability and effectiveness of the present 20-item scales were measured. The coefficient of internal consistency-Cronbach's alpha coefficient was 0.881 and the Cronbach's Alpha Based on Standardized Items was 0.911. This showed that driving behavior scale of professional bus drivers in China was of high reliability and validity. The analysis showed that among the four factors, positive driving behaviors were significantly associated with errors, inattention errors and violations, respectively. Errors,

inattention errors and violations correlated positively with each other. This verified that the correlation coefficient of each factor was medium and high, which indicated that the scale had good difference validity. The test content of the total scale was also highly consistent with the test content of each factor, which indicated that the revised scale had good standard related validity. According to the accident prediction model, the variables that significantly affected the occurrence of traffic accidents were daily driving time, positive driving behavior, SE2 (Driving safety), SE3 (Aberrant driver behaviors). The results showed that professional bus drivers often working overtime were most likely to have accidents. The probability of traffic accidents decreased by 53% for every unit of positive driving behavior frequency of professional bus drivers. The more they felt that they had the tendency of aberrant driving behavior, the more likely they were to have traffic accidents. To summary, the present research contributed to validating and improving the DBQ for professional urban drivers in China. (C) 2020 Elsevier Ltd. All rights reserved.

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语言: English 文献类型: Article

作者关键词: Driver Behavior Questionnaire (DBQ); Positive driving behaviors;

Urban buses; Professional drivers; China

KeyWords Plus: ABERRANT DRIVING BEHAVIORS; CRASH

INVOLVEMENT; PERSONALITY; VIOLATIONS; ERRORS; RISKY;

QUESTIONNAIRE; VALIDATION; ATTITUDES; CLIMATE

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第 9 条, 共 36 条

标题: Estimation of Regional Economic Development Indicator from Transportation Network Analytics

作者: Li, B (Li, Bin); Gao, S (Gao, Song); Liang, YL (Liang, Yunlei); Kang, YH (Kang, Yuhao); Prestby, T (Prestby, Timothy); Gao, YQ (Gao, Yuqi); Xiao, RM (Xiao, Runmou)

来源出版物: SCIENTIFIC REPORTS 卷: 10 期: 1 文献

号: 2647 DOI: 10.1038/s41598-020-59505-2 出版年: FEB 14 2020

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使用次数 (最近 180 天): 7 使用次数 (2013 年至今): 10

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摘要: With the booming economy in China, many researches have pointed out that the improvement of regional transportation infrastructure among other factors had an important effect on economic growth. Utilizing a large-scale dataset which includes 3.5 billion entry and exit records of vehicles along highways generated from toll collection systems, we attempt to establish the relevance of mid-distance land transport patterns to regional economic status through transportation network analyses. We apply standard measurements of complex networks to analyze the highway transportation networks. A set of traffic flow features are computed and correlated to the regional economic development indicator. The multi-linear regression models explain about 89% to 96% of the variation of cities' GDP across three provinces in China. We then fit gravity models using annual traffic volumes of cars, buses, and freight trucks between pairs of cities for each province separately as well as for the whole dataset. We find the temporal changes of distance-decay effects on spatial interactions between cities in transportation networks, which link to the economic development patterns of each province. We conclude that transportation big data reveal the status of regional economic development and contain valuable information of human mobility, production linkages, and logistics for regional management and planning. Our research offers insights into the investigation of regional economic development status using highway transportation big data.

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语言: English 文献类型: Article

KeyWords Plus: URBAN TRAFFIC-FLOW; HIGH-SPEED RAIL; CHINA;

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PATTERNS; MOBILITY

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# 第 10 条, 共 36 条

标题: Multimode Traffic Travel Behavior Characteristics Analysis and Congestion Governance Research

作者: Li, W (Li, Wen); Feng, W (Feng, Wei); Yuan, HZ (Yuan, Hua-zhi)

来源出版物: JOURNAL OF ADVANCED TRANSPORTATION 卷: 2020 文献

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摘要: The rapid aggregation of modern urban population and the rapid growth of car travel lead to traffic congestion, environmental pollution, and other problems. In view of the limited land resources in our country, it is impractical to meet residents' travel demand by blindly increasing traffic supply. Therefore, addressing the urban road congestion problem for sustainable development of modern cities, the paper makes research on residents' travel behavior characteristics and travel preference under the condition of multimodal transportation to formulate reasonable traffic demand management strategy for the guide on public traffic demand, bus priority strategy, and congestion management. The operation characteristic of each transportation mode is analyzed by comparing its related traffic and economic characteristics. Multimode traffic choice behavior is discussed by establishing multiple logistic regression models to analyze the main influencing factors to travelers' social and economic attributes, travel characteristics, and preference based on travel survey data of urban residents. The paper proposes the development of an urban public transportation system and travelling mode shift from cars

to public transportation as reasonable travel structure for congestion management and sustainable development of modern cities.

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语言: English 文献类型: Article

KeyWords Plus: NATURAL DISASTERS; INFORMATION; MARKET

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### 第 11 条, 共 36 条

标题: What is the difference between perceived and actual risk of distracted driving? A field study on a real highway

作者: Li, Z (Li, Zhen); Wang, C (Wang, Chang); Fu, R (Fu, Rui); Sun, QY (Sun, Qinyu); Zhang, HJ (Zhang, Hongjia)

来源出版物: PLOS ONE 卷: 15 期: 4 文献

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摘要: Distracted driving is a leading cause of traffic accidents. It is influenced by driver attitude toward secondary tasks; however, field-based studies on the effects of

low-perceived-risk tasks on lateral driving have rarely been reported. A total of 17 experienced non-professional drivers were recruited to participate in two secondary tasks: a cognitive experiment (conversation) and a visual distraction experiment (observation of following vehicles), each representing low-perceived-risk secondary tasks. One-way analysis of variance (ANOVA) was conducted to evaluate the effects of low-perceived-risk tasks on lateral driving performance. ANOVA results indicated that compared with baseline (no task) lateral performance, lane-keeping ability was enhanced during cognitive distractions. In the visual distraction experiment, more than 50% of the distractions required 1-2 s. Lane deviation and its growth rate increased with the duration of distraction. Compared with cognitive distraction, lane deviation increased significantly with visual distraction, and lane-keeping performance was seriously impaired. For low-perceived-risk tasks, visual distractions impaired driving safety more seriously, compared with cognitive distractions, suggesting that drivers misjudge the risks associated with visual tasks. These results can contribute to the design of advanced driving-assistance systems and improve professional driver programs, potentially reducing the frequency of traffic accidents caused by distracted driving.

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**PubMed ID: 32240274** 

语言: English 文献类型: Article

**KeyWords Plus:** WORKING-MEMORY CAPACITY; DRIVER DISTRACTION;

COGNITIVE DISTRACTION; EYE-MOVEMENTS; CELL PHONE;

PERFORMANCE; IMPACT; TASK; AGE; METAANALYSIS

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# 第 12 条, 共 36 条

标题: Analysis of Factors Affecting a Driver's Driving Speed Selection in Low Illumination

作者: Liu, J (Liu, Jing); Cai, J (Cai, Jing); Lin, SS (Lin, Shanshan); Zhao, JY (Zhao, Jianyou)

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摘要: To better understand a driver's driving speed selection behaviour in low illumination, a self-designed questionnaire was applied to investigate driving ability in low illumination, and the influencing factors of low-illumination driving speed selection behaviour were discussed from the driver's perspective. The reliability and validity of 243 questionnaires were tested, and multiple linear regression was used to analyse the comprehensive influence of demographic variables, driving speed in a low-illumination environment with street lights and driving ability on speed selection behaviour in low illumination without street lights. Pearson's correlation test showed that there was no correlation among age, education, accidents in the past 3 years, and speed selection behaviour in low illumination, but gender, driving experience, number of night-driving days per week, and average annual mileage were significantly correlated with speed selection behaviour. In a low-illumination environment, driving ability has a significant influence on a driver's speed selection behaviour. Technical driving ability under low-illumination conditions of street lights has the greatest influence on speed selection behaviour on a road with a speed limit of 120 km/h (beta = 0.51). Risk perception ability has a significant negative impact on speed selection behaviour on roads with speed limits of 80 km/h and 120 km/h (beta = -0.25 and beta = -0.34, respectively). Driving speed in night-driving environment with street lights also has a positive influence on speed selection behaviour in low illumination (beta = 0.61; beta = 0.28; beta = 0.37).

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语言: English 文献类型: Article

KeyWords Plus: VEHICLE; MODEL; SAFETY; TIME; RISK

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#### 第 13 条, 共 36 条

标题: Comparison of Car-Following Behavior in Terms of Safety Indicators Between China and Sweden

作者: Liu, T (Liu, Tong); Selpi (Selpi)

来源出版物: IEEE TRANSACTIONS ON INTELLIGENT TRANSPORTATION SYSTEMS 卷: 21 期: 9页: 3696-3705 DOI: 10.1109/TITS.2019.2931797 出版年: SEPT 2020

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摘要: Understanding car-following behavior in different countries is essential for the design and development of autonomous driving and further development of active safety systems that can function well worldwide, in particular, in mixed traffic conditions. However, very few studies exist that compare car-following behaviors in different

countries based on real driving data. This paper analyses the similarities and differences of drivers' car-following behavior, in terms of time gap, gap distance, and time to collision (TTC), using both China and Sweden datasets from real road driving studies, in a bid to identify how these indicators affect drivers' speed control in car-following situations. The results indicate that the highest frequency of gap distance is observed in the same value range in both datasets, while the highest frequency of time gap in the Sweden dataset is found at a lower value range than the corresponding value range in the China dataset. For both datasets, time gap is observed to be a more reliable indicator for car-following analysis than gap distance since it is less sensitive to speed variations. Furthermore, TTC in the low travel speed ranges (v < 50 km/h) tends to be steady in comparison with the TTC at other speed ranges, so the time gap in the high-speed ranges is (v > 90 km/h). Therefore, time gap is recommended as the safety indicator for car-following analysis in high-speed conditions, while a combination of time gap and TTC is recommended for low-speed conditions, especially on urban roads.

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语言: English 文献类型: Article

作者关键词: Safety; Automobiles; Roads; Time measurement; Lead; Velocity control; Car-following; cross-cultural comparison; driving behavior; safety indicator; time gap; time to collision

KeyWords Plus: RISK PERCEPTION; TIME HEADWAY; DRIVER

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# 第 14 条, 共 36 条

标题: The BioChemical Clogging of Landfill Leachate Collection System: Based on

**Laboratory Studies** 

作者: Liu, YL (Liu, Yili); Liu, JG (Liu, Jianguo)

来源出版物: INTERNATIONAL JOURNAL OF ENVIRONMENTAL RESEARCH

AND PUBLIC HEALTH 卷: 17 期: 7 文献

号: 2299 **DOI**: 10.3390/ijerph17072299 出版年: APR 2020

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摘要: Leachate collection system (LCS) clogging is a common operational problem in municipal solid waste (MSW) landfills in China, which can result in high leachate levels that threaten the safety of landfill operations and subsequently increase the leachate leakage risk. In our previous research, a filtration test was conducted and the physical clogging effect was evaluated. To fully analyze the LCS failure, in this study, a set of column experiments were carried out to investigate the biochemical clogging development and mechanisms. Results showed that the biofilm and deposited CaCO3 composed the primary clogging materials. During the experimental period, the hydraulic conductivities in simulated gravel and nonwoven geotextile drainage layers were observed (91.7% and five orders of magnitude reduction), and decreased to 10(-4) and 10(-8) m s(-1), respectively. Therefore, the significance of the geotextile layer in LCS designing needs to be reconsidered. The biochemical clogging was positively correlated with volatile fatty acids (VFAs), and Ca2+ loading and the Ca2+ played the dominant role. Meanwhile, an improved method for analyzing biochemical clogging development was proposed.

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**PubMed ID: 32235374** 

语言: English 文献类型: Article

作者关键词: landfill; leachate collection system (LCS); biochemical clogging; column

experiment

**KeyWords Plus:** MUNICIPAL SOLID-WASTE; NONWOVEN GEOTEXTILES; GAS; PARAMETERS; EMISSIONS

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### 第 15 条, 共 36 条

标题: Fatigue Driving Prediction on Commercial Dangerous Goods Truck Using Location Data: The Relationship between Fatigue Driving and Driving Environment

作者: Niu, SF (Niu, Shifeng); Li, GQ (Li, Guiqiang)

来源出版物: JOURNAL OF ADVANCED TRANSPORTATION 卷: 2020 文献

号: 4219562 **DOI**: 10.1155/2020/4219562 出版年: JUL 9 2020

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摘要: The approaches monitoring fatigue driving are studied because of the fact that traffic accidents caused by fatigue driving often have fatal consequences. This paper proposes a new approach to predict driving fatigue using location data of commercial dangerous goods truck (CDT) and driver's yawn data. The proposed location data are from an existing dataset of a transportation company that was collected from 166 vehicles and drivers in an actual driving environment. Six different categories of the predictor set are considered as fatigue-related indexes including travel time, day of week, road type, continuous driving time, average velocity, and overall mileage. The driver's yawn data are used as a proxy for ground truth for the classification algorithm. From the six different categories of the predictor set, we obtain a set of 17 predictor variables to train logistic regression, neural network, and random forest classifiers. Then, we evaluate the predictive performance of the classifiers based on three indexes: accuracy, F1-measure, and area under the ROC curve (AUROC). The results show that the random forest is more

suitable for predicting fatigue driving using location data according to its best accuracy (74.18%), F1-measure (62.02%), and AUROC (0.8059). Finally, we analyze the relationship between fatigue driving and driving environment according to variable importance described by random forest. In summary, our results obviously exhibit the potential of location data for reducing the accident rate caused by fatigue driving in practice.

入藏号: WOS:000553433200003

语言: English 文献类型: Article

**KeyWords Plus:** HAZARDOUS MATERIALS; FALLING ASLEEP; RANDOM FORESTS; CLASSIFICATION; DRIVERS; WORK; CRASHES; SLEEP; TIME; ALGORITHMS

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### 第 16 条, 共 36 条

标题: Risk Assessment of Commercial dangerous-goods truck drivers using geolocation data: A case study in China

作者: Niu, SF (Niu, Shifeng); Ukkusuri, SV (Ukkusuri, Satish, V)

来源出版物: ACCIDENT ANALYSIS AND PREVENTION 卷: 137 文献

号: 105427 **DOI**: 10.1016/j.aap.2019.105427 出版年: MAR 2020

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摘要: The primary objective of this study is to understand the relationship between driving risk of commercial dangerous-goods truck (CDT) and exposure factors and find a way to evaluate the risk of specific transportation environment, such as specific transportation route. Due to increasing transportation demand and potential threat to public, commercial dangerous goods transportation (CDGT) has drawn attention from decision makers and researchers within governmental and non-governmental safety organization. However, there are few studies focusing on driving risk assessment of commercial dangerous-goods truck by environmental factors. In this paper we employ survival analysis methods to analyze the impact of risk exposure factors on non-accident mileage of commercial dangerous-good truck and assess risk level of specific driving environment. Using raw location data from six transportation companies in China, we derive a set of 17 risk exposure factors that we use for model parameters estimation. The survival model and hazard model were estimated using the Weibull distribution as the baseline distribution. The results show that four factors - weather, traffic flow, travel time and average velocity have a significant impact on the non-accident mileage of driver in this company, and the assessment results of survival function and hazard function are robust to the different levels of testing data. The employment time has some effect on the results but does not result in a significant difference in most cases, and the task stability has little impact on the results. The findings of this study should be useful for decision makers and transportation companies to better risk assessment of CDT.

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**PubMed ID: 32032934** 

语言: English 文献类型: Article

作者关键词: Traffic risk; Survival analysis; Commercial dangerous-goods truck; Risk

exposure factors

**KeyWords Plus:** HAZARDOUS MATERIALS TRANSPORT; DRIVING BEHAVIORS; SURVIVAL ANALYSIS; 1ST ACCIDENT; CRASH RATES; SAFETY; PERSONALITY; SPEED; AGE; FRAMEWORK

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### 第 17 条, 共 36 条

标题: The application and extension of the theory of planned behavior to an analysis of delivery riders' red-light running behavior in China

作者: Shen, XY (Shen, Xiaoyan); Zhang, F (Zhang, Fan); Lv, HT (Lv, Huitao); Wei, SS (Wei, Shanshan); Sun, ZC (Sun, Zhicheng)

来源出版物: ACCIDENT ANALYSIS AND PREVENTION 卷: 144 文献

号: 105640 **DOI**: 10.1016/j.aap.2020.105640 出版年: SEP 2020

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**摘要:** Delivery riders, an occupation that has emerged from China's booming E-commerce industry, have attracted widespread attention due to their red-light running (RLR) and high accident rates. This study aimed to utilize the theory of planned behavior (TPB) to investigate the psychological characteristics of delivery riders' RLR intentions. A survey questionnaire was designed to collect data, including information regarding the extended variables, the basic components of the TPB and demographic characteristics. The survey was conducted in Xi'an, and 228 complete questionnaires were collected. Structural equation modeling was used to examine the data, and a multiple group analysis of the demographic variables was conducted. The results showed that the expanded TPB model had a better model fit and higher variance explanation than the original TPB

model. Extended constructs, i.e., conformity tendency (CT) and the traffic environment (TE), were significant predictors, and attitude was the strongest predictor of all the examined variables related to RLR intentions. Finally, the path parameters of the expended TPB model were adapted for different demographic groups, and some differential effects were also found. These results could provide a basis for the design of intervention measures and safety education schemes by delivery platforms and traffic management departments to reduce RLR behavior among delivery riders.

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**PubMed ID: 32599312** 

语言: English 文献类型: Article

作者关键词: Delivery riders; Red-light running; The Theory of planned behavior;

Structural equation model; Multigroup analysis

**KeyWords Plus:** MOTORCYCLE RIDER; EXTENDED THEORY; CYCLISTS; ROAD; PEDESTRIANS; INTENTIONS; INVOLVEMENT; VIOLATIONS; PREDICT; CRASH

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# 第 18 条, 共 36 条

标题: Application of XGBoost for Hazardous Material Road Transport Accident Severity Analysis

作者: Shen, XY (Shen, Xiaoyan); Wei, SS (Wei, Shanshan)

来源出版物: IEEE

ACCESS 卷: 8 页: 206806-206819 DOI: 10.1109/ACCESS.2020.3037922 出版

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摘要: Hazardous material road transport accidents pose a serious threat to public life, property and the environment. Therefore, studying the factors influencing road transport accidents involving hazardous materials can help identify the main causes behind them and contribute to the adoption of specific and targeted measures to reduce casualty rates and improve traffic safety. However, most existing research either adopted methods based on statistical analysis or neglected to further evaluate the spatial relationships. This study aims to use the eXtreme Gradient Boosting (XGBoost) algorithm to analyze hazardous material road transport accident data from seven regions of China. Considering the rarity of these events, the classification performance of different methods is compared based on precision, recall, F-score and Area Under Curve (AUC). The results indicate that the proposed XGBoost method has the best modeling performance. There is some variation between regions in the features that have a significant impact on accident severity. The influence of the same feature on the severity of an accident even varies from region to region. The aforementioned results provide a theoretical basis for exploring the issues, sustainability, challenges, and tasks of safe transportation activities for hazardous materials in the future. These results can help regions develop targeted prevention and response policies to efficiently reduce the incidence and severity of accidents.

入藏号: WOS:000594419300001

语言: English 文献类型: Article

作者关键词: Accidents; Roads; Hazardous materials; Machine learning algorithms; Data models; Analytical models; Vehicles; Feature analysis; hazardous materials; road transport accident; transport safety; XGBoost

KeyWords Plus: MACHINE LEARNING-METHODS; CRASH SEVERITY; DANGEROUS GOODS; RISK ANALYSIS; NETWORKS; DRIVERS; CHINA; RAIL 地址: [Shen, Xiaoyan; Wei, Shanshan] Changan Univ, Sch Automobile, Xian 710064, Peoples R China.

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### 第 19 条, 共 36 条

标题: Research on a Cognitive Distraction Recognition Model for Intelligent Driving Systems Based on Real Vehicle Experiments

作者: Sun, QY (Sun, Qinyu); Wang, C (Wang, Chang); Guo, YS (Guo, Yingshi); Yuan, W (Yuan, Wei); Fu, R (Fu, Rui)

来源出版物: SENSORS 卷: 20 期: 16 文献号: 4426 **DOI**: 10.3390/s20164426 出版年: AUG 2020

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摘要: The accurate and prompt recognition of a driver's cognitive distraction state is of great significance to intelligent driving systems (IDSs) and human-autonomous collaboration systems (HACSs). Once the driver's distraction status has been accurately identified, the IDS or HACS can actively intervene or take control of the vehicle, thereby avoiding the safety hazards caused by distracted driving. However, few studies have considered the time-frequency characteristics of the driving behavior and vehicle status during distracted driving for the establishment of a recognition model. This study seeks to exploit a recognition model of cognitive distraction driving according to the time-frequency analysis of the characteristic parameters. Therefore, an on-road experiment was implemented to measure the relative parameters under both normal and distracted driving via a test vehicle equipped with multiple sensors. Wavelet packet analysis was used to extract the time-frequency characteristics, and 21 pivotal features were determined as the input of the training model. Finally, a bidirectional long short-term memory network (Bi-LSTM) combined with an attention mechanism (Atten-BiLSTM) was proposed and trained. The results indicate that, compared with the support vector machine (SVM) model and the long short-term memory network (LSTM) model, the proposed model achieved the highest recognition accuracy (90.64%) for

cognitive distraction under the time window setting of 5 s. The determination of time-frequency characteristic parameters and the more accurate recognition of cognitive distraction driving achieved in this work provide a foundation for human-centered intelligent vehicles.

入藏号: WOS:000564847500001

**PubMed ID: 32784788** 

语言: English 文献类型: Article

作者关键词: intelligent driving system; cognitive distraction driving; wavelet packet

analysis; long short-term memory network; attention mechanism

 $\textbf{KeyWords Plus:} \ \textbf{WAVELET PACKET;} \ \textbf{DRIVER DISTRACTION;} \ \textbf{SECONDARY}$ 

TASKS; CRASH RISK; PERFORMANCE; ENGAGEMENT; INJURIES

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### 第 20 条, 共 36 条

标题: Improving the User Acceptability of Advanced Driver Assistance Systems Based on Different Driving Styles: A Case Study of Lane Change Warning Systems

作者: Wang, C (Wang, Chang); Sun, QY (Sun, Qinyu); Guo, YS (Guo, Yingshi); Fu, R (Fu, Rui); Yuan, W (Yuan, Wei)

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# 引用的参考文献数:39

摘要: The low user acceptability of advanced driver assistance systems (ADASs) is one of the fundamental problems limiting their wider adoption. One of the key factors affecting the frequency of warning signals is the standard warning thresholds set in ADASs, which may not be compatible with all drivers owing to various driver characteristics affecting their cognition of risk, such as comfort, skill, and experience. The present study focuses on the lane change warning (LCW) system to evaluate driving styles according to the perception of lane change risk, and determine appropriate warning thresholds corresponding to the different driving styles. A theoretical lane change warning model is established to calculate the deceleration required for the rear approaching vehicle in the target lane. The results of risk assessment experiments conducted on an actual expressway using 15 proficient drivers are employed to evaluate the risk cognitions of the participants, where the participants are divided into four different driving styles according to their adaptive warning thresholds, which are denoted as very low threshold, low threshold, medium threshold, and high threshold driving styles. Signal detection theory is then employed to determine lane change warning thresholds appropriate to the different driving styles. Our results clearly demonstrate the disparate perceptions of lane change risk for the different drivers. Therefore, the LCW system should adopt different warning thresholds for different drivers according to their driving style. The findings provide evidence supporting the exploitation of driving styles for adopting different warning thresholds in the LCW system to enhance its user acceptability.

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语言: English 文献类型: Article

作者关键词: Vehicles; Cognition; Standards; Acceleration; Advanced driver assistance systems; Driver assistance systems acceptability; lane change warning; driving styles classification; risk cognition

KeyWords Plus: VEHICLE; BEHAVIOR; MODEL

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# 第 21 条, 共 36 条

标题: Research on the Comfort of Vehicle Passengers Considering the Vehicle Motion State and Passenger Physiological Characteristics: Improving the Passenger Comfort of Autonomous Vehicles

作者: Wang, C (Wang, Chang); Zhao, X (Zhao, Xia); Fu, R (Fu, Rui); Li, Z (Li, Zhen) 来源出版物: INTERNATIONAL JOURNAL OF ENVIRONMENTAL RESEARCH

AND PUBLIC HEALTH 卷: 17 期: 18 文献

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摘要: Comfort is a significant factor that affects passengers' choice of autonomous vehicles. The comfort of an autonomous vehicle is largely determined by its control algorithm. Therefore, if the comfort of passengers can be predicted based on factors that affect comfort and the control algorithm can be adjusted, it can be beneficial to improve the comfort of autonomous vehicles. In view of this, in the present study, a human-driven experiment was carried out to simulate the typical driving state of a future autonomous vehicle. In the experiment, vehicle motion parameters and the comfort evaluation results of passengers with different physiological characteristics were collected. A single-factor analysis method and binary logistic regression analysis model were used to determine the factors that affect the evaluation results of passenger comfort. A passenger comfort prediction model was established based on the bidirectional long short-term memory network model. The results demonstrate that the accuracy of the passenger comfort prediction model reached 84%, which can provide a theoretical basis for the adjustment of the control algorithm and path trajectory of autonomous vehicles.

入藏号: WOS:000582030400001

**PubMed ID:** 32962050

语言: English 文献类型: Article

作者关键词: autonomous vehicle; vehicle motion state; motion sickness; physiological

characteristic; passenger comfort; BiLSTM

**KeyWords Plus: SICKNESS; PREFERENCES** 

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### 第 22 条, 共 36 条

标题: Human-Like Lane Change Decision Model for Autonomous Vehicles that Considers the Risk Perception of Drivers in Mixed Traffic

作者: Wang, C (Wang, Chang); Sun, QY (Sun, Qinyu); Li, Z (Li, Zhen); Zhang, HJ (Zhang, Hongjia)

来源出版物: SENSORS 卷: 20 期: 8 文献号: 2259 **DOI**: 10.3390/s20082259 出版

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摘要: Determining an appropriate time to execute a lane change is a critical issue for the development of Autonomous Vehicles (AVs). However, few studies have considered the rear and the front vehicle-driver's risk perception while developing a human-like lane-change decision model. This paper aims to develop a lane-change decision model for AVs and to identify a two level threshold that conforms to a driver's perception of the ability to safely change lanes with a rear vehicle approaching fast. Based on the signal detection theory and extreme moment trials on a real highway, two thresholds of safe lane change were determined with consideration of risk perception of the rear and the subject vehicle drivers, respectively. The rear vehicle's Minimum Safe Deceleration (MSD) during the lane change maneuver of the subject vehicle was selected as the lane change

safety indicator, and was calculated using the proposed human-like lane-change decision model. The results showed that, compared with the driver in the front extreme moment trial, the driver in the rear extreme moment trial is more conservative during the lane change process. To meet the safety expectations of the subject and rear vehicle drivers, the primary and secondary safe thresholds were determined to be 0.85 m/s(2) and 1.76 m/s(2), respectively. The decision model can help make AVs safer and more polite during lane changes, as it not only improves acceptance of the intelligent driving system, but also further ensures the rear vehicle's driver's safety.

入藏号: WOS:000533346400101

**PubMed ID: 32316210** 

语言: English 文献类型: Article

作者关键词: autonomous vehicles; lane-change decision; risk perception; mixed traffic;

minimum safe deceleration

**KeyWords Plus:** GAP ACCEPTANCE; ROAD SAFETY; BEHAVIOR;

ACCELERATION; PREDICTION; DURATION; SECTION; SYSTEMS; IMPACT;

**FUTURE** 

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### 第 23 条, 共 36 条

标题: A forward collision warning system based on self-learning algorithm of driver characteristics

作者: Wang, C (Wang, Chang); Sun, QY (Sun, Qinyu); Li, Z (Li, Zhen); Zhang, HJ (Zhang, Hongjia); Fu, R (Fu, Rui)

来源出版物: JOURNAL OF INTELLIGENT & FUZZY SYSTEMS 卷: 38 期: 2 特

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摘要: The frequent false alarms in Forward Collision Warning systems not only disturb the normal operation of drivers, but also reduce the user acceptance of the warning systems. However, drivers with disparate driving characteristics possess different safety cognition of car-following braking behavior; systems with stationary warning thresholds inevitably lead to higher false positive and false negative rates for aggressive and conservative drivers, respectively. In this study, we proposed an adaptive algorithm that learns the characteristics of individual drivers during car-following braking processes, and determined the optimal threshold online to adapt to different drivers. Signal detection theory was employed and the results of the accuracy, false negative rate, and false positive rate were used to capture drivers' characteristics of car-following braking behavior. The optimal warning thresholds were continuously selected online during the learning stage based on changes in the drivers' characteristics. The developed algorithm by conducting actual vehicle tests with two participants were evaluated. The offline statistical analysis results of the participants' car-following braking characteristics were compared with the online results of the warning threshold adjustments from the adaptive algorithm. The comparison results indicated that the adaptive algorithm could effectively capture the drivers' car-following braking characteristics and determine an appropriate warning threshold.

入藏号: WOS:000514081100042

语言: English 文献类型: Article

作者关键词: Car-following braking; forward collision warning system; self-learning; signal detection theory

**KeyWords Plus:** SIGNAL-DETECTION-THEORY; BENEFITS; VEHICLE; MODEL; IMAGE

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# 第 24 条, 共 36 条

标题: A driver's car-following behavior prediction model based on multi-sensors data 作者: Wang, H (Wang, Hui); Gu, ML (Gu, Menglu); Wu, SB (Wu, Shengbo); Wang, C (Wang, Chang)

来源出版物: EURASIP JOURNAL ON WIRELESS COMMUNICATIONS AND NETWORKING 卷: 2020 期: 1 文献号: 10 DOI: 10.1186/s13638-020-1639-2 出版年: JAN 8 2020

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使用次数 (最近 180 天): 5 使用次数 (2013 年至今): 12

引用的参考文献数:44

摘要: The prerequisite for the effective operation of vehicle collision warning system is that the necessary operation is not implemented. Therefore, the behavior prediction that the driver should perform when the preceding vehicle braking is the key to improve the effectiveness of the warning system. This study was conducted to acquire characteristics in the car-following behavior when confronted by the braking of the preceding vehicle, including the reaction time and operation behavior, and establish a behavior prediction model. A driving experiment on the expressway was conducted using devices, such as millimeter-wave radars and controller area network (CAN) bus data, to acquire 845 segments of car following when the brake lamps of the car ahead are on. Data analysis demonstrates that the mean of time distance of car following, mean of car-following distance, and time-to-collision (TTC) mean are closely related with whether or not the driver slowed the car down. The operation states of the driver were divided into keeping the unchanged state of the degree of accelerator pedal opening, loosening of accelerator pedal without braking, braking, and other special situations with the input variables of car-following distance, speed of driver's car, relative speed, time distance, and TTC using the support vector machine (SVM) method to build a prediction model for the operation behavior of the driver. The verification result showed that the model predicts driving behavior with an accuracy rate of 80%. It reflects the actual decision-making process of the driver, especially the normal operation of the driver, to loosen the accelerator pedal without braking. This model can help to optimize the algorithm of the rear-end accident warning system and improve intelligent system acceptance.

入藏号: WOS:000512694600001

语言: English 文献类型: Article

作者关键词: Machine learning; Car following; Sensor data; Prediction model;

Time-to-collisionAbbreviations; CAN Controller area network; GMM Gaussian mixed model; GPS Global position system; IPC Industrial personal computer; ROC Receiver operating characteristic curve; SVM Support vector machine; THW Time headway; TTC Time-to-collision

**KeyWords Plus:** REACTION-TIME; DRIVING BEHAVIOR; SAFETY; VARIABILITY; INTERNET; YOUNGER; DELAY; EDGE; FLOW

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### 第 25 条, 共 36 条

标题: Identification of Driver Braking Intention Based on Long Short-Term Memory (LSTM) Network

作者: Wang, S (Wang, Shu); Zhao, X (Zhao, Xuan); Yu, Q (Yu, Qiang); Yuan, T (Yuan,

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来源出版物: IEEE

ACCESS 卷: 8 页: 180422-180432 DOI: 10.1109/ACCESS.2020.3027811 出版

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摘要: Driving intention identification is a key technology which can improve the adaptability of the intelligent driver assistance systems and the energy efficiency of electric vehicles. This article proposes a novel method for identifying the driver braking intention. In order to improve the identification accuracy of driving intention, a braking intention identification model based on Long Short-Term Memory (LSTM) Network is constructed. The data of slight braking, normal braking and hard braking that can use for offline training are obtained through tests on real vehicle at Chang'an University vehicle performance testing ground. Support vector machine - recursive feature elimination (SVM-RFE) algorithm is used to select the characteristic parameter of braking intention identification model. The random search is subsequently used to optimize the hyper-parameters of LSTM. LSTM-based and Gaussian Hidden Markov Model (GHMM)-based model under different time window are used to identify braking intention of slight braking, normal braking and hard braking respectively. The results show that the Precision, Recall, F-measure, Accuracy of the braking intention identification model which propose in this paper based on LSTM are better than that of the braking intention identification model based on GHMM. Moreover, the Recall and Accuracy of the LSTM-based braking intention identification models are above 0.95, indicating the good ability of intention identification.

入藏号: WOS:000578633800001

语言: English 文献类型: Article

作者关键词: Hidden Markov models; Brakes; Vehicles; Support vector machines; Force; Feature extraction; Data models; Braking intention recognition; driving safety; driver assistance system; LSTM network; accuracy and real-time

**KeyWords Plus:** NEURAL-NETWORK; SVM-RFE; SYSTEMS; ALGORITHM; BEHAVIOR; STRATEGY; DESIGN

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# 第 26 条, 共 36 条

标题: Relationship between speed perception and eye movement-A case study of crash-involved and crash-not-involved drivers in China

作者: Wu, FW (Wu, Fuwei); Fu, R (Fu, Rui); Ma, Y (Ma, Yong); Wang, C (Wang,

Chang); Zhang, Z (Zhang, Zhi)

来源出版物: PLOS ONE 卷: 15 期: 3 文献

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摘要: Speed perception tests are already used in several countries as part of the driver licensing curriculum; however, this test is not compulsively required in China. The purpose of this study was to investigate the relationship between speed perception and eye movement for different driver groups. Forty-eight drivers, including 28 crash-involved (CI), with rear-end or side collisions, and 20 crash-not-involved (CNI) drivers, were recruited for the speed perception experiments. Drivers' reaction characteristics as well as eye movement data were analyzed. The results showed that CI drivers were more likely to overestimate the speed of visual stimuli and react in advance. The speed perception of CI drivers was more accurate than that of CNI drivers for visual stimuli with middle to high moving speeds, indicating that CNI drivers are more cautious and conservative when driving. Regarding eye movement, significant differences in saccade speed were found between the CI and CNI drivers in the occlusion area under high speed and the occlusion ratio. The relationship between visual pattern and speed perception accuracy was found to some extent. Implications of the speed perception test for the driver aptitude test were discussed.

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**KeyWords Plus: MOTION** 

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### 第 27 条, 共 36 条

标题: Simulation-Based Research on Driver Visibility of Black-and-White Striped Vehicles

作者: Xie, P (Xie, Pei); Li, Q (Li, Qing); Zhu, T (Zhu, Tong); Cao, MH (Cao, Minghua); Zhao, RQ (Zhao, Runqing)

来源出版物: JOURNAL OF ADVANCED TRANSPORTATION 卷: 2020 文献

号: 8848123 **DOI:** 10.1155/2020/8848123 出版年: SEP 1 2020

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摘要: The vehicle color is considered to be a significant factor affecting driver visibility. The primary objective of this study is therefore to determine the impact of black-and-white striped vehicles (BWVs) on driver visibility through simulation-based

experiments. In these experiments, subjects were asked to perform front and rear target identification tasks under daylight and twilight conditions. Then, a 2 (lighting conditions) x 2 (vehicle size) x 5 (vehicle color) analysis of variance was conducted for each task. Under the front identification scenario, the main factors affecting visibility were found to be lighting conditions, vehicle size, vehicle color, and the interactions between these factors. Under the rear identification scenario, lighting conditions and vehicle color were found to be the main factors. The results of this study demonstrate that driver visibility of BWVs is poorer than that of other colors of vehicles and that BWV visibility is susceptible to lighting conditions.

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KeyWords Plus: VISUAL CONSPICUOUSNESS; COLOR; RISK; INJURY

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#### 第 28 条, 共 36 条

标题: Seating Provision and Configuration of a 12m City Bus Considering Passenger Crowding

作者: Yan, SY (Yan, Shengyu); Cao, J (Cao, Jing); Zhao, ZZ (Zhao, Zhuanzhuan)

来源出版物: INTERNATIONAL JOURNAL OF AUTOMOTIVE

TECHNOLOGY 卷: 21 期: 5 页: 1223-1231 DOI: 10.1007/s12239-020-0116-6 出版

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摘要: Seating capacity of a limited area significantly affects passenger crowding on a 12 m city bus, which is the main type of buses for public transport in China. This study aimed to provide an optimal solution for the seating capacity to adapt the passenger flow during operational periods. The study claimed that the seating capacity was defined by an overall crowding effect considering both the standees and seated passengers, whose demands for seat supply are different. It investigated the projected area of the seated passengers on board, defined the criteria regarding whether the current trip was a peak shift, and proposed a passenger crowding index for optimizing the seating capacity during two operational periods. It not only provided a recommended table between actual seating capacity and intensity coefficient varying along the two periods, but also discussed the number of 12 m buses with different seating capacities allocated to the bus line. It demonstrated the feasibility of the passenger crowding index through a case study and compared the effects of three main seat configurations existing on the 12 m city bus. It displayed that a seat capacity preferably ranged from 21 to 43 while only one seat configuration was allowed by the public transport enterprises.

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语言: English 文献类型: Article

作者关键词: Public transport; Passenger crowding; Seating capacity; Standee density;

Intensity coefficient of passenger flow

**KeyWords Plus:** PUBLIC TRANSPORT; PERFORMANCE; OPERATION; DESIGN; USERS

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# 第 29 条, 共 36 条

标题: City-Level China Traffic Safety Analysis via Multi-Output and Clustering-Based Regression Models

作者: Yan, XP (Yan, Xingpei); Zhu, Z (Zhu, Zheng) 来源出版物: SUSTAINABILITY 卷: 12 期: 8 文献 号: 3098 **DOI:** 10.3390/su12083098 出版年: APR 2020

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摘要: In the field of macro-level safety studies, road traffic safety is significantly related to socioeconomic factors, such as population, number of vehicles, and Gross Domestic Product (GDP). Due to different levels of economic and urbanization, the influence of the predictive factors on traffic safety measurements can differ between cities (or regions). However, such region-level or city-level heterogeneities have not been adequately concerned in previous studies. The objective of this paper is to adopt a novel approach for traffic safety analysis with a dataset containing multiple target variables and samples from different subpopulations. Based on a dataset with annual traffic safety and socioeconomic measurements from 36 major cities in China, we estimate single-output regression models, multi-output regression models, and clustering-based regression models. The results indicate that the 36 cities can be clustered into a metropolitan city class and a non-metropolitan city class, and the class-specified models can notably improve the goodness-of-fit and the interpretability of city-level heterogeneities. Specifically, we note that the effect of primary and secondary industrial GDP on traffic safety is opposite to that of tertiary industrial GDP in the metropolitan city class, while the effects of the two decomposed GDP on traffic safety are consistent in the non-metropolitan city class. We

also note that the population has a positive effect on the number of fatalities and the number of injures in metropolitan cities but has no significant influence on traffic safety in non-metropolitan cities.

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语言: English 文献类型: Article

作者关键词: macro-level traffic safety analysis; multi-output regression;

clustering-based regression; socioeconomic predictive variables

**KeyWords Plus:** FREIGHT TRANSPORT; PREDICTION; FATALITIES;

SHRINKAGE; SELECTION; EUROPE; URBAN; GDP

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#### 第 30 条, 共 36 条

标题: Crash prediction based on random effect negative binomial model considering data heterogeneity

作者: Yan, Y (Yan, Ying); Zhang, Y (Zhang, Ying); Yang, XL (Yang, Xiangli); Hu, J (Hu, Jin); Tang, JJ (Tang, Jinjun); Guo, ZY (Guo, Zhongyin)

来源出版物: PHYSICA A-STATISTICAL MECHANICS AND ITS

APPLICATIONS 卷: 547 文献号: 123858 **DOI:** 10.1016/j.physa.2019.123858 出版年: JUN 1 2020

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摘要: In order to improve traffic safety, a large amount of works focusing on crash prediction and identifying factors contributing to crashes. However, the ignorance of data unobserved heterogeneity in some traditional models may lead to biased parameter estimation and erroneous inferences. To investigate the relationship between crash and the potential contributing factors, the crash data occurred in 3-year survey period on Interstate highways in Washington, including 134 fatal crashes, 13936 injury crashes, and 34,084 property damage only (PDO) crashes were collected. A data quality control method based on sensitivity analysis is used to determine the road segments. Then a negative binomial (NB) model and a random negative binomial (RENB) model are constructed to predict crash number. The inverse stepwise procedure was applied to examine the significance of explanatory variable. The horizontal alignment type, speed limit, visibility, road surface condition, and AADT are identified as significant factors on the crash. In the comparison, four standard errors are designed as indicators, and the results show that the errors of RENB model are lower than that of NB model. The comparing results illustrate that the RENB model outperforms the NB model in crash number prediction and safety service level prediction (C) 2019 Elsevier B.V. All rights reserved.

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语言: English 文献类型: Article

作者关键词: Heterogeneity; Random effect negative binomial model; Negative binomial

model; Crash prediction; Traffic safety

**KeyWords Plus:** MIXED LOGIT MODEL; MIXTURE RANDOM-PARAMETERS; UNOBSERVED HETEROGENEITY; STATISTICAL-ANALYSIS; INJURY SEVERITIES; FREQUENCY

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#### 第 31 条, 共 36 条

标题: An Automatic Emergency Braking Model considering Driver's Intention Recognition of the Front Vehicle

作者: Yang, W (Yang, Wei); Liu, JJ (Liu, Jiajun); Zhou, KX (Zhou, Kaixia); Zhang, ZW (Zhang, Zhiwei); Qu, XL (Qu, Xiaolei)

来源出版物: JOURNAL OF ADVANCED TRANSPORTATION 卷: 2020 文献

号: 5172305 DOI: 10.1155/2020/5172305 出版年: DEC 8 2020

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摘要: Driver's intention of the front vehicle plays an important role in the automatic emergency braking (AEB) system. If the front vehicle brakes suddenly, there is potential collision risk for following vehicle. Therefore, we propose a driver's intention recognition model for the front vehicle, which is based on the backpropagation (BP) neural network and hidden Markov model (HMM). The brake pedal, accelerator pedal, and vehicle speed data are used as the input of the proposed BP-HMM model to recognize the driver's intention, which includes uniform driving, normal braking, and emergency braking. According to the recognized driver's intention transmitted by Internet of vehicles, an AEB model for the following vehicle is proposed, which can dynamically change the critical braking distance under different driving conditions to avoid rear-end collision. In order to verify the performance of the proposed models, we conducted driver's intention recognition and AEB simulation tests in the cosimulation environment of Simulink and PreScan. The simulation test results show that the average recognition accuracy of the proposed BP-HMM model was 98%, which was better than that of the BP and HMM models. In the Car to Car Rear moving (CCRm) and Car to Car Rear braking (CCRb) tests, the minimum relative distance between the following vehicle and the front vehicle was within the range of 1.5 m-2.7 m and 2.63 m-5.28 m, respectively. The proposed AEB model has better collision avoidance performance than the traditional AEB model and can adapt to individual drivers.

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语言: English 文献类型: Article

KeyWords Plus: COLLISION WARNING SYSTEM; REAR-END COLLISION;

ALGORITHM; TIME; PREDICTION; WORLD

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#### 第 32 条, 共 36 条

标题: A Hybrid Approach for Turning Intention Prediction Based on Time Series Forecasting and Deep Learning

作者: Zhang, HL (Zhang, Hailun); Fu, R (Fu, Rui)

来源出版物: SENSORS 卷: 20 期: 17 文献号: 4887 **DOI**: 10.3390/s20174887 出版年: SEP 2020

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摘要: At an intersection with complex traffic flow, the early detection of the intention of drivers in surrounding vehicles can enable advanced driver assistance systems (ADAS) to warn the driver in advance or prompt its subsystems to assess the risk and intervene early. Although different drivers show various driving characteristics, the kinematic parameters of human-driven vehicles can be used as a predictor for predicting the driver's intention

within a short time. In this paper, we propose a new hybrid approach for vehicle behavior recognition at intersections based on time series prediction and deep learning networks. First, the lateral position, longitudinal position, speed, and acceleration of the vehicle are predicted using the online autoregressive integrated moving average (ARIMA) algorithm. Next, a variant of the long short-term memory network, called the bidirectional long short-term memory (Bi-LSTM) network, is used to detect the vehicle's turning behavior using the predicted parameters, as well as the derived parameters, i.e., the lateral velocity, lateral acceleration, and heading angle. The validity of the proposed method is verified at real intersections using the public driving data of the next generation simulation (NGSIM) project. The results of the turning behavior detection show that the proposed hybrid approach exhibits significant improvement over a conventional algorithm; the average recognition rates are 94.2% and 93.5% at 2 s and 1 s, respectively, before initiating the turning maneuver.

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**PubMed ID: 32872356** 

语言: English 文献类型: Article

作者关键词: advanced driver assistance system; autonomous vehicle; driving intention prediction; online time series prediction; bidirectional long short-term memory network

**KeyWords Plus:** LANE-CHANGING BEHAVIOR; ATTENTION MECHANISM; DRIVER BEHAVIOR; SAFETY IMPACT; INTERSECTIONS; MODEL; VEHICLES; FRAMEWORK

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## 第 33 条, 共 36 条

标题: Analysis of Pedestrian Street-Crossing Decision-Making Based on Vehicle Deceleration-Safety Gap

作者: Zhang, HJ (Zhang, Hongjia); Guo, YS (Guo, Yingshi); Chen, YX (Chen,

Yunxing); Sun, QY (Sun, Qinyu); Wang, C (Wang, Chang)

来源出版物: INTERNATIONAL JOURNAL OF ENVIRONMENTAL RESEARCH

AND PUBLIC HEALTH 卷: 17 期: 24 文献

号: 9247 **DOI**: 10.3390/ijerph17249247 出版年: DEC 2020

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摘要: Numerous traffic crashes occur every year on zebra crossings in China. Pedestrians are vulnerable road users who are usually injured severely or fatally during human-vehicle collisions. The development of an effective pedestrian street-crossing decision-making model is essential to improving pedestrian street-crossing safety. For this purpose, this paper carried out a naturalistic field experiment to collect a large number of vehicle and pedestrian motion data. Through interviewed with many pedestrians, it is found that they pay more attention to whether the driver can safely brake the vehicle before reaching the zebra crossing. Therefore, this work established a novel decision-making model based on the vehicle deceleration-safety gap (VD-SGM). The deceleration threshold of VD-SGM was determined based on signal detection theory (SDT). To verify the performance of VD-SGM proposed in this work, the model was compared with the Raff model. The results show that the VD-SGM performs better and the false alarm rate is lower. The VD-SGM proposed in this work is of great significance to improve pedestrians' safety. Meanwhile, the model can also increase the efficiency of autonomous vehicles.

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语言: English 文献类型: Article

作者关键词: pedestrian; zebra crossings; decision-making model; vehicle deceleration;

signal detection theory; autonomous vehicles

KeyWords Plus: ACCEPTANCE; SPEED; AGE

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# 第 34 条, 共 36 条

标题: Do situational or cognitive factors contribute more to risky driving? A simulated driving study

作者: Zhang, Z (Zhang, Zhi); Guo, YS (Guo, Yingshi); Fu, R (Fu, Rui); Yuan, W (Yuan,

Wei); Yang, GS (Yang, Guosong)

来源出版物: COGNITION TECHNOLOGY &

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摘要: Previous research has identified cognitive and situational factors as causes of risky driving; however, little is known about what roles cognitive and situational factors have on a specific risky driving behavior. In this study, two simulated drives were conducted to examine the impact of cognitive factors, reflected as working memory capacity and response inhibition capacity, and situational factor, reflected as time pressure, on several risky driving measures. These measures included the percentage of the distance traveled while speeding, the standard deviation of the lateral lane position on curves, safety scores, and accident frequency. Fifty-one participants were recruited by means of monetary rewards. Similar to the results from previous studies, working memory capacity, response inhibition, and time pressure were found to be significantly correlated with risky driving behaviors. Further investigation showed that (1) time pressure, as a situational factor, contributed more to speeding; (2) response inhibition, as a cognitive factor, contributed

more to lane-keeping precision; (3) cognitive factors (working memory capacity and response inhibition capacity) and situational factor had almost equal effects on responses to critical events. The results also indicated no significant interaction between cognitive and situational factors on risky driving behaviors. Our findings conclude that the mechanisms behind risky driving behaviors differ, and these results have possible implications for traffic safety interventions.

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语言: English 文献类型: Article

作者关键词: Cognitive control; Time pressure; Risky driving; Human factors; Working

memory; Response inhibition

**KeyWords Plus:** TIME PRESSURE; WORKING-MEMORY; DRIVERS;

ADOLESCENCE; PERCEPTION; CHOKING; IMPACT; NURSES

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# 第 35 条, 共 36 条

标题: Linking executive functions to distracted driving, does it differ between young and mature drivers?

作者: Zhang, Z (Zhang, Zhi); Guo, YS (Guo, Yingshi); Fu, R (Fu, Rui); Yuan, W (Yuan, Wei); Wang, C (Wang, Chang)

来源出版物: PLOS ONE 卷: 15 期: 9 文献

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摘要: Distracted driving is a leading cause of traffic accidents. Certain executive functions significantly affect the willingness of distracted driving; however, little research has compared the effects of executive functions on distracted driving behaviors in different aged populations. This study explores and compares the behavioral and cognitive processes underlying distracted driving behaviors in young and mature drivers. A total of 138 participants aged 18-65 years old completed a self-report questionnaire for measuring executive function index and distracted driving behaviors. Independent sample t-tests were conducted for executive functions (motivational drive, organization, strategic planning, impulse control, and empathy) and driving variables to examine any differences between young and mature groups. Partial correlation coefficients and z-score of these comparisons were calculated to compare the differences between age groups. Furthermore, multiple hierarchical regression models were constructed to determine the relative contributions of age, gender, and executive functions on distracted driving behaviors. Results demonstrated the following: (1) Mature drivers performed better for impulse control, the executive function index as well as the measure of distracted driving behavior than young drivers; (2) the relationships between executive functions and distracted driving behaviors did not significantly differ between young and mature drivers; (3) for both young and mature drivers, motivational drive and impulse control were found to significantly improve the prediction of distracted driving behavior in regression models. The findings emphasize that similar behavioral and cognitive processes are involved in distracted driving behavior of young and mature drivers, and can promote a single strategy for driver education and accident prevention interventions for both age groups.

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语言: English 文献类型: Article

**KeyWords Plus:** INDIVIDUAL-DIFFERENCES; COGNITIVE FUNCTION; BEHAVIOR; ATTITUDES; PERSONALITY; ADOLESCENT; IMPULSES; TIME

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#### 第 36 条, 共 36 条

标题: Development of a representative urban driving cycle construction methodology for electric vehicles: A case study in Xi'an

作者: Zhao, X (Zhao, Xuan); Zhao, XM (Zhao, Xiangmo); Yu, Q (Yu, Qiang); Ye, YM (Ye, Yiming); Yu, M (Yu, Man)

来源出版物: TRANSPORTATION RESEARCH PART D-TRANSPORT AND ENVIRONMENT 卷: 81 文献号: 102279 **DOI**: 10.1016/j.trd.2020.102279 出版年: APR 2020

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摘要: This paper develops a systematic and practical construction methodology of a representative urban driving cycle for electric vehicles, taking Xi'an as a case study. The methodology tackles four major tasks: test route selection, vehicle operation data collection, data processing, and driving cycle construction. A qualitative and quantitative comprehensive analysis method is proposed based on a sampling survey and an analytic hierarchy process to design test routes. A hybrid method using a chase car and on-board measurement techniques is employed to collect data. For data processing, the principal component analysis algorithm is used to reduce the dimensions of motion characteristic parameters, and the K-means and support vector machine hybrid algorithm is used to classify the driving segments. The proposed driving cycle construction method is based on the Markov and Monte Carlo simulation method. In this study, relative error, performance value, and speed-acceleration probability distribution are used as decision criteria for selecting the most representative driving cycle. Finally, characteristic parameters, driving range, and energy consumption are compared under different driving cycles.

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语言: English 文献类型: Article

作者关键词: Driving cycle; Electric vehicle; Cycle construction; Driving range **KeyWords Plus:** PASSENGER CARS; PERFORMANCE; CONSUMPTION; MANAGEMENT; ROBUST; CITY

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# 运输工程学院

#### 第 1 条, 共 29 条

标题: Can I Trust You? Estimation Models for e-Bikers Stop-Go Decision before Amber Light at Urban Intersection

作者: Cai, J (Cai, Jing); Zhao, JY (Zhao, Jianyou); Xiang, YS (Xiang, Yusheng); Liu, J (Liu, Jing); Chen, G (Chen, Gang); Hu, YQ (Hu, Yueqi); Chen, JH (Chen, Jianhua) 来源出版物: JOURNAL OF ADVANCED TRANSPORTATION 卷: 2020 文献

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引用的参考文献数:58

摘要: Electric bike (e-bike) riders' inappropriate go-decision, yellow-light running (YLR), could lead to accidents at intersection during the signal change interval. Given the high YLR rate and casualties in accidents, this paper aims to investigate the factors influencing the e-bikers' go-decision of running against the amber signal. Based on 297 cases who made stop-go decisions in the signal change interval, two analytical models, namely, a base logit model and a random parameter logit model, were established to estimate the effects of contributing factors associated with e-bikers' YLR behaviours. Besides the well-known factors, we recommend adding approaching speed, critical crossing distance, and the number of acceleration rate changes as predictor factors for e-bikers' YLR behaviours. The results illustrate that the e-bikers' operational characteristics (i.e., approaching speed, critical crossing distance, and the number of acceleration rate change) and individuals' characteristics (i.e., gender and age) are

significant predictors for their YLR behaviours. Moreover, taking effects of unobserved heterogeneities associated with e-bikers into consideration, the proposed random parameter logit model outperforms the base logit model to predict e-bikers' YLR behaviours. Providing remarkable perspectives on understanding e-bikers' YLR behaviours, the predicting probability of e-bikers' YLR violation could improve traffic safety under mixed traffic and fully autonomous driving condition in the future.

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语言: English 文献类型: Article

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#### 第 2 条, 共 29 条

标题: Optimizing Wireless Charging Locations for Battery Electric Bus Transit with a Genetic Algorithm

作者: Chen, G (Chen, Gang); Hu, DW (Hu, Dawei); Chien, S (Chien, Steven); Guo, L (Guo, Lei); Liu, MZ (Liu, Mingzheng)

来源出版物: SUSTAINABILITY 卷: 12 期: 21 文献 号: 8971 **DOI:** 10.3390/su12218971 出版年: NOV 2020 Web of Science 核心合集中的 "被引频次": 1

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摘要: Electrifying bus transit has been deemed as an effective way to reduce the emissions of transit vehicles. However, some concerns about on-board battery hinder its further development. Recently, dynamic wireless power transfer (DWPT) technologies have been developed, which enable buses to charge in-motion and overcome the drawback (short service range) with opportunity charging. This paper proposes a mathematic model which optimizes the locations for DWPT devices deployed at stops and size of battery capacity for battery electric buses (BEB) in a multi-route network, which considers the battery's service life, depth of discharge and weight. A tangible solution algorithm based on a genetic algorithm (GA) is developed to find the optimal solution. A case study based on the bus network from Xi'an China is conducted to investigate the relationship among optimized costs, greenhouse gas (GHG) emissions, battery service life, size of the battery capacity and the number of DWPT devices. The results demonstrated that a bus network powered by DWPT shows better performance in both costs (a 43.3% reduction) and emissions (a 14.4% reduction) compared to that with stationary charging at bus terminals.

入藏号: WOS:000589199500001

语言: English 文献类型: Article

作者关键词: dynamic wireless power transfer; electric bus; transportation network planning; genetic algorithm

KeyWords Plus: GREENHOUSE-GAS EMISSIONS; VEHICLE;

INFRASTRUCTURE; OPTIMIZATION; STATIONS; ENERGY; FACILITIES;

IMPACT; MODEL; TIME

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# 第 3 条, 共 29 条

标题: Analysis of Factors Affecting the Severity of Automated Vehicle Crashes Using XGBoost Model Combining POI Data

作者: Chen, HR (Chen, Hengrui); Chen, H (Chen, Hong); Liu, ZZ (Liu, Zhizhen); Sun, XK (Sun, Xiaoke); Zhou, RY (Zhou, Ruiyu)

来源出版物: JOURNAL OF ADVANCED TRANSPORTATION 卷: 2020 文献

号: 8881545 **DOI**: 10.1155/2020/8881545 出版年: NOV 19 2020

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摘要: The research and development of autonomous vehicle (AV) technology have been gaining ground globally. However, a few studies have performed an in-depth exploration of the contributing factors of crashes involving AVs. This study aims to predict the severity of crashes involving AVs and analyze the effects of the different factors on crash severity. Crash data were obtained from the AV-related crash reports presented to the California Department of Motor Vehicles in 2019 and included 75 uninjured and 18 injured accident cases. The points-of-interest (POI) data were collected from Google Map Application Programming Interface (API). Descriptive statistics analysis was applied to examine the features of crashes involving AVs in terms of collision type, crash severity, vehicle movement preceding the collision, and degree of vehicle damage. To compare the classification performance of different classifiers, we use two different classification models: eXtreme Gradient Boosting (XGBoost) and Classification and Regression Tree (CART). The result shows that the XGBoost model performs better in identifying the injured crashes involving AVs. Compared with the original XGBoost model, the recall and G-mean of the XGBoost model combining POI data improved by 100% and 11.1%, respectively. The main features that contribute to the severity of crashes include weather, degree of vehicle damage, accident location, and collision type. The results indicate that crash severity significantly increases if the AVs collided at an intersection under extreme

weather conditions (e.g., fog and snow). Moreover, an accident resulting in injuries also had a higher probability of occurring in areas where land-use patterns are highly diverse. The knowledge gained from this research could ultimately contribute to assessing and improving the safety performance of the current AVs.

入藏号: WOS:000600046900003

语言: English 文献类型: Article

KeyWords Plus: AUTONOMOUS VEHICLES; CLASSIFICATION;

COLLINEARITY; REGRESSION; SPEED

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# 第 4 条, 共 29 条

标题: Critical Factors Analysis of Severe Traffic Accidents Based on Bayesian Network in China

作者: Chen, H (Chen, Hong); Zhao, Y (Zhao, Yang); Ma, XT (Ma, Xiaotong)

来源出版物: JOURNAL OF ADVANCED TRANSPORTATION 卷: 2020 文献

号: 8878265 **DOI:** 10.1155/2020/8878265 出版年: NOV 16 2020

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引用的参考文献数:44

摘要: (e purpose of this study is to minimize the negative influences of the severe traffic accidents in China by profoundly analyzing the complex coupling relations among accident factors contributing to the single-vehicle and multivehicle traffic accidents with the Bayesian network (BN) crash severity model. The BN model was established by taking the critical factors identified with the improved grey correlation analysis method as node variables. The severe traffic accident data collected from accident reports published in China were used to validate this model. The model's efficiency was validated objectively by comparing the conditional probability obtained by this model with the actual value. The result shows that the BN model can reflect the real relations among factors and can be seen as the target network for the severe traffic accidents in China. Besides, based on BN's junction tree engine, five-factor combination sequences for the number of deaths and three-factor combination sequences for the number of injuries were ranked according to the severity degree to reveal the critical reasons and reduce the massive traffic accidents damage.

入藏号: WOS:000600046800004

语言: English 文献类型: Article

KevWords Plus: SERIOUS OCCUPATIONAL ACCIDENTS; DRIVING

BEHAVIORS; PREVENTION; ROAD; VIOLATIONS

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#### 第 5 条, 共 29 条

标题: Effects of Vehicle Restriction Policies on Urban Travel Demand Change from a Built Environment Perspective

作者: Cheng, XY (Cheng, Xiaoyun); Huang, K (Huang, Kun); Qu, L (Qu, Lei); Zhang, TB (Zhang, Tianbao); Li, L (Li, Li)

来源出版物: JOURNAL OF ADVANCED TRANSPORTATION 卷: 2020 文献

号: 9848095 **DOI**: 10.1155/2020/9848095 出版年: JUL 17 2020

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使用次数 (最近 180 天): 6 使用次数 (2013 年至今): 6

引用的参考文献数:59

摘要: License plate restriction (LPR) policy presents the most straightforward way to reduce road traffic and emissions worldwide. However, in practice, it has aroused great controversy. This policy broke the original structure of the urban transportation mode, which needed some matching strategies to adapt to this change. Investigating this travel demand change is a challenging task because it is greatly influenced by features of the local built environment. Fourteen variables from four dimensions, location, land-use diversity, distance to transit, and street design, are used to depict the built environment; moreover, the severe collinearity underlies these feature variables. To solve the multicollinearity among the variables and high-dimensional problem, this study utilizes two different penalization-based regression models, the LASSO (least absolute shrinkage and selection operator) and Elastic Net regression algorithms, to achieve the variable selection and explore the impacts of the built environment on the change of travel demand triggered by the LPR policy. Travel demand changes are assessed by the relative variation in taxi ridership in each traffic analysis zone based on the taxi GPS data. Built environment variables are measured using the transportation network data and the Baidu Map Service points of interest (POI) data. The results show that regions with a higher level of public transportation service and a higher degree of the land mix have a stronger resilience to the vehicle restriction policy. Besides, the contribution rate of public transportation is stable as a whole, while the contribution rate of richness depends on specific types of land use. The conclusions in this study can provide in-depth insights into the influence of the LPR policy and underpin traffic complementary policies to ensure the effectiveness of LPR.

入藏号: WOS:000556341000001

语言: English 文献类型: Article **KeyWords Plus:** POLLUTION; SELECTION; PATTERNS; CHINA; CAR;

MANAGEMENT; DIVERSITY; IMPACT

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#### 第 6 条, 共 29 条

标题: A Cooperative Data Mining Approach for Potential Urban Rail Transit Demand Using Probe Vehicle Trajectories

作者: Cheng, XY (Cheng, Xiaoyun); Huang, K (Huang, Kun); Qu, L (Qu, Lei); Li, L (Li, Li)

来源出版物: IEEE

ACCESS 卷: 8 页: 24847-24861 **DOI:** 10.1109/ACCESS.2020.2970863 出版

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摘要: Promoting the use of public transportation is an important approach to develop sustainable mobility. However, lots of potential users of public transportation chose taxi, a semi-private mode for convenience. In this study, we first define this potential urban rail transit demand based on its spatiotemporal features. Then a novel data mining method is proposed to ascertain the potential urban rail transit demand from taxi trajectory data

through considering spatial and temporal constraints simultaneously. Two features of the potential demand, i.e., the zero rates and volatility, are obtained by the combination of statistical and feature extraction (local neighbor descriptive pattern, LNDP) techniques. They are used to classify the urban rail transit stations into different categories which need different improvement measures to promote the attraction to the potential users. The effectiveness of the proposed method is tested using the GPS trajectory data of Shanghai collected from over 10,000 taxis in 12 consecutive days. We find that most urban rail transit stations have the potential to absorb the regular part of taxi ridership. Moreover, obvious imbalances exist between access and egress potential travel demands at these stations. The results show that metro stations can be classified into six groups according to the time-varying laws of potential travel demand, four of which need urgent measures. These findings provide useful insights for developing more effective and targeted strategies to encourage travelers to shift to public transportation. The estimated method of potential demand is the prerequisite for further optimization models.

入藏号: WOS:000524655600008

语言: English 文献类型: Article

作者关键词: Public transportation; taxi GPS trajectory data; travel spatiotemporal

pattern; urban rail transit station

**KeyWords Plus:** LOCAL BINARY PATTERNS; TAXI; ACCESS; NETWORK; CHOICE

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#### 第7条,共29条

标题: The Response of Urban Travel Mode Choice to Parking Fees considering Travel Time Variability

作者: Ding, L (Ding, Ling); Yang, X (Yang, Xu)

来源出版物: ADVANCES IN CIVIL ENGINEERING 卷: 2020 文献

号: 8969202 **DOI**: 10.1155/2020/8969202 出版年: JUL 29 2020

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引用的参考文献数:41

摘要: Increasing automobile use leads to higher costs for traveling associated with emissions, congestion, noise, and other impacts. One option to address this is to introduce high parking charges to reduce the demand for automobile use and encourage the travel mode switch to public transport. To estimate commuters' mode choice behavior in response to high parking fees, commuters from Nanjing completed an individually customized discrete choice survey in which they chose between driving and taking the bus or metro when choices varied in terms of time and cost attributes. Multinomial logit models were used to estimate commuters' responses to high parking charges. In the models, the variability of travel times is considered and analyzed in the stated mode choice models. The results suggest that increases in costs of driving will lead to a great reduction in driving demand. The travel time reliability ratio is 0.50 and the value of each minute late is almost 5.0 times more than the average travel time with the restriction of the maximum allowed delays. The methods used in this study could be adopted to estimate the effect of variable pricing strategies on mode choice responses for different trip purposes. The high value given to travel time variability has implications for transport policy in terms of decision making with respect to new pricing strategies. Moreover, the valuation of travel time savings taken into account in this study would be helpful to better understand the effect of high parking fees.

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语言: English 文献类型: Article

**KeyWords Plus:** COMMUTERS VALUATION; TRANSPORT; DEMAND;

METAANALYSIS; POLICIES; VALUES

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# 第8条,共29条

标题: What is 'neighborhood walkability'? How the built environment differently correlates with walking for different purposes and with walking on weekdays and weekends

作者: Gao, J (Gao, Jie); Kamphuis, CBM (Kamphuis, Carlijn B. M.); Helbich, M (Helbich, Marco); Ettema, D (Ettema, Dick)

来源出版物: JOURNAL OF TRANSPORT GEOGRAPHY 卷: 88 文献号: 102860 **DOI:** 10.1016/j.jtrangeo.2020.102860 出版年: OCT 2020

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摘要: Residential environments are associated with people's walking behavior. Transit-related, non-transit-related, and recreational walking may be differently associated with residential environments on weekdays and weekends, but empirical evidence is scarce. We therefore examined 1) to which extent these types of walking correlated with natural and built environmental characteristics of residential neighborhoods, 2) how these correlations differ for walking on weekdays and weekends, and 3) what substitution and complementarity effects between different types of walking exist. Our sample comprised 92,298 people aged >= 18 years from the pooled Dutch National Travel Survey 2010-2014. Multivariate Tobit regression models were used to assess the associations between the natural and built environment and the three types of walking (in average minutes per day). Our models accounted for cross-correlations between the walking types. Our results showed that denser residential areas encouraged both longer transit-related and non-transit-related transport walking on weekdays and weekends, whereas lower density neighborhoods were positively associated with

recreational walking on weekdays. Shorter distances to public transport were only significantly associated with transit-related transport walking on weekdays. Shorter distances to daily facilities were positively associated with non-transit-related transport on weekdays. No significant associations between built environment and recreational walking were found on weekends. Additionally, some compensation effects between different types of walking seem to be at play: during weekends, recreational walking was inversely correlated with transit-related transport walking. Residential environments seem to affect walking types in a different way, suggesting that one size fits all policies might be less effective. Intervention strategies should be tailored for each walking type separately.

入藏号: WOS:000582208900038

语言: English 文献类型: Article

作者关键词: Walking behavior; Walking for transit; Non-transit-related transport walking; Recreational walking; Natural and built environment; The Netherlands

**KeyWords Plus:** PHYSICAL-ACTIVITY LEVELS; PUBLIC-TRANSIT; ACTIVE TRAVEL; TRANSPORTATION; MODE; WEATHER; ADULTS; TRIP; TIME; UTILITARIAN

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第9条,共29条

标题: Prevalence of alternative processing rules in the formation of daily travel satisfaction in the context multi-trip, multi-stage, multi-attribute travel experiences

作者: Gao, YN (Gao, Yanan); Rasouli, S (Rasouli, Soora); Timmermans, H (Timmermans, Harry); Wang, YQ (Wang, Yuanqing)

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摘要: Requesting respondents to provide satisfaction ratings for multi-stage trips or daily travel experiences implies they have to value each stage, respectively trip, based on memory recall and then cognitively integrate these judgments into the requested satisfaction rating. Our knowledge about the prevalence of alternate processing rules that may be used to arrive at trip satisfaction ratings is very limited. Research on this topic in travel behavior analysis is very scarce indeed. In contributing to the research on travel satisfaction, we therefore compare the performance of different processing rules using data on satisfaction with public transport trips from Xi'an, China. Based on the results of this study, we found the peak-end rule, except for the disjunctive rule, consistently had the lowest explained variance, also after controlling for socio-demographics, mood and personality traits. Rather, for all estimated models, the conjunctive processing rule had the highest associated explained variance. It suggests that the trip stage, respectively trip, with the lowest satisfaction dominates overall satisfaction. Also, we did not find much evidence of a recency effect. Rather, the satisfaction of the first trip or stage has higher marginal effects on overall satisfaction than more recent trips or stages.

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作者关键词: Travel satisfaction; Multi-stage trips; Processing rules; Mood; Personality traits

**KeyWords Plus:** SERVICE QUALITY; TRANSIT SERVICE; PERCEPTIONS; METHODOLOGY; USERS

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## 第 10 条, 共 29 条

标题: Multiple Utility Analyses for Sustainable Public Transport Planning and

Management: Evidence from GPS-Equipped Taxi Data in Haikou

作者: Gui, JW (Gui, Jiawei); Wu, QQ (Wu, Qunqi) 来源出版物: SUSTAINABILITY 卷: 12 期: 19 文献 号: 8070 **DOI**: 10.3390/su12198070 出版年: OCT 2020

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摘要: The transportation utility values calculated by traditional utility methods are not comprehensive. Some objects and factors are ignored in traditional utility methods, and this narrow perspective is their primary drawback. In intelligent transportation systems, it is necessary to calculate transportation utility for promoting public traffic planning and management. To build a sustainable intelligent transportation system, modified utility methods are essential to analyze transportation utility in a comprehensive way with innovative technologies and efficient communication systems. To solve the disadvantages of traditional utility methods, it is necessary to establish a new method to build sustainable public transport in the future. In this study, the Multiple Utility Method and Transportation Utility Method are proposed for public transport planning and management from multiple perspectives. A sample is presented to provide a better description, and 69,174 GPS-equipped taxi data in Haikou are adopted for the application

of the Transportation Utility Method. The results show that the transportation utility values calculated by the Transportation Utility Method are more comprehensive than the transportation utility calculated by traditional utility methods. This indicates that it is necessary to calculate transportation utility from multiple perspectives based on the Transportation Utility Method. Future directions could include improving the methods, considering more factors, expanding the data used, and extrapolating this research to other cities around the world with similar urban metrics and urban form.

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语言: English 文献类型: Article

作者关键词: utility analysis; multiple utility; public transport; taxi service; GPS data **KeyWords Plus:** LINK TRAVEL-TIME; SERVICE; VEHICLES; MAXIMIZATION; DRIVERS; SYSTEM; SAFETY; SPEED; INFRASTRUCTURE; ACCESSIBILITY 地址: [Gui, Jiawei] Changan Univ, Coll Transportat Engn, Xian 710064, Peoples R China.

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# 第 11 条, 共 29 条

标题: Entropy-Based Effect Evaluation of Delineators in Tunnels on Drivers' Gaze Behavior

作者: Han, XY (Han, Xueyan); Shao, Y (Shao, Yang); Yang, SW (Yang, Shaowei); Yu, P (Yu, Peng)

来源出版物: ENTROPY 卷: 22 期: 1 文献号: 113 **DOI**: 10.3390/e22010113 出版年: JAN 2020

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摘要: Driving safety in tunnels has always been an issue of great concern. Establishing delineators to improve drivers' instantaneous cognition of the surrounding environment in tunnels can effectively enhance driver safety. Through a simulation study, this paper explored how delineators affect drivers' gaze behavior (including fixation and scanpath) in tunnels. In addition to analyzing typical parameters, such as fixation position and fixation duration in areas of interest (AOIs), by modeling drivers' switching process as Markov chains and calculating Shannon's entropy of the fit Markov model, this paper quantified the complexity of individual switching patterns between AOIs under different delineator configurations and with different road alignments. A total of 25 subjects participated in this research. The results show that setting delineators in tunnels can attract drivers' attention and make them focus on the pavement. When driving in tunnels equipped with delineators, especially tunnels with both wall delineators and pavement delineators, the participants exhibited a smaller transition entropy Ht and stationary entropy Hs, which can greatly reduce drivers' visual fatigue. Compared with left curve and right curve, participants obtained higher Ht and Hs values in the straight section.

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语言: English 文献类型: Article

作者关键词: tunnel safety; delineator post configurations; entropy; gaze behavior;

driving fatigue

**KevWords Plus: ATTENTION** 

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## 第 12 条, 共 29 条

标题: Optimal Multimodal Travelway Design for an Urban Street Network

作者: Huang, Y (Huang, Yan); Li, ZZ (Li, Zongzhi)

来源出版物: IEEE

ACCESS 卷: 8 页: 187700-187712 DOI: 10.1109/ACCESS.2020.3030234 出版

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摘要: This study introduces a bi-level model for optimal travelway design of an urban street network by successively executing a lower-level model for traffic assignments and an upper-level model for network travel time minimization. A computational experiment is conducted for optimal travelway design of a 4-square-km urban street network containing 25 signalized intersections, 80 street segments, and 5 bus routes that accommodates 62,640, 43,200, and 33,120 person-trips per hour in AM/PM peak, adjacent-to-peak, and off-peak periods, respectively. Model execution results indicate that adopting a higher number of narrow lanes for auto use only and auto/bus shared use could potentially lead to increases in auto mode share and savings of network total travel time. More narrow lanes for auto use could raise auto speeds, but the auto/bus shared use of narrow travel lanes could slightly fluctuate bus speeds. Further converting narrow lanes for shared use by autos and buses to exclusive bus lanes (EBLs) could enlarge bus mode share, reduce network total travel time, slightly elevate auto speeds, and drastically increase bus speeds. The proposed model could be augmented to incorporate optimization of networkwide intersection signal timing plans, bus signal priorities, and bus dispatching frequencies into optimal travelway design.

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语言: English 文献类型: Article

作者关键词: Meters; Geometry; Resource management; Minimization; Computational modeling; Genetic algorithms; Timing; Multimodal; optimization; street network; travelway; urban area

**KeyWords Plus:** EXCLUSIVE BUS LANES; TRANSIT PRIORITY; OPTIMIZATION; WIDTH

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# 第 13 条, 共 29 条

标题: Estimating life-cycle CO2 emissions of urban road corridor construction: A case study in Xi'an, China

作者: Li, D (Li, Di); Wang, YQ (Wang, Yuanqing); Liu, YY (Liu, Yuanyuan); Sun, SJ (Sun, Sijia); Gao, YN (Gao, Yanan)

来源出版物: JOURNAL OF CLEANER PRODUCTION 卷: 255 文献号: 120033 **DOI**: 10.1016/j.jclepro.2020.120033 出版年: MAY 10 2020

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摘要: The carbon dioxide (CO2) emissions characteristics of urban roads together with the corridors' municipal construction subprojects, such as drainage, water supply, power pipeline and illumination, are important for estimating the CO2 emissions for urban transportation. This paper aims to analyze the differences in the CO2 emission characteristics of one typical construction of Chinese urban road corridor in which the structure, materials and technologies are different with other published cases, to identify the important factors of the CO2 emissions and to provide some improving administration suggestions for the research type road. Choosing an example, which is the main urban road (Qinling) reconstruction project in Xi'an city, the documents of construction organization and the design budget estimation of the road are obtained, collected the construction process, machinery type and work time, and transportation distance as three type engineering quantities from five subprojects. Furthermore, the life-cycle assessment (LCA) and uncertainty analysis were applied for Qinling road corridor. The results are: (1) The CO2 emissions of the road subproject accounts for 53.19% of the whole corridor; (2) The CO2 emissions of the lime-fly ash, cement and lime accounts for 26.86%, 19.59%, 15.3% of the whole corridor respectively; (3) The CO2 emissions of on-site transportation, earth work, road building, hoisting accounts for 4.94%, 2.07%, 1.47%, 0.74% of the whole corridor, respectively; (4) The greater CO2 emissions coefficient of elasticity are from the production of lime, cement and asphalt concrete, which is 0.436, 0.134 and 0.125, respectively; (5) Compared with Route 35 reconstruction in New Jersey, the CO2 emissions of Qinling road corridor is 41.5 kg/m(2) higher because of the important role of lime-fly ash base layer. To conclusion, important strategies are to decrease the emissions of production of lime and cement, to controll the inefflecient movement of machinery, and to adopt cleaner materials in the base layer. (C) 2020 Published by Elsevier Ltd.

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语言: English 文献类型: Article

作者关键词: LCA; Municipal facilities; Uncertainty and sensitivity analysis; Emission

factor; Spreadsheet; Lime and cement

**KeyWords Plus:** GREENHOUSE-GAS EMISSIONS; CARBON-DIOXIDE EMISSIONS; HIGHWAY CONSTRUCTION; ASPHALT; MAINTENANCE; CONSUMPTION; FOOTPRINT; IMPACTS; DEMAND

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## 第 14 条, 共 29 条

标题: Efficiency Evaluation of Bus Transport Operations Given Exogenous Environmental Factors

作者: Li, Q (Li, Qiong); Bai, PR (Bai, Peng Rui); Chen, Y (Chen, Yang); Wei, X (Wei, Xiao)

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摘要: As a mode of green transport that can effectively alleviate urban traffic congestion and improve air quality, bus transport is highly subsidized by governments at all levels in China. Thus, measuring efficiency in the bus transport sector is particularly important. However, few reports in the literature have taken exogenous environmental factors into consideration to evaluate public transport operation efficiency. This may lead to inaccurate evaluation results. This study employs the three-stage DEA model, which can eliminate the impacts of exogenous environmental factors on public bus transport operation to gain real efficiency results. Meanwhile, to further explore how exogenous environmental factors affect bus transport operations, a tobit model is used to analyse the results. The main results of this paper reveal the following: first, exogenous environmental factors have a significant impact on the operational efficiency of bus transport. It is reasonable and necessary to select the three-stage method to eliminate

environmental factors for real bus operation efficiency. Second, the fluctuations of the bus transport efficiency of 30 cities decreased during 2010-2016. The western region has the highest operation efficiency, followed by the eastern and the middle regions. Third, the economic, taxi transport, and urban rail transport have a marked impact on the operational efficiency of bus transport. This paper confirms the important influence of exogenous environmental factors on the efficiency of public transport operations. In addition, this article could help improve the efficiency of urban public transport operations and promote the attractiveness of urban public transport and the amount of green travel.

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**KeyWords Plus:** PUBLIC TRANSPORT; PERFORMANCE EVALUATION; TECHNICAL EFFICIENCY; TRANSIT PERFORMANCE; SYSTEMS; CITY; OWNERSHIP; COMPANIES; MODEL; COST

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#### 第 15 条, 共 29 条

标题: Study on Urban Spatial Function Mixture and Individual Activity Space From the Perspectives of Resident Activity

作者: Liu, LA (Liu, Lina); Chen, H (Chen, Hong); Liu, T (Liu, Tao)

来源出版物: IEEE

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摘要: The research on the relationship between residents' daily activities and urban spatial structure is of considerable significance to urban planning engineering and the organization of urban functions. However, little research considers the perspective of micro-spatial scale or resident perception. The increasing user-generated activity check-in data in social networks provides a database for this research. In this study, we first divided the urban space into nine functions that satisfy the residents' activities, then used the small-scale grid to divide the city blocks and used information entropy to evaluate the mixed degree of land use functions. We then introduced the latent Dirichlet allocation (LDA) topic model to identify 15 mixed patterns of land use functions and each spatial unit's topic distribution. Moreover, the JS divergence index was employed to measure spatial units' similarity, fit the distance-activity intensity decay curve, and studied the influence of the individual spatial function distribution choice. We demonstrate that in urban space, residents' daily activities mold the blending of urban area functions and shift single-function urban planning to mixed-use, consisting of single-function dominant and multi-function mixed. Besides, the functional complementarity between the activity units weakens the distance attenuation effect of the activity-space interaction intensity to some extent. The research on the interaction between active space and spatial activities expect to support the combination of urban land use types, the layout of facilities, and the guidance of residents' activities.

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语言: English 文献类型: Article

作者关键词: Space exploration; Urban areas; Social network services; Graphical models; Distribution functions; Global Positioning System; Sociology; Mixed urban land use; spatial interaction; text analysis; topic modeling

**KeyWords Plus:** MOBILE PHONE; ACCESSIBILITY; OPTIMIZATION; IMPACT; CHINA

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# 第 16 条, 共 29 条

标题: Sequential Route Choice Modeling Based on Dynamic Reference Points and Its Empirical Study

作者: Long, XQ (Long, Xueqin); Hou, CX (Hou, Chenxi); Liu, SS (Liu, Shanshan); Wang, YJ (Wang, Yuejiao)

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摘要: Aiming at the influence of information, we investigate and analyze the sequential route choice behavior under dynamic reference points based on cumulative prospect theory in this paper. An experiment platform collecting the sequential route choices based on C/S structure is designed and four types of information are released to participants, respectively. Real-time travel time prediction methods are then proposed for travelers' decision-making. Using nonlinear regression method, the parameters of the value function and weight function of cumulative prospect theory are estimated under different types of information, respectively. It is found that travelers' behavior showed obvious characteristic of risk pursuit under the circumstance where real-time travel time information is released. Instead, when they have access to descriptive information, they tend to be more conservative.

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语言: English 文献类型: Article

KeyWords Plus: PARAMETER-FREE ELICITATION; PROSPECT-THEORY

PARAMETERS; DECISION; CONTEXT

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#### 第 17 条, 共 29 条

标题: Drivers Route Switching Behavior Based on Group Classification

作者: Long, XQ (Long, Xueqin); Liu, SS (Liu, Shanshan); Zhao, H (Zhao, Huan); Zhou,

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摘要: Drivers & x2019; route switching behavior shows obvious difference when they face various traffic conditions. The article studies the drivers & x2019; route switching behavior based on group classification. Questionnaire combining SP survey and RP survey is carried out to collect the drivers & x2019; route choice behavior under the

influence of individual attributes, daily travel characteristic and traffic conditions. Latent Class Model (LCM) is used to analyze the behavior characteristic. According to the goodness of models, drivers are divided into three categories. Drivers of sensitive pattern will switch route easily which is represented by young people with shorter driver-age. In contrast, drivers of unresponsive pattern will not switch routes easily and the pattern is represented by elder people with longer driver-age. Based on the drivers & x2019; classification results, ordinal logistic model is established. According to the odds ratio of each variable, we find that, age, driver-age, nature of drivers, and travel frequency all affect drivers & x2019; route switching behavior.

入藏号: WOS:000541121800045

语言: English 文献类型: Article

作者关键词: Switches; Biological system modeling; Vehicles; Analytical models; Maximum likelihood estimation; Logistics; Licenses; Travel behavior; route choice; group classification; latent class model; ordinal logistic model

KeyWords Plus: CHOICE BEHAVIOR; REGRET THEORY; INFORMATION

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#### 第 18 条, 共 29 条

标题: Balancing road infrastructure and socioeconomic development in China - Proposed application of the coupling coordinated degree

作者: Lu, XW (Lu, Xinwei); Jones, S (Jones, Steven); Li, L (Li, Li); Han, XY (Han, Xiaoyu)

来源出版物: RESEARCH IN TRANSPORTATION BUSINESS AND

MANAGEMENT 卷: 37 文献号: 100480 DOI: 10.1016/j.rtbm.2020.100480 出版

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入藏号: WOS:000600401700013

语言: English 文献类型: Article

**KeyWords Plus:** INTERNAL MIGRATION; TRANSPORT INFRASTRUCTURE; INCOME INEQUALITY; DRIVING FORCES; GROWTH; ACCESSIBILITY;

URBANIZATION; PROSPERITY; RESOURCE; BENEFITS

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来源出版物页码计数: 10 输出日期: 2021-03-15

### 第 19 条, 共 29 条

标题: Analyzing drivers' perceived service quality of variable message signs (VMS)

作者: Ma, ZL (Ma, Zhuanglin); Luo, MJ (Luo, Mingjie); Chien, SIJ (Chien, Steven I-Jy);

Hu, DW (Hu, Dawei); Zhao, X (Zhao, Xue)

来源出版物: PLOS ONE 卷: 15 期: 10 文献

号: e0239394 **DOI:** 10.1371/journal.pone.0239394 出版年: OCT 21 2020

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摘要: Recent advance in VMS technology has made it viable to ease traffic congestion and improve road traffic efficiency. However, the drivers' low compliance with the posted information may limit its performance to ease traffic congestion and improve traffic safety. This paper explores drivers' attitude to the service quality of VMS system resulted from the identified predominant influencing factors. A questionnaire is developed and used for surveying 9,600 drivers in Beijing, China. The collected data are analyzed with a multiple indicators and multiple causes (MIMIC) model considering different driver categories (e.g., private car driver, office car driver, taxi driver). The results show that the causal relationships between latent variables and socio-demographic characteristic is significant. Driving frequency, attitude towards contents of VMS, drivers' decision-making and the effectiveness of VMS message can directly and indirectly affect driver's perceived quality of service. The attitude towards formats of VMS indirectly affect their QoS resulting from the effectiveness of VMS message, while there is no indirect impact for taxi drivers. Besides, the drivers' decision-making directly affects the perceived quality of service for private car drivers and office car drivers, but there is no impact for taxi drivers. The findings of this study can provide guidance and reference for urban authorities to perform the relevant actions required to meet user expectations.

入藏号: WOS:000585943400045

**PubMed ID: 33085674** 

语言: English 文献类型: Article

KeyWords Plus: LOGIT MODEL; SATISFACTION; INFORMATION; TRANSIT

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## 第 20 条, 共 29 条

标题: Benefits and Risks of the Driving Restriction Policy: A Case Study of Xi'an, China 作者: Ma, ZL (Ma, Zhuanglin); Cui, SS (Cui, Shanshan); Chien, SIJ (Chien, Steven I-Jy); Xiong, Y (Xiong, Ying)

来源出版物: IEEE

ACCESS 卷: 8 页: 99470-99484 DOI: 10.1109/ACCESS.2020.2994375 出版

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摘要: With the deterioration of air pollution and traffic congestion especially in urban areas, the policy restricting cars operating on the road is deemed as an effective strategy to mitigate the negative impacts. After implementing the driving restriction policy (DRP), some benefits were yielded albeit a few problems appeared. It is desirable to assess the benefits and risks of the DRP and thus propose measures to maintain the benefits. A revealed preference (RP) survey was conducted in the field and via the internet. There are 585 valid samples collected, which were classified by socioeconomic factors, and the corresponding reactions were analyzed and compared. The correlation analysis was used to identify significant and independent demographic/characteristic variables. The results show that most travelers perceive benefits from reducing car ownership and have positive views on DRP. However, others would negatively react to the DRP, which is mainly manifested by buying another car, driving during non-restricted hours and traveling against regulations. Furthermore, socio-demographic characteristics show a relatively high correlation with travel mode choice. Automobile is favorable to middle-aged travelers with upper-middle income. Family characteristics (i.e. household structure, pick up children and cars ownership) are also important inducing travelers to use private cars. These findings will be helpful for formulating the DRP to yield greater benefits after implementation.

入藏号: WOS:000541127800045

语言: English 文献类型: Article

作者关键词: Automobiles; Urban areas; Air pollution; Traffic congestion; Roads; Licenses; Driving restriction policy; mode choice; descriptive statistical analysis;

correlation analysis; benefits; risks

KeyWords Plus: AIR-QUALITY; ENVIRONMENTAL ATTITUDES; CAR;

**ACCEPTANCE** 

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# 第 21 条, 共 29 条

作者: Peng, ZP (Peng, Zhipeng); Zhang, H (Zhang, Heng); Wang, Y (Wang, Yan) 来源出版物: INTERNATIONAL JOURNAL OF INJURY CONTROL AND SAFETY PROMOTION 卷: 28 期: 1 页: 58-67 **DOI**: 10.1080/17457300.2020.1837885 提前访

问日期: OCT 2020 出版年: OCT 30 2020

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摘要: The main purpose of this study was to investigate the effect of work-related factors, fatigue, risky behaviours on accident involvement among different age groups of taxi drivers in China. A total of 2391 taxi drivers were selected to complete a self-reported questionnaire about their demographic data and information on working conditions, fatigue, risky behaviours, as well as involvement in traffic accidents between 2014 and 2016. The drivers were divided into three categories according to their age. Then, a set of comparative analyses and three structural equation models were used to analyze the samples of specific age groups. The results indicated that taxi drivers in the younger group rest the least with the most dissatisfaction with income while those in the mid-age group worked the longest time and were charged the most management fee, but the older

Furthermore, two mediating chain processes were confirmed (i.e. 'work-related factors - fatigue - accidents' and 'work-related factors - risky behaviours - accidents') across the three age groups. However, the causes of fatigue, risky behaviours and accidents in different age groups are not exactly the same. These findings suggest that the regulation of the taxi industry should be carefully improved. Incentive policy and education aimed at taxi drivers may also hold promise.

taxi drivers more frequently engaged in risky behaviours and traffic accidents.

入藏号: WOS:000582935900001

**PubMed ID: 33108968** 

语言: English 文献类型: Article

作者关键词: Traffic accident; taxi drivers; age; work-related factors; risky behaviours **KeyWords Plus:** SOCIAL DESIRABILITY; CRASH INVOLVEMENT; DRIVING BEHAVIOR; PERSONALITY; CONTRIBUTE; ATTITUDES; SCALE; TRUCK; ANGER

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来源出版物页码计数: 10 输出日期: 2021-03-15

## 第 22 条, 共 29 条

标题: How does financial burden influence the crash rate among taxi drivers? A self-reported questionnaire study in China

作者: Peng, ZP (Peng, Zhipeng); Wang, YG (Wang, Yonggang); Luo, XY (Luo, Xianyu)

来源出版物: TRAFFIC INJURY

PREVENTION 卷: 21 期: 5 页: 324-329 DOI: 10.1080/15389588.2020.1759046 提

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摘要: Objective: Taxis play an important role in the transportation system of China, but they have a relatively high accident rate. The current study discusses the driver's financial burden in the Chinese context and explores its correlation with working conditions, risky driving behavior, and other characteristics of taxi drivers who are involved in accidents. Method: A total of 2,391 taxi drivers from 29 companies in four Chinese cities were interviewed and then asked to complete a questionnaire concerning their socio-demographic characteristics, working conditions, risky driving behavior, and accident frequency during the previous two years. Given the increase in the management fee (measured in CNY) charged by taxi companies, the drivers were divided into three groups: the "less than 150" group, the" 150 to 180" group and the "over 180" group, where were named Group 1, Group 2 and Group 3, respectively. Finally, the zero-inflated Poisson model was used to investigate the factors that contributed to the accident rate for each group. Result: The significant factors that lead to accidents differed significantly for drivers with different levels of financial burden. First, most of the factors were weakly correlated with the crash rate among Group 1 drivers. Second, many factors related to working conditions and risky driving behavior were significant for drivers in Groups 2 and 3, while working hours and off-duty days were significant only for drivers in Group 3. Third, working hours were negatively correlated with accident rates for drivers in Group 3, and the drivers who suffered from the heaviest financial burden were most

affected by fatigue and sleep problems. Conclusion: Financial burden is the root cause behind the propensity of taxi drivers to be involved in accidents. Taxi companies should find ways to reduce drivers' expenses, and new technologies, such as taxi-calling or location and navigation based on mobile applications, should be introduced into the traditional taxi industry.

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**PubMed ID: 32363927** 

语言: English 文献类型: Article

作者关键词: Taxi drivers; financial burden; workload conditions; risky driving

behaviors; zero-inflated Poisson model

**KeyWords Plus:** DRIVING BEHAVIOR; INJURY SEVERITY; HONG-KONG;

ATTITUDES; FATIGUE; ANGER; TIME; RISK

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## 第 23 条, 共 29 条

标题: Aberrant Driving Behaviours on Risk Involvement among Drivers in China 作者: Shao, HP (Shao, Hai-peng); Yin, J (Yin, Juan); Yu, WH (Yu, Wen-hao); Wang, QL (Wang, Qiu-ling)

来源出版物: JOURNAL OF ADVANCED TRANSPORTATION 卷: 2020 文献

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摘要: The purpose of this study is to validate the version of Driver Behaviour Questionnaire (DBQ) by considering distractions, fatigue, and drunk driving, the main reasons for accidents in China, as independent parts of violations and errors and further explore the effects of demographic/driving variables and all factors on risk involvement (accident involvement and penalized points). 241 drivers filled in a self-completion questionnaire with 28 items conducted in Xi'an in August 2018. Exploratory factor analysis confirmed a five-factor structure, including violations, distracted driving, errors, drunk driving, and fatigued driving. The frequency of aberrant driving behaviours indicated that distractions were the most prevalent behaviours followed by fatigue. The results showed that drivers with lower education and longer annual mileages were positive with accident involvement while there was no significance in penalized points. Violations and distractions were important factors causing both accidents and penalized points. Therefore, it is effective to reduce accident involvement by establishing educational training and related laws or installing intelligent monitor vehicle equipment to warn drivers to improve safety.

入藏号: WOS:000553053800001

语言: English 文献类型: Article

**KeyWords Plus:** ACCIDENT INVOLVEMENT; VIOLATIONS; ERRORS;

QUESTIONNAIRE; PERCEPTION; LEVEL; SEX; AGE; DBQ

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## 第 24 条, 共 29 条

标题: Optimizing flight equencing and gate assignment considering terminal configuration and walking time

作者: Xiao, M (Xiao, Mei); Chien, S (Chien, Steven); Schonfeld, P (Schonfeld, Paul); Hu, DW (Hu, Dawei)

来源出版物: JOURNAL OF AIR TRANSPORT MANAGEMENT 卷: 86 文献

号: 101816 **DOI:** 10.1016/j.jairtraman.2020.101816 出版年: JUL 2020

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摘要: Operating airline hub-and-spoke networks (HSN) rather than direct flights among city pairs may significantly reduce supplier cost; however, passengers' travel time may significantly increase due to increased transfer and in-flight time. The costs considered in this study are hub-related and incurred by passengers and aircraft (i.e., passenger transfer, flight dwelling, and gate occupancy). The objective is to minimize the total cost by optimizing flight sequence (i.e., arrivals and departures) and gate assignment, while considering transfer speed, transfer demand, flight size, gate size and terminal configuration. A real-world HSN whose hub airport (HA) is located at Xianyang International Airport (XIY) in Xi'an, China is analyzed. The optimized solutions and their relations to various model parameters are explored.

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语言: English 文献类型: Article

作者关键词: Hub; Flight sequence; Gate assignment; Transfer speed; Transfer; Cost; Genetic algorithm

**KeyWords Plus:** AIRPORT; AIRCRAFT; AIRLINE; MODEL; REPRESENTATION; OPTIMIZATION; ALGORITHMS; HUB

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## 第 25 条, 共 29 条

标题: Crash Risk Assessment of Off-Ramps, Based on the Gaussian Mixture Model Using Video Trajectories

作者: Xu, T (Xu, Ting); Hao, YJ (Hao, Yanjun); Cui, SC (Cui, Shichao); Wu, XQ (Wu, Xingqi); Zhang, ZS (Zhang, Zhishun); Chien, SIJ (Chien, Steven I-Jy); He, YL (He, Yulong)

来源出版物: SUSTAINABILITY 卷: 12 期: 8 文献 号: 3076 **DOI**: 10.3390/su12083076 出版年: APR 2020

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摘要: The focus of this paper is the crash risk assessment of off-ramps in Xi'an. The time-to-collision (TTC) is used for the measurement and cross-comparison of the crash risk of each location. Five sites from the urban expressway in Xi'an were selected to explore the TTC distribution. An unmanned aerial vehicle and a camera were used to collect traffic flow data for 20 min at each site. The parameters, including speed, deceleration rate, truck percentage, traffic volume, and vehicle trajectories, were extracted from video images. The TTCs were calculated for each vehicle. The Gaussian mixture model (GMM) was proposed to predict the TTC probability density functions (PDFs) and cumulative density functions (CDFs) for five sites. The Kolmogorov-Smirnov (K-S) test indicated that the samples followed the estimated GMM distribution. The relationship between the crash risk level and influencing factors was studied by an ordinal logistic regression model and a naive Bayesian model. The results showed that the naive Bayesian model had an accuracy of 86.71%, while the ordinal logistic regression model had an accuracy of 84.81%. The naive Bayesian model outperformed the ordinal logistic regression model, and it could be applied to the real-time collision warning system.

入藏号: WOS:000535598700009

语言: English 文献类型: Article 作者关键词: time-to-collision; Gaussian mixture model; risk assessment; E-M algorithm; ordinal logistic regression model; naive Bayesian

KeyWords Plus: COLLISION; TIME; LANE

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## 第 26 条, 共 29 条

标题: Determination of the Peak Hour Ridership of Metro Stations in Xi'an, China Using Geographically-Weighted Regression

作者: Yu, LJ (Yu, Lijie); Cong, YR (Cong, Yarong); Chen, KM (Chen, Kuanmin)

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摘要: The ridership of a metro station during a city's peak hour is not always the same as that during the station's own peak hour. To investigate this inconsistency, this study introduces the peak deviation coefficient to describe this phenomenon. Data from 88 metro stations in Xi'an, China, are used to analyze the peak deviation coefficient based on the geographically weighted regression model. The results demonstrate that when the land around a metro station is mainly land for work, primary and middle schools, and residences, its station's peak hour is consistent with the city's peak hour. Additionally, the station's peak hour is more likely to deviate from the city's peak hour for suburban stations. There are two ridership options when designing stations, namely the extra peak hour ridership during a city's peak hour and that during a station's peak hour, and the larger of the two is used to design metro stations. The mixed land use ratio must be considered in urban land use planning, because although non-commuting land can mitigate the traffic pressure of a city's peak hour, it may cause the deviation of the station's peak hours from that of the city.

入藏号: WOS:000523751400102

语言: English 文献类型: Article

作者关键词: urban rail transit station; peak deviation coefficient; transportation and land use; geographically weighted regression; station design

**KeyWords Plus:** TRANSIT RIDERSHIP; LAND-USE; LEVEL; NETWORK; TRAVEL; MODEL

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## 第 27 条, 共 29 条

标题: Taxi High-Income Region Recommendation and Spatial Correlation Analysis

作者: Yuan, CW (Yuan, Changwei); Geng, XR (Geng, Xinrui); Mao, XH (Mao, Xinhua)

来源出版物: IEEE

ACCESS 卷: 8 页: 139529-139545 DOI: 10.1109/ACCESS.2020.3012689 出版

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摘要: Taxis provide essential transport services in urban areas. In the taxi industry, the income level remains a cause of concern for taxi drivers as well as regulators. Analyzing the variation trend of taxi operation efficiency indicators throughout the day, mining high-income orders hot-spots and high-income regions at different periods, will effectively improve the average hourly incomes (AHI) of drivers. This paper selects the order data for each day of holidays, working days, and non-working days through the taxi order dataset of October 2019 in Xi'an. Firstly, we analyze the variation trend of taxi operation efficiency indicators in the three days. We next divide the orders into four income levels based on the Natural Breaks accordingly. Then, we use Tyson polygon and mash map matching methods to visualize the high-income orders hot-spots and high-income regions. It is significantly to analyze and summarize the visualization results. Finally, we compute the Moran'I index to measure the spatial correlation between high-income orders regions and high-income regions. The results show that (1) the number and the spatial distribution of high-income orders hot-spots and high-income regions at different periods are different. (2) Some places are hot-spots, but neither high-income orders hot-spots nor high-income regions. (3) The high-income orders regions and high-income regions have a strong correlation in spatial distribution. This study provides suggestions and insights to taxi companies and taxi drivers to increase their average hourly income (AHI) and enhance the efficiency of the taxi industry.

入藏号: WOS:000558163000001

语言: English 文献类型: Article

作者关键词: Public transportation; Vehicles; Global Positioning System; Correlation; Urban areas; Industries; Market research; High-income region; hot-spots; Moran'I; taxi operation efficiency

KeyWords Plus: CABDRIVERS; BEHAVIOR

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### 第 28 条, 共 29 条

标题: Risk Perception Sensitivity of Cyclists Based on the Cox Risk Perception Model 作者: Zhao, D (Zhao, Dan); Zhang, SR (Zhang, Shengrui); Zhou, B (Zhou, Bei); Jiao, SY (Jiao, Shuaiyang); Yang, L (Yang, Ling)

来源出版物: SUSTAINABILITY 卷: 12 期: 7 文献 号: 2613 **DOI**: 10.3390/su12072613 出版年: APR 2020

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摘要: To promote the sustainable development and safety of bicycle traffic, survival analysis of the risk perception sensitivity of cyclists is proposed. The cumulative

probability of survival serves as an index of risk perception sensitivity, and a Cox regression model is established. The proposed method is applied to middle school cyclists, and the factors of their risk perception are analyzed. Data are collected by questionnaire and traffic conflict survey and are quantified by factor analysis. The model results show that active and extroverted personality, negative peer influence, unsafe riding behavior intention, non-motor vehicle flow and speed, and a lack of separation facilities have negative correlations with risk perception sensitivity. Positive attitude towards traffic rules, good family education, heightened traffic safety awareness, motor vehicle flow and speed, pedestrian flow, and non-motorized lane width have positive correlations with risk perception sensitivity. The conflict type has no correlation with risk perception sensitivity. This study aims to improve the sensitivity of risk perception, prevent traffic conflicts and provide a theoretical basis for risk perception research on vulnerable traffic participants.

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语言: English 文献类型: Article

作者关键词: risk perception; middle school cyclists; survival analysis; Cox model **KeyWords Plus:** COMMUTER CYCLISTS; SAFETY; BEHAVIOR; IMPACT

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# 第 29 条, 共 29 条

标题: Comparing Factors Affecting Injury Severity of Passenger Car and Truck Drivers 作者: Zhou, B (Zhou, Bei); Wang, XQ (Wang, Xiqing); Zhang, SR (Zhang, Shengrui); Li, ZZ (Li, Zongzhi); Sun, SF (Sun, Shaofeng); Shu, K (Shu, Kun); Sun, Q (Sun, Qing) 来源出版物: IEEE

ACCESS 卷: 8 页: 153849-153861 **DOI**: 10.1109/ACCESS.2020.3018183 出版年: 2020

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摘要: This study aims to explore factors affecting passenger car and truck driver injury severity in passenger car-truck crashes. Police-reported crash data from 2007 to 2017 in Canada are collected. Two-vehicle crashes involving one truck and one passenger car are extracted for modeling. Different injury severities are not equally represented. To address the data imbalance issue, this study applies four different data imbalance treatment approaches, including over-sampling, under-sampling, a hybrid method, and a cost-sensitive learning method. To test the performances of different classifiers, five classification models are used, including multinomial logistic regression, Naive Bayes, Classification and Regression Tree, support vector machine, and eXtreme Gradient Boosting (XGBoost). In both the passenger car driver and truck driver injury severity analysis, XGBoost combined with cost-sensitive learning generates the best results in terms of G-mean, area under the curve, and overall accuracy. Additionally, the Shapley Additive Explanations (SHAP) approach is adopted to interpret the result of the best-performing model. Most of the explanatory variables have similar effects on passenger car and truck driver fatality risks. Nevertheless, six variables exhibit opposite effects, including the age of the passenger car driver, crash hour, the passenger car age, road surface condition, weather condition and the truck age. Results of this study could provide some valuable insights for improving truck traffic safety. For instance, properly installing traffic control devices could be an effective way to reduce fatality risks in passenger car-truck crashes. Besides, passenger car drivers should be extremely cautious when driving between midnight to 6 am on truck corridors.

入藏号: WOS:000564185900001

语言: English

文献类型: Article

作者关键词: Driver injury severity; data imbalance; interpretable machine learning;

truck crashes

KeyWords Plus: CRASHES; CLASSIFICATION; CLASSIFIERS; INSTABILITY

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### 公路学院

#### 第 1 条, 共 18 条

标题: Reduce Bus Bunching with a Real-Time Speed Control Algorithm Considering Heterogeneous Roadway Conditions and Intersection Delays

作者: Deng, YJ (Deng, Ya-Juan); Liu, XH (Liu, Xiao-Hong); Hu, XB (Hu, Xianbiao); Zhang, M (Zhang, Min)

来源出版物: JOURNAL OF TRANSPORTATION ENGINEERING PART A-SYSTEMS 卷: 146 期: 7 文献号: 04020048 DOI: 10.1061/JTEPBS.0000358 出版年: JUL 1 2020

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摘要: This paper investigates bus bunching issues encountered with a single bus line. A real-time speed control model was proposed with the objective of minimizing variations in bus headway. Three cases of a typical road infrastructure for bus lines were studied. Two main factors that influence the stability of bus service-namely, signalized intersection delays and heterogeneous roadway conditions-were studied in the modeling process. In addition, other common variables were considered, including the time required for passengers to board a bus and alight from it. Compared with findings from prior literature, that frequently assumed homogeneous roadway infrastructure conditions and ignored intersection delays. The built model output the degree of speed adjustment required in accordance with different roadway configurations and the congestion level at each road section. A case study was designed to test the performance of the proposed model, based on the data collected from 40 bus stops, on Bus route No. 600 in Xi'an, China. Results showed that the proposed model could effectively restrain the problems posed by headway deviations and reduce travel time for the passengers.

入藏号: WOS:000536101500019

语言: English 文献类型: Article

作者关键词: Public transit (PT); Bus bunching; Real-time speed control; Headway

variation

KeyWords Plus: RELIABILITY; STRATEGIES; MODEL

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## 第 2 条, 共 18 条

标题: Analysis of Deformation Characteristics of Foundation-Pit Excavation and Circular Wall

作者: Gao, XH (Gao, Xuhe); Tian, WP (Tian, Wei-ping); Zhang, ZP (Zhang, Zhipei)

来源出版物: SUSTAINABILITY 卷: 12 期: 8 文献 号: 3164 **DOI**: 10.3390/su12083164 出版年: APR 2020

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摘要: The surrounding ground settlement and displacement control of an underground diaphragm wall during the excavation of a foundation pit are the main challenges for engineering safety. These factors are also an obstacle to the controllable and sustainable development of foundation-pit projects. In this study, monitoring data were analyzed to identify the deformation law and other characteristics of the support structure. A three-dimensional numerical simulation of the foundation-pit excavation process was performed in Midas/GTS NX. To overcome the theoretical shortcomings of parameter selection for finite-element simulation, a key data self-verification method was used. Results showed that the settlement of the surface surrounding the circular underground continuous wall was mainly affected by the depth of the foundation-pit excavation. In addition, wall deformation for each working condition showed linearity with clear staged characteristics. In particular, the deformation curve had obvious inflection points, most of which were located deeper than 2/3 of the overall excavation depth. The characteristics of the cantilever pile were not obvious in Working Conditions 3-9, but the distribution of the wall body offset in a D-shaped curve was evident. Deviation between the monitoring value of the maximal wall offset and the simulated value was only 4.31 %. The appropriate physical and mechanical parameters for key data self-verification were proposed. The concept of the circular-wall offset inflection point is proposed to determine the distribution of inflection-point positions and offset curves. The method provides new opportunities for the safety control and sustainable research of foundation-pit excavations.

入藏号: WOS:000535598700097

语言: English 文献类型: Article

作者关键词: circular foundation pit; construction monitoring; numerical simulation; underground continuous wall

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## 第 3 条, 共 18 条

标题: An Extended Car-Following Model Considering the Drivers' Characteristics under a V2V Communication Environment

作者: Jiao, SY (Jiao, Shuaiyang); Zhang, SR (Zhang, Shengrui); Zhou, B (Zhou, Bei);

Zhang, ZX (Zhang, Zixuan); Xue, LY (Xue, Liyuan)

来源出版物: SUSTAINABILITY 卷: 12 期: 4 文献

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摘要: In intelligent transportation systems, vehicles can obtain more information, and the interactivity between vehicles can be improved. Therefore, it is necessary to study car-following behavior during the introduction of intelligent traffic information technology. To study the impacts of drivers' characteristics on the dynamic characteristics of car-following behavior in a vehicle-to-vehicle (V2V) communication environment, we first analyzed the relationship between drivers' characteristics and the following car's optimal velocity using vehicle trajectory data via the grey relational analysis method and then presented a new optimal velocity function (OVF). The boundary conditions of the new OVF were analyzed theoretically, and the results showed that the new OVF can better describe drivers' characteristics than the traditional OVF. Subsequently, we proposed an extended car-following model by combining V2V communication based on the new OVF and previous car-following models. Finally, numerical simulations were carried out to explore the effect of drivers' characteristics on car-following behavior and fuel economy of vehicles, and the results indicated that the proposed model can improve vehicles' mobility, safety, fuel consumption, and emissions in different traffic scenarios. In conclusion, the performance of traffic flow was improved by taking drivers' characteristics into account under the V2V communication situation for car-following theory.

入藏号: WOS:000522460200270

语言: English 文献类型: Article

作者关键词: traffic flow; car-following model; optimal velocity; drivers' characteristics;

numerical simulation

**KeyWords Plus:** LATTICE HYDRODYNAMIC MODEL;

CELLULAR-AUTOMATON MODEL; TRAFFIC FLOW; FUEL CONSUMPTION; DYNAMICAL MODEL; FULL VELOCITY; VEHICLES; SPEED; SIMULATION;

#### **STABILITY**

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# 第 4 条, 共 18 条

标题: Investigation into Creep Characteristics and Model of Recycled Construction and Demolition Waste Used in Embankment Filler

作者: Li, Z (Li, Zhe); Yan, SH (Yan, Shihao); Liu, LL (Liu, Lulu); Yang, J (Yang, Jia)

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摘要: The creep deformation of recycled construction and demolition waste (CDW) filler is an important factor affecting road performance. In this paper, a series of laboratory tests, including a compaction test, sieving test, California bearing ratio (CBR) test, creep test and unloading test are conducted on CDW filler. The engineering properties of different ratios of CDW mixture are systematically analyzed, the CBR value of CDW filler meets the requirements of an embankment. The creep type of CDW filler under a test load is stable creep, the results of the creep characteristics are analyzed from a microscopic point of view. The filler with a 7:2:1 ratio (brick slag: concrete: mortar) has the densest structure, which is dense and less porous, and the deformation is the smallest. Reasonable proportion control is the key to reducing embankment deformation. The improved Burgers model, which can better describe the creep characteristics of CDW filler, and the effects of load and ratio on the creep parameters are analyzed using the equivalent creep compliance. This study is of great significance for the promotion of CDW and meets the requirements of sustainable development.

入藏号: WOS:000522470900225

语言: English 文献类型: Article

作者关键词: construction demolition waste; creep deformation; model; saturated condition

KeyWords Plus: BEHAVIOR; MIXTURES; BASE

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## 第 5 条, 共 18 条

标题: Research on Decision-Making Behavior of Discretionary Lane-Changing Based on Cumulative Prospect Theory

作者: Long, XQ (Long, Xueqin); Zhang, LC (Zhang, Liancai); Liu, SS (Liu, Shanshan); Wang, JJ (Wang, Jianjun)

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摘要: In this paper, the decision-making model of discretionary lane-changing is established using cumulative prospect theory (CPT). Through analyzing the vehicles' dynamic running states, safety spacing calculating approaches for discretionary lane-changing and lane-keeping have been put forward firstly. Then, based on CPT, a lane-changing decision model with accelerating space as its utility is proposed by estimating the difference between actual spacings and the safety spacings for discretionary lane-changing as well as lane-keeping. In order to calculate the utility of discretionary lane-changing, dynamic reference points and a parameter representing driver's risk preference are introduced into the model. With the real data collected from an urban expressway, the distribution of discretionary lane-changing duration is analyzed, and the model parameters are also calibrated. Furthermore, the applicability of the model is evaluated by comparing with the actual observation and random unity model. Finally, the sensitivity analysis of the model is carried out, that is, assessing the influence degree of each variable on the decision result. The study reveals that the CPT-based model can

describe discretionary lane-changing behavior more accurately, which consider drivers' risk-aversion during decision-making.

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语言: English 文献类型: Article

KeyWords Plus: MODEL; PARAMETERS; SELECTION; SAFETY; RISK

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#### 第 6 条, 共 18 条

标题: Nested Logit Joint Model of Travel Mode and Travel Time Choice for Urban

Commuting Trips in Xi'an, China

作者: Ma, SH (Ma, Shuhong); Yu, ZL (Yu, Zhoulin); Liu, CQ (Liu, Chuanqi)

来源出版物: JOURNAL OF URBAN PLANNING AND

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摘要: Commuter trips are an important part of urban travel, and studying the influencing factors, changing rules, and choice behaviors of urban commuting trips is of great significance for optimizing the urban trip structure. This paper utilizes a nested logit model to investigate commuters' joint choice behavior of commuting time and mode by considering factors including socioeconomic, household, and trip characteristics. Two possible decision-making model structures are proposed: the commuting time-mode structure (time choice is the upper level) and the commuting mode-time structure (mode choice is the upper level). A model specification is conducted in SPSS based on the data of Xi'an urban commuters, and the commuting time-mode structure is demonstrated as the appropriate one by judging the inclusive value of each nest. It indicates that commuters often choose a commuting mode based on commuting time, and the commuting time-mode model is more suitable for fitting commuters' travel choice. The higher the household income, the greater the probability of commuting by taxi or driving alone. Commuting distance strongly and negatively influences mode choice, including walking, bicycling, bus, and taxi. Civil servants, medical staff, teachers, and technical staff are more sensitive to commuting time than are other commuters. Commuters who usually go to work by driving alone may turn to a bus when a car is not available. Increasing total household bicycle ownership will bring competition between bicycle and bus and enhance commuters' willingness to bike to work, especially when the cycling time is above 30 min.

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语言: English 文献类型: Article

作者关键词: Commuters; Commuting time; Commuting mode; Joint choice behavior;

Nested logit model

KeyWords Plus: AIRPORT-CHOICE; ROUTE CHOICE

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## 第7条,共18条

标题: Carbon Emission Calculation Method and Low-Carbon Technology for Use in Expressway Construction

作者: Peng, B (Peng, Bo); Tong, XY (Tong, Xiaoying); Cao, SJ (Cao, Shijiang); Li, WY (Li, Wenying); Xu, G (Xu, Gui)

来源出版物: SUSTAINABILITY 卷: 12 期: 8 文献号: 3219 **DOI**: 10.3390/su12083219 出版年: APR 2020

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摘要: There is a need for a quantitative calculation method for carbon emissions during asphalt pavement construction. In this study, the carbon sources were detected and carbon emission during pavement construction was divided into two parts-the emission resulting from energy consumption and that arising from the volatilization of asphalt mixtures itself. The carbon emission calculation model of energy consumption is presented based on the energy consumption list and calorific value method proposed by the Intergovernmental Panel on Climate Change. The model of the carbon emission from

volatilization of asphalt mixtures was introduced based on a combination of on-site inspection data and the greenhouse gas diffusion rate and calculated volume. Finally, high-carbon emission processes and total carbon emissions were obtained, and the corresponding low-carbon technologies were proposed for different types of carbon emissions. The results show that the ratio of carbon emission generated by energy consumption and the volatilization of asphalt mixtures is 3:2; aggregate and asphalt heating are high-carbon emission processes of energy consumption, while asphalt mixture rolling and mixing are the high-carbon emission processes of asphalt mixture.

Furthermore, the use of natural gas can control carbon emission in energy consumption; low-carbon asphalt mixtures and warm mixing technology can effectively reduce carbon emission from the volatilization of asphalt mixtures. This study lays a theoretical foundation for green pavement construction.

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语言: English 文献类型: Article

作者关键词: road engineering; calculation model; carbon emission of energy consumption; carbon emission from volatilization of asphalt mixture; low-carbon technology

**KeyWords Plus:** LIFE-CYCLE ASSESSMENT; ASPHALT MIXTURES; ENERGY; REDUCTION

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### 第8条,共18条

标题: A Novel Construction Technology for Self-Anchored Suspension Bridge Considering Safety and Sustainability Performance

作者: Wang, XM (Wang, Xiaoming); Wang, XD (Wang, Xudong); Doug, Y (Doug,

You); Wang, CS (Wang, Chengshu)

来源出版物: SUSTAINABILITY 卷: 12 期: 7 文献 号: 2973 **DOI**: 10.3390/su12072973 出版年: APR 2020

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摘要: To promote sustainable development of civil infrastructures, minimizing environmental impact and mobility disruptions have been elevated to a higher priority during decision-making for bridge construction scheme. This study presents a novel temporary pylon-anchor (TPA) technology for construction of self-anchored suspension bridges by considering not only safety performance, but also environmental impacts. A practical assessment method and index of sustainability associated with bridge construction technology are established to facilitate the selection of construction schemes. The sustainability index takes the environmental impact, traffic disruption, onsite construction materials and equipment, onsite construction cost, and onsite construction risk into consideration. The sustainability index associated with both conventional and novel construction methods is assessed and compared in this paper. Specifically, a novel girder-pylon antithrust system (GPAS) is proposed, which is the crucial component of the TPA technology in engineering application. In addition, an analytical approach is developed, considering both global load-carrying capacity and local stress distribution within the design and construction of the GPAS. The applicability and rationality of the

proposed construction technology are illustrated by the successful application in real-world engineering. The field tests and sustainability assessment during the construction stage reveal that the proposed sustainability assessment method and analytical approach can facilitate the implementation of sustainable construction for self-anchored suspension bridges by considering both construction safety and sustainability.

入藏号: WOS:000531558100398

语言: English 文献类型: Article

作者关键词: Sustainable construction; environmental impact and traffic disruptions; self-anchored suspension bridge; design-oriented analytical approach

**KeyWords Plus:** CORRUGATED STEEL WEB; SHEAR RESISTANCE; CONCRETE; BEHAVIOR; DESIGN; COST

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# 第9条,共18条

标题: An "Illumination Moving with the Vehicle" Intelligent Control System of Road Tunnel Lighting

作者: Wang, YQ (Wang, Yaqiong); Cui, YW (Cui, Yiwei); Chen, F (Chen, Feng); Ren,

R (Ren, Rui)

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摘要: To reduce the enormous waste of electric energy in tunnel lighting, an intelligent control system of road tunnel lighting which can realize the effect of illumination moving with the vehicle is proposed. In this system, the group control of LED lamps is realized based on Air Lamp lighting technology through the wide area fusion Internet of Things (WF-IoT). By the group control of LED lamps, the tunnel lighting is divided into several illumination segments. When the vehicle is detected by the surveillance camera, the corresponding LED group can be adjusted to the demand luminance according to the environmental conditions and traffic information. The other LED groups maintain 10% of the maximum luminance to reduce energy consumption. To realize the effect of illumination moving with the vehicle, the structure of the intelligent control system and hardware system is designed, and the length of the illumination segment is calculated. To evaluate the lighting effect of the intelligent control system, a simulation model of tunnel lighting is established. In addition, the energy-saving effect of the intelligent control system can meet the requirements of illumination in a tunnel and have a notable energy-saving effect.

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语言: English 文献类型: Article

作者关键词: tunnel lighting; energy saving; control system; LED; illumination segment

**KeyWords Plus: MODEL** 

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## 第 10 条, 共 18 条

标题: A Bayesian sample selection model based on normal mixture to investigate household car ownership and usage behavior

作者: Wu, N (Wu, Na); Song, X ((Ben) Song, Xiang); Yao, RH (Yao, Ronghan); Yu, Q (Yu, Qian); Tang, CY (Tang, Chunyan); Zhao, SC (Zhao, Shengchuan)

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摘要: Selection bias is an important issue in analyzing household car ownership and usage behavior. If it is not well considered in the modeling process, estimates will be biased. In this paper, we use a Bayesian sample selection model, which accounts for the selection bias, to investigate household car ownership and usage behavior. Employing the approach of normal mixture, the new established model relaxes the bivariate normal assumption in the traditional sample selection model and can capture flexible coupling relationship between car ownership and usage behavior. Moreover, the model does not require specifying any marginal distribution. Three cross validation experiments using simulated data suggest that the new model is effective in revealing parameters' true values and in capturing actual error distribution. Considering overfitting issue, various tests are proposed to determine the most likely number of normal components. After testing, the new model with 3 components has a stronger explanation power in analyzing the interdependence between household car ownership and usage behavior in terms of goodness of fit and generalization ability. By comparison, estimates from the traditional normal model are seriously biased regarding magnitude, significance level, even the sign. Lastly, to test the efficiency of Bayesian normal mixture model, performance of the Copula model is evaluated. The result indicates that the normal mixture model with two components already has a strong power in capturing the general pattern of error distribution, and its goodness of fit has been impressively improved compared with the traditional normal model and the Copula model.

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作者关键词: Sample selection; Normal mixture; Bayesian Markov Chain Monte Carlo; Copula model; Car ownership and usage

**KeyWords Plus:** RESIDENTIAL SELF-SELECTION; DISCRETE-CONTINUOUS MODEL; VEHICLE OWNERSHIP; BUILT ENVIRONMENT;

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### 第 11 条, 共 18 条

标题: Physiological indices and driving performance of drivers at tunnel entrances and exits: A simulated driving study

作者: Xu, JL (Xu, Jinliang); Zhang, XD (Zhang, Xiaodong); Liu, H (Liu, Huan); Yang, KG (Yang, Kaige); Ma, FC (Ma, Fangchen); Li, HR (Li, Haoru); Sun, YF (Sun, Yufei)

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摘要: The entrance and exit sections of a tunnel are the accident black-spots in an expressway. For a safe operation of road tunnels, it is necessary to understand a driver's physiological indices and driving performance when driving through tunnels. In this study, the UC-Win/Road simulation software was used to build 12 tunnel models of different lengths. A simulated driving experiment was carried out in a 6-DoF motion platform. The lateral position of vehicles characterizing the driving performance was measured using the motion platform. Electrocardiogram and eye movement data of 25 recruited drivers were collected simultaneously through the experiment. The spatial changes in a driver's heart rate (HR) growth rate, RMSSD, pupil diameter growth rate and

vehicle lateral deviation within 300 m before and after the tunnel entrance and exit were analyzed to determine the variation rules in the different tunnels. The study identified the length range in the tunnel entrance and exit sections that influences the drivers. A quantitative analysis was further carried out to analyze the relationship between the physiological indices and the driving performance indicator. The results showed that a driver's heart rate fluctuates significantly 250 m before the tunnel entrance and 50 m before the exit. In this region, the pupil diameter increases gradually, and drivers tend to shift the vehicle to the left. At the tunnel exit, the HR and RMSSD are affected significantly by the tunnel length, and the variation is higher in longer tunnels. In comparison, the tunnel length has no significant effect on the physiological indicators and driving performance of the drivers at the entrance and exit.

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KeyWords Plus: TRAFFIC ACCIDENTS; HEART-RATE; REAL

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#### 第 12 条, 共 18 条

标题: A Model for Estimating Passenger-Car Carbon Emissions that Accounts for Uphill, Downhill and Flat Roads

作者: Xu, JL (Xu, Jinliang); Dong, YP (Dong, Yaping); Yan, MH (Yan, Menghua)

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摘要: The geometric longitudinal slope line of a given road significantly effects the carbon emissions of vehicles traversing it. This study was conducted to explore the carbon emission rules of passenger cars on various highway slopes. The law of conservation of mechanical energy, the first law of thermodynamics and the vehicle longitudinal dynamics theory were utilized to determine the influence of slope design indicators on fuel consumption. The energy conversion, fuel consumption, and carbon emission models of passenger cars on a flat straight road, uphill road, and downhill road sections were derived accordingly. Two types of passenger cars were selected for analysis. A field test was carried out to verify the proposed model where the vehicle maintained a cruise speed on flat straight road, uphill road and downhill road with equal gradient and mileage, and continuous longitudinal slope to gather fuel consumption data. The proposed model showed strong accuracy and a maximum error of 9.97%. The main factor affecting the vehicle's carbon emissions on the continuous longitudinal slope was found to be the average gradient. For a round-trip longitudinal slope with a small gradient, the main factor affecting the vehicle's carbon emissions is speed: higher speed results in higher carbon emissions. The results of this study are likely to provide the data for support and a workable reference for the low-carbon highway design and operation.

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语言: English 文献类型: Article

作者关键词: carbon emissions; prediction model; uphill; downhill; continuous longitudinal slope; gradient; low carbon design; two-way traffic; highway

KeyWords Plus: FUEL CONSUMPTION; VEHICLE

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#### 第 13 条, 共 18 条

标题: Investigation of esthetic evaluation and its influencing factors for a tunnel portal based on dynamic vision

作者: Ye, F (Ye, Fei); Su, EJ (Su, Enjie); Wei, YC (Wei, Yanchun); Xu, CX (Xu, Changxin); Liang, X (Liang, Xing)

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摘要: With the development of modern cities, roads, and landscapes, it is becoming increasingly important for infrastructure such as tunnels to provide an esthetically pleasing experience. In this respect, it is necessary to conduct studies that consider the esthetic design of tunnel portals using esthetics research. Regarding the esthetic evaluation of tunnel portals, this paper fully considers the dynamic visual effect from the driver's perspective. This study combines the use of Blender, SpeedTree Modeler Cinema, Adobe Photoshop CS6, and other software for secondary development. These programs are connected to the driving simulation platform Euro Truck Simulator 2 (which is equipped with a driving simulator) to construct a set of driving simulation tests that enable the esthetic evaluation of a tunnel portal. The Banlun Tunnel on the Funing-Longliu Expressway in Yunnan Province, China, is used as a case study, and four impact factors that vary significantly in esthetic design are included: the linearity, color, greening and texture of the portal. Using an orthogonal experimental design, the influence of the esthetic degree was simulated and evaluated, and the order of sensitivity to esthetic factors of a headwall tunnel portal was sequentially determined as follows: the portal texture exerts the maximum impact on the beauty degree of the headwall portal, followed by the portal greening and the portal color, while the portal linearity exerts the minimum impact. The results show that the developed driving simulation test system can be used to determine the sensitivity of esthetic factors for a tunnel portal and obtain an optimal collocation of esthetic factors on different levels; hence, it provides feedback for use in designing the optimum esthetic tunnel portal. This test system can be used as a reference when conducting future evaluations and studies on tunnel portal esthetics.

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## 第 14 条, 共 18 条

标题: Friction Characteristics of Post-Tensioned Tendons of Full-Scale Structures Based on Site Tests

作者: Yuan, HY (Yuan, Haoyun); Li, Y (Li, Yuan); Zhou, B (Zhou, Bin); He, SH (He,

Shuanhai); Wang, PZ (Wang, Peizhi)

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摘要: In the design of prestressing concrete structures, the friction characteristics between strands and channels have an important influence on the distribution of prestressing force, which can be considered comprehensively by curvature and swing friction coefficients. However, the proposed friction coefficient varies widely and may lead to an inaccurate prestress estimation. In this study, four full-scale field specimens were established to measure the friction loss of prestressing tendons with electromagnetic sensors and anchor cable dynamometers to evaluate the friction coefficient. The least square method and Bayesian quantile regression method were adopted to calculate the friction coefficient, and the results were compared with that in the specifications. Field test results showed that Bayesian quantile regression method was more effective and significant in the estimation of the friction coefficient.

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**KeyWords Plus: QUANTILE REGRESSION** 

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#### 第 15 条, 共 18 条

标题: The Driving Risk Analysis and Evaluation in Rightward Zone of Expressway Reconstruction and Extension Engineering

作者: Zhang, C (Zhang, Chi); Wang, B (Wang, Bo); Yang, SX (Yang, Shaoxiang);

Zhang, M (Zhang, Min); Gong, QL (Gong, Quanli); Zhang, H (Zhang, Hong)

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摘要: In the expressway reconstruction and expansion engineering, the form of rightward zone is increasingly adopted, and its complicated traffic conditions can easily cause traffic accidents. In order to quickly and effectively grasp the traffic risk of the right diversion section, this study employs average speed, the coefficient of variation, the equivalent minimum safety distance, and the deceleration as evaluation indexes of driving risk, and then analyses the influence rules of traffic volume, the proportion of large vehicles, and the length of the transition section on each evaluation index by using Vissim simulation software. On the basis of this, we determine the weight of each evaluation index by the entropy method and establish the driving risk index evaluation model of the work zone with multiple linear regression. The results show that the partial regression coefficients of traffic volume, the proportion of large vehicles, and the length of the transition section to the driving risk index are 0.059, 0.317, and 0.15, respectively. Finally, in this paper, we analyze the traffic risk of example section based on the driving risk evaluation model. The results of evaluation are consistent with the number of measured conflicts. This study proposes a new method for predicting the traffic risk of the expressway reconstruction and extension engineering, which can provide a reference for the development of safety management measures in the rightward zone.

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# 第 16 条, 共 18 条

标题: Identifying hazardous road sections using a fuzzy expert system

作者: Zhang, C (Zhang, Chi); Ma, XY (Ma, Xiongying); Yan, XM (Yan, Xiaomin);

Meng, L (Meng, Liang); Qi, C (Qi, Chen); Zhang, M (Zhang, Min)

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摘要: To identify hazardous sections of newly built mountainous highways, decision-makers require assistance to determine the sections that may pose risks to road

users, thereby enhancing the level of road safety management and capital utilisation efficiency. In this research, traffic accident economic losses were used as evaluation indices to characterise 30 horizontally curved sections of roadways. These highway sections were divided into five levels based on their evaluated level of risk. With the effects of multiple factors and the characteristics of uncertainty, mathematical statistics and fuzzy expert systems (FESs) were used to determine the factors contributing to hazardous sections of mountainous highways. The membership functions and fuzzy rule base were decided according to accident data and expert experience and a method for identifying hazardous sections based on the expert systems was established. The risk values of another 35 horizontally curved sections were obtained by this method and good results were achieved using the method to identify hazardous sections. The results showed that hazardous section classification is greatly affected by the horizontal radius, grade and declination angle of the horizontal curve. The results obtained from the FESs agreed overall with actual accident data.

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作者关键词: risk & probability analysis; roads & highways; safety & hazards

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#### 第 17 条, 共 18 条

标题: Exploration of roadway factors and habitat quality using InVEST

作者: Zhang, H (Zhang, Hong); Zhang, C (Zhang, Chi); Hu, T (Hu, Tao); Zhang, M

(Zhang, Min); Ren, XW (Ren, Xiaowei); Hou, L (Hou, Lei)

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摘要: Roadways vary in structural, geotechnical, locational, and operational properties, and synergies among these factors may present overwhelming challenges to understanding their full effects on the habitat quality (HQ). To explore the impact of dense roadway networks on an ecologically fragile region in the northwest of China, this study applied the Integrated Valuation of Ecosystem Services and Trade-offs (InVEST) to evaluate the HQ spatiotemporal distribution of the study area. Then, Generalised Estimating Equations (GEE) were formulated to examine the cumulative impact due to the operation of an increasing amount of roadways over the past two decades. According to the results, the influence of different road types on the HQ was apparent within the road-effect zone, and road grading reduction, road length and operation duration increase can harm the HQ within the road-effect zone. Overall, this study generates knowledge concerning the design and operation of environmentally-friendly roadways in ecologically fragile areas.

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SCENARIOS; PATTERNS; INFRASTRUCTURE; FRAGMENTATION;

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## 第 18 条, 共 18 条

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作者: Zhang, XD (Zhang, Xiaodong); Xu, JL (Xu, Jinliang); Liang, QQ (Liang,

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摘要: Road geometric design is a key factor impacting driving safety and efficiency. In highway profile design, speed reduction is used to determine critical length of grade. Previous research generally concentrated on the relationship between speed reduction and crash involvement rate to establish the recommended value. Limited research results have been reported at this point concerning speed reduction and traffic efficiency. This study aims to fill the gap by investigating tolerable speed reduction with different vertical slopes considering traffic efficiency. Firstly, appropriate experimental sections were determined after field survey. Traffic data including vehicle count, timely speed, vehicle type, and headway time were then collected on an expressway in Shaanxi Province. The associated traffic efficiency was derived from traffic volume and average speed. After this, the modeling between speed reduction and traffic efficiency was processed with different slopes. The correlation between speed reduction and traffic efficiency was therefore verified. Finally, the prediction model of optimum speed reduction concerning traffic efficiency under different vertical slopes was introduced. It was found that the critical length of grade can be longer with traffic efficiency as the major design control incorporated with slopes of 3-3.5%. The existing regulation in critical length of grade at 3.5-5% can benefit both safety and efficiency. The findings can provide a reference for vertical alignment design, leading to high-efficiency road systems.

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语言: English 文献类型: Article

作者关键词: mountainous freeway; speed reduction; traffic efficiency; critical length of

grade

KeyWords Plus: DISPERSION; FEATURES; FLOW

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## 建筑学院

## 第1条,共8条

标题: The Ecological Protection and Tourism Exploitation of Coast Resources in Macau

作者: Ding, H (Ding, Hua); Dai, JW (Dai, Jingwen); Jiang, XY (Jiang, Xingyi)

来源出版物: JOURNAL OF COASTAL RESEARCH 特

刊: 110 页: 1-4 **DOI**: 10.2112/JCR-SI110-001.1 出版年: FAL 2020

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摘要: With the support of the Chinese government, the marine area of Macau has been further defined and enlarged, resulting in the rich and premium coast resources.

Correspondingly, the Macau government should not only attach crucial importance to the coast resources, but also promote the ecological protection and exploit tourism. Based on the features of Macau's coast resources, the authors of this essay propose that in order to protect the coast resources and ecological environment successfully, the Macau government should create the landscape ecology texture between city and coast, keep full control of pollution sources as well as perfect integrated monitoring system, conduct research on the ecological protection of natural reserves and wetland park, and enhance the education of environment conservation. It is suggested that based on ecological protection and in order to make full use of the opportunity to change Macau into 'the center of tourism and entertainment in the world', top-level design is required and the tourism projects and products that integrates gambling industry, shopping, and cultural heritage should be created. In the meantime, the government, enterprises and relevant

organizations should launch more projects and programs of leisure vacations and study travels, develop its tourism by cooperating fully with Hong Kong and other cities around Macau. In the future, the 'win-win' goal of protecting and exploiting coast resources could be achieved.

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**PubMed ID: 33175667** 

语言: English 文献类型: Article

作者关键词: Macau; coast; ecological protection; tourism exploitation

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#### 第 2 条, 共 8 条

标题: Operating Efficiency-Based Data Mining on Intensive Land Use in Smart City 作者: Duan, YQ (Duan, Ya-Qiong); Fan, XY (Fan, Xiao-Yang); Liu, JC (Liu, Jia-Chen); Hou, QH (Hou, Quan-Hua) 来源出版物: IEEE

ACCESS 卷: 8 页: 17253-17262 DOI: 10.1109/ACCESS.2020.2967437 出版

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摘要: The discordance between the operation of rail transit and surrounding land use is highlighted with the rapid construction of rail transit in China. The related research on coupling relationship is well needed. Taking 13 typical commercial service rail transit stations in Xi & x2019;an as the example, this article established the evaluation indicator of coordinated relationship between rail transit station operating efficiency and land use, and a data envelopment analysis (DEA)model was used to evaluate the coupling degree between them. According to the research results, the coupling development between operating efficiency and land use in Xi & x2019;an commercial service rail transit station is at a low level and there exists a huge difference between the two. Moreover, this research identified the key indexes that influence the coupling development of the two, namely Class-A, Class-B, and Class-R land use proportion, plot ratio, land use mixture and parking facility control, and determined the reasonable control range of these four indices. The research promotes the intensive use of land around Xi & x2019;an rail transit station and better supports the sustainable operation of rail transit.

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语言: English 文献类型: Article

作者关键词: Commercial service rail transit station; operation efficiency; intensive land

use; DEA

**KeyWords Plus: GIS** 

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开放获取: DOAJ Gold 输出日期: 2021-03-15

#### 第3条,共8条

标题: Intelligent urban planning on smart city blocks based on bicycle travel data sensing 作者: Hou, QH (Hou, Quanhua); Li, WJ (Li, Weijia); Zhang, XQ (Zhang, Xiaoqing); Fang, YN (Fang, Yinnan); Duan, YQ (Duan, Yaqiong); Zhang, LD (Zhang, Lingda); Liu, WQ (Liu, Wenqian)

来源出版物: COMPUTER

COMMUNICATIONS 卷: 153 页: 26-33 DOI: 10.1016/j.comcom.2020.01.066 出版

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摘要: The block is an important spatial unit of urban built-up areas. The investigation of the relationship between bicycle travel mode and land use characteristics at the scale of the block can effectively address the contradiction between the supply and demand for transportation under the background of stock characteristics. Herein, 21 typical blocks in Xi'an are applied as the research object, Mobike bicycle data, mobile phone signaling data and traditional survey data are employed. The correlation analysis and multiple linear regression analysis methods are used to identify the relationship between bicycle travel and land use. As a result, land use characteristics under the influence of bicycle travel are obtained. The results show that the land use indicators significantly related to street bicycle travel are composed of building mixing degree, floor area ratio and riding connectivity. Each index has a positive effect on street bicycle travel. The building mixing degree has the greatest impact on bicycle travel, followed by the floor area ratio and riding connectivity. In different periods, the impact of three indicators on bicycle travel varies. Especially, the impact on weekend bicycle travel is more obvious. This study can provide a reference for the optimization and transformation of land use in blocks under the influence of bicycle travel.

入藏号: WOS:000527272900003

语言: English 文献类型: Article

作者关键词: Bicycle travel; Land use characteristics; Xi'an city blocks; Multiple linear regression

**KeyWords Plus:** LOW-CARBON TRAVEL; LAND-USE; SELECTION; BEHAVIOR; IMPACTS; WALKING

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#### 第4条,共8条

标题: Study on coupling degree of rail transit capacity and land use based on multivariate data from cloud platform

作者: Hou, QH (Hou, Quanhua); Xing, YT (Xing, Yaotian); Wang, D (Wang, Di); Liu, JC (Liu, Jiachen); Fan, XY (Fan, Xiaoyang); Duan, YQ (Duan, Yaqiong)

来源出版物: JOURNAL OF CLOUD COMPUTING-ADVANCES SYSTEMS AND APPLICATIONS 卷: 9 期: 1 文献号: 4 DOI: 10.1186/s13677-020-0151-x 出版年: JAN 21 2020

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引用的参考文献数:37

摘要: The study of exploring the internal connection between rail transit and land use is of great significance for the coordinated development of urban space and rail transit construction, and it is also important for the intensive use of land affected by rail transit stations. The land use structure and population density surrounding the stations of Line

1.2.3 of Xi'an Rail Transit were clustered by SPSS for identifying the rail transit stations with high population density. Subsequently, We have established an indicator system of urban land use and rail transit operation capabilities based on multivariate data, and explored the coordinated relationship between rail transit and land use through data envelopment analysis (DEA) evaluation methods at high population density stations. Besides, the coupling degree of land use in rail transit stations with high population density was evaluated, and the key indicators affecting the coupling degree were further analyzed in Xi'an. In conclusion, this study finds that the relationship between rail transit capacity and land use of high population density rail transit stations is unbalanced. Hence, to promote the sustainable development of rail transit capacity and surrounding land, it is suggested that we should confine the development of land use intensity around the station, improve the service functions of small-scale living areas, and optimize the travel environment intended for short-distance travel. For residents, they are encouraged to choose the mode of rail transit for their long-distance travel. At the same time, the peak passenger flow at the stations should be evacuated accordingly.

入藏号: WOS:000520156800001

语言: English 文献类型: Article

作者关键词: High population density rail transit station; Rail transit capacity; Land use;

Coupling degree; DEA; Multivariate data

**KeyWords Plus: ACCESSIBILITY** 

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## 第5条,共8条

标题: Performance of Different Urban Design Parameters in Improving Outdoor Thermal Comfort and Health in a Pedestrianized Zone

作者: Ma, X (Ma, Xuan); Wang, MY (Wang, Mengying); Zhao, JY (Zhao, Jingyuan); Zhang, L (Zhang, Lei); Liu, WR (Liu, Wanrong)

来源出版物: INTERNATIONAL JOURNAL OF ENVIRONMENTAL RESEARCH AND PUBLIC HEALTH 卷: 17 期: 7 文献

号: 2258 DOI: 10.3390/ijerph17072258 出版年: APR 2020

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摘要: Global climate change and urban heat islands have generated heat stress in summer, which does harm to people's health. The outdoor public commercial pedestrianized zone has an important role in people's daily lives, and the utilization of this space is evaluated by their outdoor thermal comfort and health. Using microclimatic monitoring and numerical simulation in a commercial pedestrianized zone in Tai Zhou, China, this study investigates people's outdoor thermal comfort in extreme summer heat. The final results provide a comprehensive system for assessing how to improve outdoor human thermal health. Under the guidance of this system, local managers can select the most effective strategy to improve the outdoor thermal environment.

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**PubMed ID: 32230845** 

语言: English 文献类型: Article

作者关键词: Urban design parameter; Pedestrianized Zone; Thermal comfort;

Measurement survey; Numerical simulation

KeyWords Plus: HEAT-ISLAND; STREET; IMPACT; SUMMER; TEMPERATURE;

CLIMATES; GEOMETRY; MODEL; CITY

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#### 第6条,共8条

标题: How does parking availability interplay with the land use and affect traffic congestion in urban areas? The case study of Xi'an, China

作者: Shen, T (Shen, Tong); Hong, Y (Hong, Yu); Thompson, MM (Thompson, Michelle

M.); Liu, JP (Liu, Jiaping); Hun, XP (Hun, Xiaoping); Wu, L (Wu, Lian)

来源出版物: SUSTAINABLE CITIES AND SOCIETY 卷: 57 文献

号: 102126 **DOI**: 10.1016/j.scs.2020.102126 出版年: JUN 2020

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使用次数 (最近 180 天): 9 使用次数 (2013 年至今): 17

引用的参考文献数:72

摘要: Strategic development of parking spaces is considered as one of the leading solutions to alleviate urban congestion. However, few studies have quantified the interactions between land use and parking to investigate their emission impacts on traffic congestion. This study introduced a novel dimensionless ratio, the Extra Carbon Emission Index (ECEI) which estimates carbon dioxide (CO2) increments in the congestion condition of free-flowing traffic. Using a publicly accessible web-mapping service application, we collected the traffic speed data from dynamic urban road networks during peak hours of Xi'an city, China in 2017. A multiple regression model was applied to analyse the tripartite relationship among land use, parking availability and the ECEI. The results suggest that 1) supply-demand ratio of parking spaces, density and land use mix are negatively correlated to congestion; 2) parking availability is positively associated with spatial-temporal distribution of traffic flows, and this land use differentiates congestion in time and throughout the built environment; and 3) low-density parking lots and high-density parking spaces increase traffic congestion in residential districts, while adversely affect the compact land use towards sustainability. Compared to the reconstruction of land use, parking reform provides a more efficient way to alleviate congestion by coordinating the density of lots and spaces in residential districts.

入藏号: WOS:000533520900001

语言: English 文献类型: Article

作者关键词: Low-carbon; Traffic congestion; Parking-land use; Open source big data;

**Transportation** 

**KeyWords Plus:** SPATIAL-DISTRIBUTION; DOWNTOWN PARKING; CHOICE; IDENTIFICATION; CONSUMPTION; EMISSIONS; MOBILITY; POLICIES; CENTERS; MODELS

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#### 第7条,共8条

标题: An Evaluation System for Sustainable Urban Space Development Based in Green Urbanism Principles-A Case Study Based on the Qin-Ba Mountain Area in China

作者: Yu, XH (Yu, Xiaohui); Ma, S (Ma, Sai); Cheng, K (Cheng, Kang); Kyriakopoulos, GL (Kyriakopoulos, Grigorios L.)

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摘要: Since the 20th century, the deterioration of the ecological environment around the world has challenged urban space construction. With the development of urbanization, the consumption of resources and energy has increased, the level of biodiversity has decreased, environmental pollution is approaching the critical level, and the contradiction between human habitat activity and ecological environment has become increasingly prominent. The sustainable development of urban space along with its economic and social benefits, taking into account the quality of life and ecological environment, has become a new and important subject that needs to be explored. In this study, the indices of the evaluation system for sustainable urban spatial development in regions with underdeveloped economies but rich in ecological resources are arranged in sequence through the systematic coupling analysis of collaborative evaluation information and a quantitative analysis. The influences of urban space elements on sustainable urban development are disclosed. On the basis of the generated data, an evaluation system for sustainable urban spatial development with a complete set of information is proposed. The proposed system is applicable to urban spatial development evaluation in regions in China with underdeveloped economies but rich in ecological capital. First, the basic concept of system coupling is introduced, and a coupling relationship between urban sustainable development and urban space is proposed. Second, the elements of urban space and the sustainable development in the Qin-Ba mountain area are extracted, and the precedence diagram method is used to construct a sustainable evaluation system for urban space development in the Oin-Ba mountain area. Third, the sustainable evaluation process of urban spatial development is proposed. Finally, the sustainable evaluation system for urban spatial development in the Qin-Ba mountain area is applied to evaluate the urban spatial development in Shangluo, Qin-Ling Mountains, China. The results show that, among the investigated 14 indicators, the proportion of industrial land use mainly influences sustainable urban spatial development. As for the rest of the index factors, per capita green land area and green coverage ratio of built-up areas, per capita urban construction land area, proportion of forestry area, greening rate of built-up areas, total industrial dust emission density, proportion of cultivated area, and average volume fraction of residential areas are the secondary influencing factors of sustainable urban spatial development. The evaluation system in this research is constructed with the three aspects of "green coordination", "green development", and "green sustainability" of sustainable urban spatial development, and it complements the evaluation contents of urban-rural ecological space coordination, land resource protection, and green

development community, and so on. The conclusion of this study not only can provide a useful reference for urban spatial development planning for underdeveloped ecological capital areas of China but also can provide a theoretical basis for the management and control policy of sustainable urban spatial development.

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作者关键词: sustainable evaluation system; city spatial development; green

coordination; green development; green sustainability

KeyWords Plus: CITIES; HEALTH

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# 第8条,共8条

标题: Analysis of the Characteristics of Ecological Security Zoning and Its Dynamic Change Pattern: A Case Study of the Weibei Area

作者: Zhang, Y (Zhang, Yue); Zhang, LY (Zhang, Liyuan); Yu, KH (Yu, Kanhua); Zou, YF (Zou, Yifan)

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摘要: The development pattern of agriculture and energy exploitation in the southern marginal area of the Loess Plateau is widespread in the northern part of China. As a typical example, the fragile ecological area in the Weibei region is greatly affected by human factors, which makes the local ecological environment and social sustainability disturbed to varying degrees. Taking the Weibei region as the study area, through the comprehensive analysis of social, economic, and climate data, an index system suitable for the ecological security assessment of the Weibei region was constructed. The ecological security of this region was quantitatively evaluated by spatial principal component analysis (SPCA), and its ecological security partition was divided and analyzed. There were five zones at different levels, and I to V represented the development of ecological security from a low level to a high level. The results showed that from 1997 to 2017, the ecological security of different districts and counties in the Weibei region showed different trends. For example, the ecological security index of Tongguan County, Chengcheng County, and Pucheng County continued to decrease, but the overall index value was still high, and the ecological security index of Dali County, Fuping County, and Hancheng County increased. During this period, the ecological security of regions I and II continued to increase, while regions IV and V first decreased and then increased. At the same time, the area of the ecological security buffer region increased year by year. This study can provide a feasible method for assessing ecological security of the current regional model of mixed agriculture and energy extraction industry.

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语言: English 文献类型: Article

作者关键词: Weibei area; spatial principal component; ecological security zoning;

ecological security index

**KeyWords Plus:** FOOTPRINT; ENVIRONMENT; INDICATORS

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#### 水利与环境学院

#### 第1条,共8条

标题: Distribution of Nitrate Content in Groundwater and Evaluation of Potential Health Risks: A Case Study of Rural Areas in Northern China

作者: Feng, WW (Feng, Wenwen); Wang, C (Wang, Chao); Lei, XH (Lei, Xiaohui);

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摘要: Nitrate pollution is considered to be one of the most common environmental problems in groundwater, especially in areas affected by human mining, such as the arid region of northern China. However, the human health risk assessment of nitrate pollution in this area has not yet been carried out. In this study, groundwater samples were taken in the Selian mining area in Inner Mongolia to conduct a full analysis of water quality. On this basis, the groundwater quality, the distribution range of nitrate pollution, and human health risks were evaluated. The results show that the groundwater in the Selian mining area is neutral to alkaline, with high salinity and hardness. The concentration of nitrate ions in groundwater generally exceeds the standard, and the maximum exceeds 5.48 times the value specified in the Chinese national standard, indicating that groundwater nitrate pollution needs to be controlled urgently. Groundwater is polluted by large amounts of nitrogen fertilizer used by humans in agricultural activities. At the same time, mining activities have accelerated the severity and spread of pollution. Groundwater is not recommended for direct human life and irrigation use in the study area unless purification measures are taken. Nitrate pollution is more harmful to children through groundwater, about 1.54 times that of adults. Excess nitrate is transported into the body through drinking groundwater, so proper drinking water control will reduce the health risks of nitrate, such as centralized water supply. This study will provide a scientific basis for the rational use of groundwater and nitrate pollution control in the area.

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语言: English 文献类型: Article

作者关键词: mine water; groundwater quality; nitrate pollution; human health risk; Inner

Mongolia

KeyWords Plus: QUALITY; IMPACTS

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#### 第 2 条, 共 8 条

标题: Hydrological Analysis of Loess Plateau Highland Control Schemes in Dongzhi

#### Plateau

作者: Huo, AD (Huo, Aidi); Peng, JB (Peng, Jianbing); Cheng, YX (Cheng, Yuxiang);

Luo, PP (Luo, Pingping); Zhao, ZX (Zhao, Zhixin); Zheng, CL (Zheng, Chunli)

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摘要: Gully Consolidation and Highland Protection (GCHP) Project is a major soil and water conservation and land remediation project implemented in the Chinese Loess Plateau (CLP). As the connection between the mechanisms of erosion and practical applications for addressing it is not clear, the implementation of engineering measures to combat the problem has been insufficient to date. This study used field investigation and descriptive statistics, together with hydrological analysis modeling to gain an understanding of the impact of the Loess Plateau Highland Control Schemes on the evolution of the Dongzhi Plateau as the largest, most well-preserved, and the thickest loess deposit region in China. A remote sensing image was introduced to hydrological modeling to prove the analysis results of the Dongzhi Plateau. According to these investigations and analysis, four major schemes of gully head retrogressive erosion control were summarized and a comprehensive theory and technology based on a watershed were proposed. After hydrological analysis, the Dongzhi Plateau was divided into 1225 watersheds. It was found that GCHP should be implemented in the catchment area based on hydrological analysis to solve the problem of retrogressive erosion, and it is recommended that a scientific and rational drainage system should be designed based on the roads and pipe networks in the whole watershed area. Findings from this paper provide insights into the evolution of CLP and it can give a good suggestion on the future implementation of GHCP.

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语言: English 文献类型: Article

作者关键词: hydrological analysis; control schemes; drainage system; dongzhi plateau; gully consolidation and highland protection

**KeyWords Plus:** SOIL-EROSION; SUSCEPTIBILITY; CONSOLIDATION; DEGRADATION; EVOLUTION; LANDSLIDE; NITROGEN; ECOLOGY; HISTORY; RUNOFF

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#### 第3条,共8条

标题: Influence of short-term rainfall forecast error on flood forecast operation: A risk assessment based on Bayesian theory

作者: Jia, ZF (Jia, Zhifeng); Guan, ZL (Guan, Zilong); Liu, Z (Liu, Zhao); Yang, DM (Yang, Dongming)

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摘要: To study rainfall forecast error's influence on flood operation, short-term (24 hours ahead) rainfall forecast accuracy in Qian river basin were analyzed, probabilities of event on flood operation risk were estimated based on Bayesian theory, and the dynamic control scheme was discussed. Results show that, accuracy rate and missing report rate decreased while vacancy rate increased with the increase of rainfall forecast magnitude. For flood operation based on current rainfall forecast information of different magnitudes, level I ("no rain") error nearly has no impact on it, level II ("light rain") error has a little impact on small flood operation, and level III ("no less than moderate rain") error has a great impact on large flood. For the dynamic control scheme in flood season, it is not necessary to discharge flood ahead of schedule so that limited water level can be kept at the upper boundary to provide higher potential energy for power generation when forecasting rainfall shows "no rain" or "light rain", while it should be discharged ahead of schedule so that limited water level can be kept at a lower value to ensure an adequate flood storage capacity when forecasting rainfall shows "no less than moderate rain".

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语言: English 文献类型: Article

作者关键词: Rainfall information; forecast error; risk assessment; Bayesian theory **KeyWords Plus:** GROUNDWATER QUALITY; MODEL CALIBRATION; RUNOFF MODEL; RIVER; UNCERTAINTY; MANAGEMENT; WATER; RESOURCES;

PURPOSES; SYSTEM

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### 第 4 条, 共 8 条

标题: Hydrophobic and Anti-Fouling Performance of Surface on Parabolic Morphology 作者: Li, Y (Li, Yu); Yang, SK (Yang, Shengke); Chen, YY (Chen, Yangyang); Zhang, D (Zhang, Dan)

来源出版物: INTERNATIONAL JOURNAL OF ENVIRONMENTAL RESEARCH AND PUBLIC HEALTH 卷: 17 期: 2 文献号: 644 **DOI**: 10.3390/ijerph17020644 出版年: JAN 2 2020

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摘要: The hydrophobicity and anti-fouling properties of materials have important application value in industrial and agricultural production and people's daily life. To study

the relationship between the unit width L-0 of the parabolic hydrophobic material and the hydrophobicity and anti-fouling properties, the rough surface structure of the parabolic with different widths was prepared by grinding with different SiC sandpapers, and further, to obtain hydrophobic materials through chemical oxidation and chemical etching, and modification with stearic acid (SA). The morphology, surface wetting and anti-fouling properties of the modified materials were characterized by SEM and contact angle measurement. The oil-water separation performance and self-cleaning performance of the materials were explored. The surface of the modified copper sheet forms a rough structure similar to a paraboloid. When ground with 1500 grit SiC sandpaper, it is more conducive to increase the hydrophobicity of the copper sheet surface and increase the contact angle of water droplets on the copper surface. Additionally, the self-cleaning and anti-fouling experiments showed that as L-0 decreases, copper sheets were less able to stick to foreign things such as soil, and the better the self-cleaning and anti-fouling performance was. Based on the oil-water separation experiment of copper mesh, the lower L-0 has a higher oil-water separation efficiency. The results showed that material with parabolic morphology has great self-cleaning, anti-fouling, and oil-water separation performance. The smaller the L-0 was, the larger the contact angle and the better hydrophobic performance and self-cleaning performance were.

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语言: English 文献类型: Article

作者关键词: parabolic; hydrophobicity; anti-fouling; contact angle; oil-water separation

KeyWords Plus: SELF-CLEANING SURFACES; CONTACT-ANGLE;

THERMODYNAMIC ANALYSIS; SPECIAL WETTABILITY; OIL; MEMBRANE; MESH; FABRICATION; PREDICTION; RESISTANCE

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## 第5条,共8条

标题: Adsorption Characteristics of Oxytetracycline by Different Fractions of the Organic Matter from Humus Soil: Insight from Internal Structure and Composition 作者: Luo, MY (Luo, Mengya); Yang, SK (Yang, Shengke); Shen, SQ (Shen, Siqi); Li, Y (Li, Yu)

来源出版物: INTERNATIONAL JOURNAL OF ENVIRONMENTAL RESEARCH AND PUBLIC HEALTH 卷: 17 期: 3 文献号: 914 DOI: 10.3390/ijerph17030914 出版年: FEB 1 2020

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摘要: For minimizing the transport of antibiotics to groundwater, the migration of antibiotics in soils should be investigated. Soil organic matter can affect the migration of antibiotics. To date, the influence of aromatics and aliphatic content of organic matter on the adsorption of antibiotics has been controversial. To better understand the reaction mechanism of soil organic matter with antibiotics, this study investigated the adsorption of oxytetracycline (OTC) by humus soils (HOS) and their fractions. HOS were sequentially fractionated into four organic fractions, including the removal of dissolved organic matter (HRDOM), removal of minerals (HRM), removal of free fat (HRLF), and

nonhydrolyzable organic carbon (HNHC). Moreover, batch experiments revealed that adsorption capacity was ordered by HNHC > HOS > HRDOM > HRLF > HRM. SEM images and N-2 adsorption/desorption isotherms indicate that adsorption capacity is independent of the external structure. However, adsorption capacity is related to the internal structure and composition. Combination analysis with elemental composition and infrared spectroscopy showed that the adsorption capacity of HRM, HRLF, and HNHC had a good positive correlation with aromaticity, but a negative correlation with polarity and hydrophilicity. Additionally, the rule of binding affinity between OTC and functional groups with different properties was summarized as aromatic > polarity > hydrophilic.

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**PubMed ID: 32024210** 

语言: English 文献类型: Article

作者关键词: Humus; organic matter fractions; oxytetracycline; adsorption

**KeyWords Plus:** VETERINARY ANTIBIOTICS; SORPTION; TETRACYCLINE; CLAY; FLUORESCENCE; PHENANTHRENE; SEDIMENTS; FATE; KINETICS; BEHAVIOR

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#### 第6条,共8条

标题: Contamination Level, Distribution Characteristics, and Ecotoxicity of Tetrabromobisphenol A in Water and Sediment from Weihe River Basin, China

作者: Wang, XL (Wang, Xueli); Li, CY (Li, Chenyang); Yuan, XY (Yuan, Xiaoyu);

Yang, SK (Yang, Shengke)

来源出版物: INTERNATIONAL JOURNAL OF ENVIRONMENTAL RESEARCH

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摘要: Tetrabromobisphenol A (TBBPA) is a brominated flame retardant, which is widely present in the various environmental and biological media. The knowledge on the contamination of TBBPA in Weihe River Basin is still limited. In order to know the pollution level and distribution of tetrabromobisphenol A (TBBPA) in the Weihe River Basin, a total of 34 sediment samples and 36 water samples were collected from the main stream and tributaries of the WeiHe River Basin, and the concentration of TBBPA in the samples was analyzed by high-performance liquid chromatography-electrospray ionization-mass spectrometry (HPLC-ESI-MS). The detection frequency of TBBPA in sediments and water samples was 61.8% and 27.8%, respectively; the TBBPA concentrations in sediments and water samples were in the range of not detected (N.D.)-3.889 ng/g (mean value of 0.283 ng/g) and N.D-12.279 ng/L (mean value of 0.937 ng/L), respectively. Compared with other areas in China, the residues of TBBPA in the Weihe River Basin were at a relatively low level. The spatial distributions of TBBPA in surface sediments and water indicated that the local point-input was their major source. This is related to the proximity of some sampling sites to industrial areas and domestic sewage discharge areas. The insignificant correlation between TBBPA and total organic carbon (TOC) indicated that TBBPA in sediments is not only influenced by TOC but also affected by atmosphere and land input, wet deposition, and long-distance transmission. The potential risks posed by TBBPA in water and sediment were characterized using the risk quotient (RQ) method. The calculated RQ for TBBPA was less than 0.01, showing that the ecological risk due to TBBPA was quite low for aquatic organisms.

入藏号: WOS:000542629600003

**PubMed ID: 32466414** 

语言: English 文献类型: Article

作者关键词: tetrabromobisphenol A; sediment; water; Weihe River Basin; distribution;

risk assessment

**KeyWords Plus:** PERSISTENT ORGANIC POLLUTANTS; SUSPENDED PARTICULATE MATTER; SPATIAL-DISTRIBUTION; VERTICAL PROFILE; FLAME RETARDANTS; SURFACE SEDIMENT; RISK-ASSESSMENT; LAKE; HEXABROMOCYCLODODECANE; FISHES

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## 第7条,共8条

标题: Sorption Behavior of Hexabromocyclododecanes (HBCDs) on Weihe River Sediment

作者: Wang, XL (Wang, Xueli); Yuan, XY (Yuan, Xiaoyu); Yang, SK (Yang, Shengke) 来源出版物: INTERNATIONAL JOURNAL OF ENVIRONMENTAL RESEARCH AND PUBLIC HEALTH 卷: 17 期: 1 文献号: 247 DOI: 10.3390/ijerph17010247 出版年: JAN 2020

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使用次数 (最近 180 天): 0 使用次数 (2013 年至今): 2

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摘要: The sorption of hexabromocyclododecanes (HBCDs) on sediment affects the fate and transport of HBCDs in rivers. The sorption of HBCDs on sediment from the Weihe River was investigated by performing batch equilibration experiments, and the effects of changing the pH ionic, strength, and humic acid concentration (HA) on sorption were evaluated. The obtained results indicated that fast rather than slow sorption was the dominant process. Nonlinear sorption isotherms were acquired, and the Freundlich (R-2 0.94-0.98) and Langmuir (R-2 0.95-0.99) models both described the sorption of HBCDs well. The adsorption capacity for alpha-HBCD, beta-HBCD, and gamma-HBCD were calculated using the Langmuir model, and were 443.56, 614.29 and 1146.37 mg/kg, respectively. Thermodynamic analysis shows that HBCDs sorption on sediment is a spontaneous exothermic process. HBCDs sorption was affected by the HA concentration and ionic strength. The amounts of HBCDs sorbed to the sediment decreased as the ionic strength increased, and first increased and then decreased as the HA concentration increased. Changes in pH did not clearly affect the sorption of HBCDs. Synchrotron radiation Fourier-transform infrared spectra (SR-FTIR) was used to characterize the adsorption mechanism, and the obtained result indicated that hydrophobic interactions dominated the mechanism involved in HBCDs sorption on sediment.

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**PubMed ID: 31905817** 

语言: English 文献类型: Article

作者关键词: affected factors; HBCDs; sediment; sorption; SR-FTIR

**KeyWords Plus:** DISTRIBUTED REACTIVITY MODEL; FLAME RETARDANTS; SOILS; TETRABROMOBISPHENOL; CHINA; WATER; ENVIRONMENT; TRENDS;

PBDES; FATE

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## 第8条,共8条

标题: Intrinsic Cross-Correlation Analysis of Hydro-Meteorological Data in the Loess Plateau, China

作者: Wei, XW (Wei, Xiaowei); Zhang, HB (Zhang, Hongbo); Gong, XH (Gong, Xinghui); Wei, XC (Wei, Xingchen); Dang, CH (Dang, Chiheng); Zhi, T (Zhi, Tong)

来源出版物: INTERNATIONAL JOURNAL OF ENVIRONMENTAL RESEARCH AND PUBLIC HEALTH 卷: 17 期: 7 文献

号: 2410 DOI: 10.3390/ijerph17072410 出版年: APR 2020

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摘要: The purpose of this study is to illustrate intrinsic correlations and their temporal evolution between hydro-meteorological elements by building three-element-composed system, including precipitation (P), runoff (R), air temperature (T), evaporation (pan evaporation, E), and sunshine duration (SD) in the Wuding River Basin (WRB) in Loess Plateau, China, and to provide regional experience to correlational research of global hydro-meteorological data. In analysis, detrended partial cross-correlation analysis (DPCCA) and temporal evolution of detrended partial-cross-correlation analysis (TDPCCA) were employed to demonstrate the intrinsic correlation, and detrended cross-correlation analysis (DCCA) coefficient was used as comparative method to serve for performance tests of DPCCA. In addition, a novel way was proposed to estimate the contribution of a variable to the change of correlation between other two variables, namely impact assessment of correlation change (IACC). The analysis results in the WRB indicated that (1) DPCCA can analyze the intrinsic correlations between two hydro-meteorological elements by removing potential influences of the relevant third one in a complex system, providing insights on interaction mechanisms among elements under changing environment; (2) the interaction among P, R, and E was most strong in all three-element-composed systems. In elements, there was an intrinsic and stable correlation between P and R, as well as E and T, not depending on time scales, while there were significant correlations on local time scales between other elements, i.e., P-E, R-E, P-T, P-SD, and E-SD, showing the correlation changed with time-scales; (3) TDPCCA drew and highlighted the intrinsic correlations at different time-scales and its dynamics characteristic between any two elements in the P-R-E system. The results of TDPCCA in the P-R-E system also demonstrate the nonstationary correlation and may give some experience for improving the data quality. When establishing a hydrological model, it is suitable to only use P, R, and E time series with significant intrinsic correlation for calibrating model. The IACC results showed that taking pan evaporation as the representation of climate change (barring P), the impacts of climate change on the non-stationary correlation of P and R was estimated quantitatively, illustrating the contribution of climate to the correlation variation was 30.9%, and that of underlying surface and direct human impact accounted for 69.1%.

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**PubMed ID:** 32252277

语言: English 文献类型: Article

作者关键词: intrinsic correlation; detrended partial cross-correlation analysis; temporal

evolution; scaling correlation; non-stationary data

KeyWords Plus: CLIMATE-CHANGE; TIME-SERIES; PRECIPITATION;

STREAMFLOW; IMPACTS; VARIABILITY; RUNOFF

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# 建筑工程学院

## 第 1 条, 共 4 条

标题: Investigation and Application of a New Low-Carbon Material (Preplaced

Aggregate Concrete) in Concrete-Filled Steel Tube Stub Columns

作者: Lv, J (Lv, Jing); Zhou, TH (Zhou, Tianhua); Li, KL (Li, Kunlun)

来源出版物: SUSTAINABILITY 卷: 12 期: 5 文献

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摘要: As a new low-carbon material, development of preplaced aggregate concrete (PAC) will achieve huge economic and social benefits. However, few existing research is focused on applying PAC in structural elements. This paper is attempt to apply PAC in concrete-filled steel tube (CFST) stub columns and the bearing behaviors of PAC-filled steel tube (PACFST) stub columns under axial compression are also experimentally investigated. The results indicate that the failure modes of PACFST stub columns are all drum-like failure mode which are analogous to that of CFST stub columns. The axial load-axial strain curves of PACFST stub columns can be roughly divided into elastic stage, elastic-plastic stage and plastic stage. Under the similar ultimate load, the ultimate strains are a bit smaller than that of CFST stub columns. Comparison of the results of ultimate load of PACFST stub columns calculated using the existing relevant standards for the bearing capacity calculation methods of CFST stub columns, GB 50936 and JGJ 138 are much more suitable to assess the bearing capacity of PACFST stub columns. Approximately 15%-20% saving in cement consumption will be accomplished with popularization and utilization of PACFST stub columns as compared with CFST stub columns.

入藏号: WOS:000522470900069

语言: English 文献类型: Article

作者关键词: preplaced aggregate concrete; new low-carbon material; concrete-filled steel tube; stub columns; bearing behavior; popularization and utilization

**KeyWords Plus:** SEISMIC PERFORMANCE; NUMERICAL INVESTIGATIONS; MECHANICAL-PROPERTIES; BEHAVIOR; STRENGTH; STIFFNESS; REPAIR; BRIDGE; GROUT

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### 第 2 条, 共 4 条

标题: Development and Investigation of a New Low-Cement-Consumption Concrete-Preplaced Aggregate Concrete

作者: Lv, J (Lv, Jing); Zhou, TH (Zhou, Tianhua); Li, KL (Li, Kunlun)

来源出版物: SUSTAINABILITY 卷: 12 期: 3 文献号: 1080 **DOI:** 10.3390/su12031080 出版年: FEB 2020

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摘要: Reducing consumption of cement in concrete will achieve huge benefits in decline of carbon emission, conservation of natural resources and reduction of the cost of

concrete. In this paper, the low-cement-consumption concrete, preplaced aggregate concrete (PAC), is prepared and 12 types of mixtures including four water-binder ratios (W/B) and three sand-binder ratios (S/B) are designed to detect the effect of W/B and S/B on the mechanical properties and failure mechanism of PAC. Experimental and analytic results indicate that the cubic compressive strength of PAC, splitting tensile strength of PAC and elastic modulus of PAC decrease with increase in W/B and S/B. At a similar compressive strength, more than 20% increment of elastic modulus of PAC is achieved when compared with normal concrete (NC); the descent stage of stress-strain curves of PAC are steeper than that of NC and the peak strains of PAC is lower than that of NC. Guo's model with suitable values of parameters a and b can be used to describe the stress-strain relationship of PAC. Replacing NC by PAC in concrete structures will save 15-20% cement and achieve great environmental and economic benefits.

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语言: English 文献类型: Article

作者关键词: preplaced aggregate concrete; low-cement-consumption concrete; basic mechanical properties; stress-strain relationship; failure mechanism

**KeyWords Plus:** STRESS-STRAIN MODEL; MECHANICAL-PROPERTIES; FLY-ASH; STRENGTH; COMPRESSION; PERFORMANCE; BEHAVIOR; POWDER; REPAIR; STEEL

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### 第3条,共4条

标题: Comparative Study of Denitrifying-MBBRs with Different Polyethylene Carriers for Advanced Nitrogen Removal of Real Reverse Osmosis Concentrate

作者: Wang, T (Wang, Tong); Wu, T (Wu, Tong); Wang, HY (Wang, Haiyan); Dong, WY (Dong, Weiyang); Zhao, YQ (Zhao, Yaqian); Chu, ZS (Chu, Zhaosheng); Yan, GK (Yan, Guokai); Chang, Y (Chang, Yang)

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摘要: Nitrogen (N) remains a great challenge in wastewater treatment while attempts to remove N has continuously been a research point for decades. In this study, the long-term performance of four identical-shape denitrification MBBRs (moving bed biofilm reactors) with four different configurations of cylindrical polyethylene as carriers (Phi 25 x 12, Phi 25 x 4, Phi 15 x 15, and Phi 10 x 7 mm) for advanced N removal of real reverse osmosis concentrate was investigated in great detail. The N of the real concentrate can be effectively removed by denitrification MBBRs when the pH, temperature, hydraulic retention time (HRT), C/N ratio, and filling rate are 7.50-8.10, 24 similar to 26 degrees C, 12 hours, 6.6, and 50%, respectively. The results showed that the MBBR with the Phi 15 x 15 poly-carrier had the best removal efficiency on NO3--N (78.0 +/- 15.8%), NO2--N (43.79 +/- 9.30%), NH4+-N (55.56 +/- 22.28%), and TN (68.9 +/- 12.4%). The highest biomass of 2.13 mg/g-carrier was in the Phi 15 x 15 poly-carrier was compared with the other three carriers, while the genes of the Phi 15 x 15 poly-carrier reactor were also the most abundant. Proteobacteria was the most abundant phylum in the system followed by Bacteroidetes and then Firmicutes. The entire experiment with various parameter examination supported that Phi 15 x 15 poly-carrier MBBR was a promising system for N removal in high strength concentrate. Despite the lab-scale trial, the successful treatment of high strength real reverse osmosis concentrate demonstrated the reality of the treated effluent as possible reclaimed water, thus providing a good showcase of N-rich reverse osmosis concentrate purification in practical application.

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语言: English 文献类型: Article

作者关键词: carriers; denitrification MBBR; nitrogen removal; real reverse osmosis

concentrate

**KeyWords Plus:** MOVING-BED-BIOFILM; WASTE-WATER TREATMENT;

MICROBIAL COMMUNITY; REACTOR MBBR; AUTOTROPHIC

DENITRIFICATION; BACTERIAL COMMUNITY; ACTIVATED-SLUDGE;

TREATMENT-PLANT; CARBON SOURCE; PERFORMANCE

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# 第 4 条, 共 4 条

标题: Numerical Models of Subsurface Flow Constructed Wetlands: Review and Future Development

作者: Yuan, CB (Yuan, Chunbo); Huang, T (Huang, Ting); Zhao, XH (Zhao, Xiaohong); Zhao, YQ (Zhao, Yaqian)

来源出版物: SUSTAINABILITY 卷: 12 期: 8 文献号: 3498 **DOI**: 10.3390/su12083498 出版年: APR 2020

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摘要: Numerical model as a simulation tool was used to describe the pollutants transformation and degradation process in constructed wetlands (CWs). It can help provide insight into the "black box" and increase the understanding of the complex processes in CWs. In the last few decades, several process-based numerical models were developed to depict the pollutants removal processes in CWs, which include biochemical model, hydraulic model, reactive-transport model, plants model, clogging model, and coupling model combining two or more sub-models. However, there was a long way to go before fully understanding the decontamination mechanisms of CWs. On the one hand, single or a composite model coupling a small number of sub-models cannot fully reveal the decontamination processes. On the other hand, a comprehensive model including all sub-models of current cognition involves numerous parameters, most of which are interaction and cannot quantitatively determined, thus making the model complex and

leading to diffuse interaction. Therefore, in order to describe the reaction processes in CWs more accurately, it is expected that all parameters should be quantified as far as possible in the future model. This study aims to provide a review of the numerical models of CWs and to reveal mechanism of decontamination. Based on the advantages and disadvantages of existing models, the study presented the improvement method and future research direction: (1) new detection/monitoring technique or computing method to quantitatively assess the parameters in CWs models, (2) correcting the simulation errors caused by the assumption of Activated Sludge Models (ASMs) and developing a complete biofilm reaction sub-model, (3) simplification of the comprehensive model, and (4) need of emerging pollutants modeling.

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语言: English 文献类型: Review

作者关键词: constructed wetlands; subsurface flow; numerical simulation; model

**KeyWords Plus:** WASTE-WATER TREATMENT; REACTIVE TRANSPORT;

ORGANIC-MATTER; REMOVAL; SIMULATION; SUBSTRATE; PERFORMANCE;

PESTICIDES; DESIGN; BIODEGRADATION

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# 信息工程学院

## 第1条,共3条

标题: Convolutional neural network for recognizing highway traffic congestion

作者: Cui, H (Cui, Hua); Yuan, GG (Yuan, Gege); Liu, N (Liu, Ni); Xu, MY (Xu,

Mingyuan); Song, HS (Song, Huansheng)

来源出版物: JOURNAL OF INTELLIGENT TRANSPORTATION

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摘要: We investigates the performance of deep Convolutional Neural Network (CNN) for recognizing highway traffic congestion state in surveillance camera images. Different from the usual images in ImageNet, images generated by highway surveillance cameras usually have much more extensive range of perspective and thus larger area of background. Therefore the objective road and vehicles are not as prominent as target object in ImageNet images. And also these images from cameras across a large number of highway sites could show a very rich variance of scenes, road configurations. We are very interested to study whether convolutional networks are still reliably able to classify such images, without any special previous processing such as segmentation of objective roads. Two classic convolutional networks, AlexNet and GoogLeNet are employed to classify congestion state. We build a highway imagery dataset using real-life traffic videos to evaluate the CNNs recognition performance. These images cover a wide range of road configurations, times of the day, weather and lighting conditions, and have been labeled with one of the two states, congestion or non-congestion. The experimental results indicate that under the current strategy of feeding images directly into networks, both AlexNet and GoogLeNet can achieve an excellent recognition accuracy of 98% on held-out test samples. And many of the misclassified images turn out to be borderline

cases. More results include that scale and perspective in photography could affect the recognition result.

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语言: English 文献类型: Review

作者关键词: AlexNet; Convolutional Neural Network (CNN); GoogLeNet; object

classification; traffic congestion

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### 第 2 条, 共 3 条

标题: A car-following model to assess the impact of V2V messages on traffic dynamics 作者: Li, TL (Li, Tenglong); Ngoduy, D (Ngoduy, Dong); Hui, F (Hui, Fei); Zhao, XM (Zhao, Xiangmo)

来源出版物: TRANSPORTMETRICA B-TRANSPORT

DYNAMICS 卷: 8 期: 1 页: 150-165 **DOI**: 10.1080/21680566.2020.1728591 出版

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摘要: Connected vehicles (CVs) are considered to have the potential to significantly improve traffic flow stability. Although several studies have been devoted to modelling car-following behaviour in a connected environment, most model formulations are based on assumptions without empirical observations. Therefore, this paper utilizes data from field experiments to explore the dynamics of CVs. Data mining analysis shows that the driver is more responsive to velocity differences with safety messages. According to the data analysis results, we present a modified car-following model based on the intelligent driver model (IDM). Then, the parameters of our modified IDM are calibrated. It is shown that the modified IDM is able to reproduce the observed experimental data better than the original IDM. Next, we conduct a linear stability analysis of the modified IDM to explore the properties of the model. Finally, simulation experiments are conducted to verify the theoretical analysis.

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语言: English 文献类型: Article

作者关键词: Car-following model; vehicle-to-vehicle communications; data mining analysis; linear stability; microscopic traffic simulation

KeyWords Plus: CONNECTED VEHICLES; AUTONOMOUS VEHICLES; AUTOMATED VEHICLES; DRIVING MODEL; STABILITY; BEHAVIOR; FLOW 地址: [Li, Tenglong; Hui, Fei; Zhao, Xiangmo] Changan Univ, Sch Informat Engn, Xian

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# 第3条,共3条

标题: A Zero-Inflated Ordered Probit Model to Analyze Hazmat Truck Drivers' Violation Behavior and Associated Risk Factors

作者: Wu, JZ (Wu, Jinzhong); Fan, WJ (Fan, Wenji); Wang, WC (Wang, Wencheng)

来源出版物: IEEE

ACCESS 卷: 8 页: 110974-110985 DOI: 10.1109/ACCESS.2020.3001165 出版

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摘要: There are few studies on the violation of truck drivers, especially the hazmat truck driver, although truck driver's violation may cause serious casualties. This paper aims to investigate hazmat truck drivers' violation behavior and identify associated risk factors. Different data sources in intelligent transportation system (ITS) including hazmat transportation management system and traffic safety management system are extracted and emerged together. Three years (2016-2018) of violation data that comprised 11612

trip record in China are employed in this research. Based on Bayesian theory, this study proposes zero-inflated ordered probit (ZIOP) model and three alternative models to exploring the relationship between hazmat truck drivers' violation frequency and the key risk factors. The results show that ZIOP model can handle excessive zero observation problem of violation data properly and differentiate between 'always-zero group' drivers and drivers who did not violate the traffic rules during research period but would do so in different surroundings. The results also indicate that the violation probability and the violation frequency level of hazmat truck drivers are influenced by driver characteristics, freight order attributes, and drivers' violation records. This research provides guidance for driving training and safety education of hazmat truck drivers, and will be helpful in building better driving simulation models.

入藏号: WOS:000546414000115

语言: English 文献类型: Article

作者关键词: Accidents; Hazardous materials; Automobiles; Analytical models; Data models; Traffic data analysis; road traffic safety; Hazmat truck violation; zero-inflated ordered probit

**KeyWords Plus:** LIGHT RUNNING BEHAVIOR; MOTOR-VEHICLE CRASHES; TRAFFIC VIOLATIONS; INJURY-SEVERITY; PLANNED BEHAVIOR; POISSON REGRESSION; FREQUENCY; SPEED; EXPERIENCE; ATTITUDES

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## 电子与控制工程学院

### 第1条,共3条

标题: Estimating Dynamic Distribution Condition of Pedestrian Concentration on an Urban Scale

作者: Li, SG (Li, Shuguang); Song, D (Song, Dong); Zhou, QL (Zhou, Qilong)

来源出版物: JOURNAL OF URBAN PLANNING AND

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摘要: The distribution of pedestrians in urban space reflects the status of urban spatial planning to some extent. The reasonable prediction of pedestrian concentration is of great significance to the evaluation of urban vitality, urban comfort, and urban spatial layout planning. In this paper, a method for predicting pedestrian concentration is proposed, which can estimate pedestrian concentration in a whole city without being limited to a specific intersection or city node. According to the characteristics of three kinds of transportation accessibility based on space syntax and commercial vitality index, a dynamic distribution estimation model of pedestrian concentration is proposed. Taking Xi'an city of China as a case study, through multiple linear regression (MLR), a support vector regression (SVR) algorithm, and random forest (RF) algorithm, the pedestrian concentration in five periods of a day was predicted and analyzed, and the spatial and temporal characteristics of crowd distribution are comprehensively described. The results show that the dynamic distribution model of pedestrian concentration constructed by RF is superior to the MLR and SVR, and its average prediction accuracy can reach 93.86%.

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语言: English 文献类型: Article

作者关键词: Pedestrian concentration; Transportation accessibility; Space syntax;

Multivariate linear regression; Support vector regression; Random forest

KeyWords Plus: SPACE SYNTAX; MOVEMENT; DEMAND; VOLUME

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### 第 2 条, 共 3 条

标题: Research on Accurate House Price Analysis by Using GIS Technology and Transport Accessibility: A Case Study of Xi'an, China

作者: Xue, C (Xue, Chao); Ju, YF (Ju, Yongfeng); Li, SG (Li, Shuguang); Zhou, QL

(Zhou, Qilong); Liu, QQ (Liu, Qingqing)

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摘要: Based on the symmetrical public transportation network data of Xi'an, China obtained by geographic information system (GIS) technology in 2019, three urban public transportation indexes of walking accessibility, bus accessibility, and metro accessibility were established, and a real estate price prediction model was built by using several machine learning algorithms to predict and analysis the housing price in Xi'an, China. Firstly, the symmetrical road network data and real estate property data of Xi'an were collected and preprocessed, secondly, the spatial syntax theory and distance calculation method were applied to establish three indexes of traffic accessibility; finally, taking the house property data and the calculated traffic accessibility indexes as the characteristic index, the real estate price prediction model of Xi'an was constructed by using the random forest algorithm (RF), lightweight gradient lift algorithm (LGBM), and gradient lifting regression tree algorithm (GBDT). The prediction accuracy of the final model is 89.2% and the root-mean-square error is 1761.84. The results show that the accessibility of bus and metro to some extent represent the convenience of public transportation in different areas of urban space. The higher the accessibility index is, the more convenient the traffic is. The real estate price model has high prediction accuracy and can reflect the real situation of urban real estate price. The importance of the three accessibility features to the real estate price prediction model are nearly more than 20%, which indicates that the accessibility of urban public transportation has an important impact on the change of urban real estate price, and the development of urban public transportation plays an important role in the real estate economy.

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语言: English 文献类型: Article

作者关键词: urban symmetrical public transportation; GIS Technology; transport

accessibility; machine learning algorithm; housing price prediction

**KeyWords Plus: MASS-TRANSIT** 

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## 第3条,共3条

标题: Research on the Sustainable Development of Urban Housing Price Based on Transport Accessibility: A Case Study of Xi'an, China

作者: Xue, C (Xue, Chao); Ju, YF (Ju, Yongfeng); Li, SG (Li, Shuguang); Zhou, QL (Zhou, Qilong)

来源出版物: SUSTAINABILITY 卷: 12 期: 4 文献

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摘要: The development of a real estate economy is beneficial to urban stability. A method of real estate price prediction based on transport accessibility is proposed. The method adds bus accessibility and metro accessibility into the model, which has higher prediction accuracy than the traditional model. Firstly, bus accessibility and metro

accessibility are calculated according to the space syntax theory. Then, four models, the traditional hedonic price model (HPM) with transport accessibility, the traditional hedonic price model without transport accessibility, the random forest (RF) model with transport accessibility, and the random forest model without transport accessibility, are introduced. Finally, the four models are compared and analyzed in terms of precision and importance of index contributions. Taking Xi 'an, China, as an example, the experimental results show that the transport accessibility calculated based on space syntax can accurately represent the transport convenience in an urban space structure. Furthermore, it has a great influence on the contribution of indexes in the model. With the introduction of bus accessibility and metro accessibility, the accuracy of the real estate price prediction model is greatly improved.

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语言: English 文献类型: Article

作者关键词: sustainable development; bus accessibility; metro accessibility; real estate price estimation; model comparison

KeyWords Plus: PROPERTY-VALUES; HEDONIC PRICE; SPACE

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# 人文学院

# 第1条,共3条

标题: Evaluating and recognizing stressful periods and events of urban migrant children from microblog

作者: Ji, F (Ji, Fang); Hsu, CH (Hsu, Ching-Hsien); Montenegro-Marin, CE (Montenegro-Marin, Carlos Enrique)

来源出版物: CURRENT PSYCHOLOGY **DOI**: 10.1007/s12144-020-00844-8 提前访

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摘要: Increased issues in the health of urban migrant children induced by mental stress have attracted worldwide attention. The stable growth of migrant children, which affects the sustainable stability of the community, is adversely impacted by sustained pressures without adequate assistance and advice. Therefore, psychological stress from each post on microblog has been established through research focused on detecting migrant children. Nevertheless, after stressful times, it is more important to consider stress from aspect to recognize stressful periods and stressful incidents that cause each stressful period. This paper identifies the problem of the recognition of migrant children in the open social network microblog stressful periods and stressor events. Besides, the improved Poisson-dependent probability model has been developed and focused on the study of the postings of migrant children during stressful activities in schools to compare stressors with a set of postings on Tencent Weibo (microblog). Through this model the average stressed times of migrant children which obtains more information regarding potential stressors affecting stressed periods.

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语言: English

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作者关键词: Mental stress; Psychological stress; Microblog; Migrant children

**KeyWords Plus: CHINA** 

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## 第2条,共3条

标题: 'Get a Fish' vs. 'Get a Fishing Skill': Farmers' Preferred Compensation Methods to Control Agricultural Nonpoint Source Pollution

作者: Li, XP (Li, Xiaoping); Yan, Y (Yan, Yan); Yao, LY (Yao, Liuyang)

来源出版物: INTERNATIONAL JOURNAL OF ENVIRONMENTAL RESEARCH

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摘要: Ecological compensation is an important means for controlling agricultural nonpoint source pollution, and compensation methods comprise an essential part of the compensation policy for mitigating this form of pollution. Farmers' choice of compensation methods affects their response to compensation policies as well as the effects of pollution control and ecological compensation efficiency. This study divides ecological compensation methods into two distinct philosophies-the "get a fish" method (GFM) and "get a fishing skill" method (GFSM)-based on policy objectives, to determine farmers' choice between the two methods and the factors influencing this choice. Furthermore, by analyzing survey data of 632 farmers in the Ankang and Hanzhong cities in China and using the multivariate probit model, the study determines farmers' preferred option among four specific compensation modes of GFM and GFSM. The three main results are as follows. (1) The probability of farmers choosing GFM is 82%, while that of choosing GFSM is 51%. Therefore, GFM should receive more attention in compensation policies relating to agricultural nonpoint source pollution control. (2) Of the four compensation modes, the study finds a substitution effect between farmers' choice of capital and technology compensations, capital and project compensations, material and project compensations, while there is a complementary relationship between the choice of material and technology compensations. Therefore, when constructing the compensation policy basket, attention should be given to achieving an organic combination of different compensation methods. (3) Highly educated, young, and male farmers with lower part-time employment, large cultivated land, and a high level of eco-friendly technology adoption and policy understanding are more likely to choose GFSM. Hence, the government should prioritize promoting GFSM for farmers with these characteristics, thereby creating a demonstration effect to encourage transition from GFM to GFSM.

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语言: English 文献类型: Article

作者关键词: farmers' preference; compensation method; agricultural non-point source

pollution; multivariate probit model

**KeyWords Plus:** ENVIRONMENTAL SERVICES; WATER-POLLUTION; PREFERENCES; MANAGEMENT; WASTE; CHINA; WILLINGNESS; PROTECTION; PAYMENTS

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### 第3条,共3条

标题: Is China's industrial policy effective? An empirical study of the new energy vehicles industry

作者: Liu, LJ (Liu, Lanjian); Zhang, T (Zhang, Tian); Avrin, AP (Avrin, Anne-Perrine); Wang, XW (Wang, Xianwen)

来源出版物: TECHNOLOGY IN SOCIETY 卷: 63 文献

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摘要: China's traditional automobile industry lags behind that of the developed countries,

but the development of New Energy Vehicles (NEVs) is an opportunity to catch up with the global automobile industry. In China, there has been a widespread attempt to "overtake on the curve" by developing cleaner technology for NEVs. To help with this transition, the Chinese government has introduced a large number of policies to promote the development of the NEV industry. In this study, we examined whether these policies have been effective by analyzing data about policies for China's NEV industry from 2006 to 2018, as well as the NEV patents filed in the United States, Japan, Germany, France, Korea, and China from 1988 to 2018. This paper uses quantitative analysis of policies and factor analysis. The results of the policy quantification regression analysis show that China's industrial policy has a significant influence on the number of patents. For example, China's aim to promote technological progress has been effective in developing an indigenous NEV industry, but whether China will succeed in "overtaking on the curve" is still unclear. The current state of development of NEV patents does not show China have a leading edge in NEV technology. China's NEV industry policies should be further strengthened, especially the core policies on technological innovation.

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语言: English

文献类型: Article

作者关键词: New energy vehicles; Industrial policy; Technology progress

**KeyWords Plus:** RENEWABLE ENERGY; TECHNOLOGY; INNOVATION;

QUALITY; PATENTS; SUPPORT; STATES; WIND

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## 土地工程学院

# 第1条,共3条

标题: Estimating Soil Arsenic Content with Visible and Near-Infrared Hyperspectral Reflectance

作者: Han, L (Han, Lei); Chen, R (Chen, Rui); Zhu, HL (Zhu, Huili); Zhao, YH (Zhao,

Yonghua); Liu, Z (Liu, Zhao); Huo, H (Huo, Hong) 来源出版物: SUSTAINABILITY 卷: 12 期: 4 文献

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摘要: Soil arsenic (AS) contamination has attracted a great deal of attention because of its detrimental effects on environments and humans. AS and inorganic AS compounds have been classified as a class of carcinogens by the World Health Organization. In order to select a high-precision method for predicting the soil AS content using hyperspectral techniques, we collected 90 soil samples from six different land use types to obtain the soil AS content by chemical analysis and hyperspectral data based on an indoor hyperspectral experiment. A partial least squares regression (PLSR), a support vector regression (SVR), and a back propagation neural network (BPNN) were used to establish a relationship between the hyperspectral and the soil AS content to predict the soil AS content. In addition, the feasibility and modeling accuracy of different interval spectral resampling, different spectral pretreatment methods, feature bands, and full-band were compared and discussed to explore the best inversion method for estimating soil AS content by hyperspectral. The results show that 10 nm + second derivative (SD) + BPNN is the optimum method to predict soil AS content estimation; R-v(2) is 0.846 and residual predictive deviation (RPD) is 2.536. These results can expand the representativeness and

practicability of the model to a certain extent and provide a scientific basis and technical reference for soil pollution monitoring.

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作者关键词: estimation mechanism; soil AS contents; hyperspectral; back propagation neutral network

**KeyWords Plus:** HEAVY-METAL CONCENTRATIONS; SPECTROSCOPY; PREDICTION; MECHANISM; ELEMENTS; SPECTRA; CLAY; AREA

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# 第 2 条, 共 3 条

标题: Quantifying the Spatial Association between Land Use Change and Ecosystem

Services Value: A Case Study in Xi'an, China

作者: Shao, YJ (Shao, Yajing); Yuan, XF (Yuan, Xuefeng); Ma, CQ (Ma, Chaoqun); Ma,

RF (Ma, Ruifang); Ren, ZX (Ren, Zhaoxia)

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摘要: The impact of land use and land cover (LULC) change on ecosystem services value (ESV) varies in different spatial locations. Although many studies have focused on quantifying the effect of LULC change on ESV, few have considered the spatial heterogeneity of the relationship between LULC change and ESV. Therefore, this study examines the relationship between ESV and LULC change from a spatial perspective in Xi'an City. We divide the study area into 10,522 grid cells, based on land cover data from 2000 to 2018, and we identify the spatial-temporal dynamics of LULC change. Next, we employ the Benefits Transfer Method (BTM) to evaluate the ESV, and the ESV is corrected by the normalized difference vegetation index (NDVI). A geographically weighted regression (GWR) model and ordinary least squares (OLS) regression model are used to assess the spatial association of LULC change and ESV. The results show that the

total ESV loss is 6.57 billion yuan (Chinese yuan), and the loss rate is 12.18%. The distribution of ESV shows an obvious spatial heterogeneity, and the low-value area of ESV expands eastward from the main urban area. More than 50% of total ESV is provided by woodland. From 2000 to 2018, the land use pattern in Xi'an underwent a significant change with the developed land increasing by 64.09%, whereas farmland decreased by 12.49%. Based on the GWR model, the relationship between LULC change and ESV in Xi'an showed a significant negative association and spatial heterogeneity. Our study results provide a new way to effectively identify the relationship between LULC change and ESV, and in turn, to fully understand the ecological trends at the regional scale, laying a foundation for regional sustainable development.

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语言: English 文献类型: Article

作者关键词: land use and land cover change; ecosystem services value; spatial regression; GWR model

KeyWords Plus: SPATIOTEMPORAL CHANGES; GREEN PROGRAM; RIVER-BASIN; IMPACTS; DYNAMICS; PROVINCE; REGION; GRAIN; CITY 地址: [Shao, Yajing; Yuan, Xuefeng; Ma, Chaoqun; Ma, Ruifang; Ren, Zhaoxia]

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标题: Spatiotemporal Dynamics and Driving Forces of Ecosystem Changes: A Case Study of the National Barrier Zone, China

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摘要: It is of great significance to study the spatiotemporal dynamics of the ecosystem and explore the driving forces that affect change in the ecosystem in the National Barrier Zone (NBZ). Based on multi-source remote sensing data, this paper analyzed the change in the ecosystem in the NBZ from 2000 to 2015. Natural and social economic factors were selected as the driving factors, and the change mechanism of the ecological system in the NBZ area was analyzed by means of redundancy analysis and other methods. The results showed the following: (1) Between 2000 and 2015, the ecosystem changes in the NBZ are obvious. It is important to note that the grassland and urban ecosystem increased by 13,952 and 6720 km(2), respectively; at the same time, the desert ecosystem significantly decreased by 4544 km(2). (2) The human activity represented by gross domestic product (GDP) is the main factor in the change of ecosystem change in the NBZ with a contribution of 75%, especially in the ecological barrier of the Sichuan-Yunnan-Loess plateau with a GDP contribution rate of 83%. (3) The changes in the ecosystems are significantly influenced by multifactorial interactions, such as the joint contribution rate of the drought index (PDSI) and GDP reaching 0.11 in the ecological barrier of Qinghai-Tibet plateau. (4) The ecological protection projects, such as the Green for Grain Project in the NBZ, play a positive role, and the ecological environment is improving. The conclusions of this paper will be used as a basic theory to contribute to subsequent research on ecosystem services, policy making, and other aspects in the NBZ.

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语言: English 文献类型: Article 作者关键词: National Barrier Zone; redundancy analysis; ecosystem change; driving forces

**KeyWords Plus:** LAND-USE; MANAGEMENT

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### 地质工程与测绘学院

# 第 1 条, 共 2 条

标题: Spatial-Temporal Characteristics of Coastline Changes in Indonesia from 1990 to 2018

作者: Sui, LC (Sui, Lichun); Wang, J (Wang, Jun); Yang, XM (Yang, Xiaomei); Wang, ZH (Wang, Zhihua)

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摘要: As a valuable resource in coastal areas, coastlines are not only vulnerable to natural processes such as erosion, siltation, and disasters, but are also subjected to strong pressures from human processes such as urban growth, resource development, and pollution discharge. This is especially true for reef nations with rich coastline resources and a large population, like Indonesia. The technical joint of remote sensing (RS) and geographic information system (GIS) has significant advantages for monitoring coastline changes on a large scale and for quantitatively analyzing their change mechanisms. Indonesia was taken as an example in this study because of its abundant coastline resources and large population. First, Landsat images from 1990 to 2018 were used to obtain coastline information. Then, the index of coastline utilization degree (ICUD) method, the changes in land and sea patterns method, and the ICUD at different scales method were used to reveal the spatiotemporal change pattern for the coastline. The results found that: (1) Indonesia's total coastline length has increased by 777.40 km in the past 28 years, of which the natural coastline decreased by 5995.52 km and the artificial coastline increased by 6771.92 km. (2) From the analysis of the island scale, it was known that the island with the largest increase in ICUD was Kalimantan, at the expense of the mangrove coastline. (3) On the provincial scale, the province with the largest change of ICUD was Sumatera Selatan Province, which increased from 100 in 1900 to 266.43 in 2018. (4) The change trend of the land and sea pattern for the Indonesian coastline was mainly expanded to the sea. The part that eroded to the land was relatively small; among which, Riau Province had the most significant expansion of land area, about 177.73 km(2), accounting for 23.08% of the increased national land area. The worst seawater erosion was in the Jawa Barat Province. Based on the analysis of population and economic data during the same period, it was found that the main driving mechanism behind Indonesia's coastline change was population growth, which outweighed the impact of economic development. However, the main constraint on the Indonesian coastline was the topographic factor. The RS and GIS scheme used in this study can not only provide support for coastline resource development and policy formulation in Indonesia, but also provide a valuable reference for the evolution of

coastline resources and environments in other regions around the world.

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语言: English 文献类型: Article

作者关键词: coastline; Indonesia; remote sensing; change monitoring; GIS

 $\textbf{KeyWords Plus:} \ \textbf{SEA-LEVEL RISE}; \ \textbf{SHORELINE CHANGE}; \ \textbf{CLIMATE-CHANGE}; \\ \textbf{CLIMATE-CHANGE}; \ \textbf{CLIMATE-CHANGE}; \ \textbf{CLIMATE-CHANGE}; \\ \textbf{CLIMATE-CHANGE}; \ \textbf{CLIMATE-CHANGE}; \\ \textbf{CLIMATE-CHANGE}; \ \textbf{CLIMATE-CHANGE}; \\ \textbf{CLIM$ 

COASTAL VULNERABILITY; AUTOMATIC DETECTION; SATELLITE IMAGERY; FIELD SURVEY; TSUNAMI; SUMATRA; SEGMENTATION

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# 第 2 条, 共 2 条

标题: Disaggregating County-Level Census Data for Population Mapping Using Residential Geo-Objects With Multisource Geo-Spatial Data

作者: Wu, TJ (Wu, Tianjun); Luo, JC (Luo, Jiancheng); Dong, W (Dong, Wen); Gao, LJ (Gao, Lijing); Hu, XD (Hu, Xiaodong); Wu, ZF (Wu, Zhifeng); Sun, YW (Sun, Yingwei); Liu, JS (Liu, Jinsong)

来源出版物: IEEE JOURNAL OF SELECTED TOPICS IN APPLIED EARTH OBSERVATIONS AND REMOTE

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摘要: Accurate spatialization of socioeconomic data is conducive to understand the spatial and temporal distribution of human social development status and, thus, effectively support future scientific decision-making. This study focuses on population mapping, which is a classical spatialization of macroeconomic data of the social economy. Traditional population mapping based on rough grids or administrative divisions such as townships often has deficiencies in the accuracy of spatial pattern and prediction. In this article, hence, we employ residential geo-objects as basic mapping units and formalize the problem as a spatial prediction process using machine-learning (ML) methods with high-spatial-resolution (HSR) satellite remote sensing images and multisource geospatial data. The indicators of population spatial density, including residential geo-objects' area, building existence index, terrain slope, night light intensity, density of point of interest (POI) and road network from Internet electronic maps, and locational factors such as the distances from road and river, are jointly applied to establish the relationship between these multivariable factors and quantitative index of population density using ML algorithms such as Random Forests and XGBoost. The predicated

values of population density from the mined nonlinear regression relation are further used to calculate the weights of disaggregation of each unit, and then the population quantity distribution at the scale of residential geo-objects is obtained under the control of the total amount of population statistics. Experiments with a county area show that the methodology has the ability to achieve better results than the traditional deterministic methods by reproducing a more accurate and finer geographic population distribution pattern. Meanwhile, it is found that the optimization of mapping results may benefit from the multisources geospatial data, and thus the methodological framework can be recommended to be extended to other spatialization areas of socioeconomic data.

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语言: English 文献类型: Article

作者关键词: Census data; machine-learning (ML) algorithms; multisource geospatial data; population mapping; residential geo-objects; spatialization

**KeyWords Plus:** SUPPORT VECTOR REGRESSION; SOIL ORGANIC-CARBON; LAND-COVER; BUILDING POPULATION; SATELLITE IMAGERY;

URBAN-POPULATION; PRESENCE INDEX; CLASSIFICATION; MODELS; GIS

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### 地球科学与资源学院

### 第1条,共2条

标题: Consumption of products of livestock resources in Kazakhstan: Characteristics and in fluencing factors

作者: Liang, YH (Liang, Yihang); Zhen, L (Zhen, Lin); Zhang, CS (Zhang, Changshun);

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摘要: The deterioration of the global ecological environment has accelerated the degradation of grassland resources, which directly affects the production of livestock resources and the lives of residents in countries or regions that treat products of livestock resources as the main food source. In Kazakhstan, one of the countries facing a serious grass-livestock conflict, maintaining its residents' demand for products of livestock resources is becoming increasingly important. To explore the characteristics of consumption of products of livestock resources in Kazakhstan and the factors that influence the consumption of these products, this paper considers data on products of livestock resources in Kazakhstan and factors such as the economic development of a region, grassland resources utilization, grassland degradation, livestock husbandry, trade balance volumes of product of livestock resources, and population distribution to obtain the following conclusions and implications. First, the most consumed product of livestock resources in Kazakhstan is milk, followed by meat and eggs; beef, in particular, accounted for the highest proportion of all meat. Second, except milk, which showed a continuous increase in consumption, other products of livestock resources showed an upward trend only after 2000, which represented a turning point. Third, the total consumption of products of livestock resources increased progressively from north to south: it is lowest in the typical grasslands, then higher in the semi-desert grasslands, and is greatest in the desert grasslands. Changes in per capita consumption were consistent with the variations in the regional livestock inventories. Fourth, the conflict between consumption and supply in desert grasslands is becoming increasingly severe. To guarantee the dynamic demand of its residents for consumption of products of livestock resources, the Kazakhstan government can make better use of grassland ecosystem resources by adjusting the structure of livestock husbandry, rotating different grasses, and introducing improved grazing animal species in a bid to maintain grassland ecosystem services and improve local residents' well-being.

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语言: English 文献类型: Article

作者关键词: Livestock resource; Product; Consumption; Grassland; Livestock inventory **KeyWords Plus:** FOOD-CONSUMPTION; CLIMATE-CHANGE; GRASSLAND;

ADAPTATION; PATTERNS; IMPACT; INCOME

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#### 第 2 条, 共 2 条

标题: Stratigraphy and its environmental implications of the Late Pleistocene Shuidonggou Formation in the western Ordos Block, North China

作者: Liu, XB (Liu, Xiaobo); Hu, JM (Hu, Jianmin); Shi, W (Shi, Wei); Chen, H (Chen,

Hong); Liang, X (Liang, Xia); Li, MT (Li, Mingtao)

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刊: SI 页: 7359-7370 **DOI**: 10.1002/gj.3972 提前访问日期: AUG 2020 出版

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摘要: The Late Pleistocene sedimentary strata that is widely developed in North China records the signature of prehistoric human settlement. The Late Palaeolithic Shuidonggou

Formation that is mainly distributed in the western Ordos Block of North China is best known for containing abundant palaeontological fossils and palaeolithic artefacts with an age span of similar to 35-20 ka B.P. However, its sequence and chronostratigraphy are poorly understood due to the lack of stratigraphic correlation of a uniform relative stratigraphy, hindering our understanding of the way of human adaptation to the environmental and climatic changes. In this article, analyses of high-resolution stratigraphy of Shuidonggou Formation complemented with chronostratigraphic framework were performed based on our field investigations, Optically Stimulated Luminescence dating and literature survey, to reconstruct environmental and climatic conditions in western Ordos Block in the Late Pleistocene. Stratigraphic correlations and chronological evidence indicate that the sedimentary units of the Shuidonggou Formation are similar to 35-10 ka B.P. in age, and three lithologic units of Shuidonggou Formation that is well approximated on a regional basis were identified: gravel layers that were deposited in a fluvial environment at the bottom, rhythm layers consist of sand layers, and clay layers deposited in a lacustrine environment in the lower part, and cycles composed of lacustrine silt and loess in the upper part. These units are defined by sedimentology, matching to lake levels. Continuous and widely developed clay and sandy clay about 3-10 m thick occur at various levels within river terrace II and littoral deposits located 10-20 m above the current lake level provide evidence for the existence of the high lake level/palaeo-lake in western Ordos Block between similar to 35 and 22 ka B.P. Palaeo-lake shrinking occurred after when lakeshore sand and gravel, as well as sandy facies of aeolian origin, started to accumulate in the study area in 22-17 ka B.P. The development of the palaeo-lake probably had been climate-controlled since the warmer and humid climate conditions suggested by the lower sequences corresponds to the Marine Isotope Stage 3 while the cool and dry climate were identified in upper sequences corresponds to the Last Glaciation Maximum. Besides, the human occupation in the Shuidonggou site was synchronous with the development of the palaeo-lake of the same time window. It is suggested that the evolution of the palaeo-lakes in the Late Pleistocene, together with the environmental effects of climate change, play an important role in the human occupation and survival strategies.

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语言: English 文献类型: Article

作者关键词: environment; human occupation; Late Pleistocene; North China;

palaeo-lake; Shuidonggou Formation

**KeyWords Plus:** TENGGER DESERT; TIBETAN PLATEAU; CLIMATE RECORDS; KA BP; LAKE; SITE; ICE; RECONSTRUCTION; SEDIMENTS; NINGXIA

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# 外国语学院

# 第1条,共1条

标题: The Research Trends of Multilingualism in Applied Linguistics and Education (2000-2019): A Bibliometric Analysis

作者: Lin, Z (Lin, Zhong); Lei, L (Lei, Lei)

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摘要: This study explored the state of the arts of bilingualism or multilingualism research in the past two decades. In particular, it employed a bibliometric method to examine the publication trend, the main publication venues, the most influential articles, and the important themes in the area of bilingualism or multilingualism. The main findings are summarised as follows. First, a significant increase of publications in the area was found in the past two decades. Second, the main publication venues and the most influential articles were reported. The results seemingly indicated that the research in the area focused largely on two broad categories, that is, (1) bilingualism or multilingualism from the perspective of psycholinguistics and cognition research and (2) how second/additional languages are learned and taught. Last, the important themes, including the hot and cold themes, were identified. Results showed that researchers prefer to study bilingualism or multilingualism more from deeper cognition levels such asmetalinguistic awareness, phonological awareness, and executive control. Also, they may become more interested in the issue frommultilingualperspectives rather than from the traditionalbilingualview. In addition, the themeemergent bilinguals, a term closely related totranslanguaging, has recently gained its popularity, which seemingly indicates a recent advocate forheteroglossic language ideologies.

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语言: English 文献类型: Article

作者关键词: multilingualism; bilingualism; research trends; bibliometric analysis;

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## 心理健康教育与咨询中心

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标题: Parenting style, coping efficacy, and risk-taking behavior in Chinese young adults 作者: Ju, CT (Ju, Chengting); Wu, RN (Wu, Rina); Zhang, BS (Zhang, Baoshan); You, XQ (You, Xuqun); Luo, Y (Luo, Yun)

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摘要: The goal of this study was to examine the relationship between three parenting styles (warmth, rejection, and overprotection), coping efficacy and risk-taking behavior in Chinese young adults. A total of 719 subjects completed three instruments: the Egna Minneu av Bardndosnauppforstran, the Coping Efficacy Questionnaire and the Adolescent Risk-Taking Questionnaire. Structural equation modeling results showed that maternal warmth (negatively) and rejection (positively), but not overprotection, correlated with risk-taking behavior via coping efficacy, whereas paternal rejection and overprotection (positively), but not warmth, correlated with risk-taking behavior via coping efficacy. These results suggest that parenting styles indirectly associate with risk-taking behavior through coping efficacy in young adults.

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