



DEPARTMENT OF CONSUMER AFFAIRS

CALIFORNIA ARCHITECTS BOARD

LANDSCAPE ARCHITECTS TECHNICAL COMMITTEE

Public Protection through Examination, Licensure, and Regulation

OPES Evaluation of Passing Scores

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STATE OF CALIFORNIA



DEPARTMENT OF CONSUMER AFFAIRS

OFFICE OF PROFESSIONAL
EXAMINATION SERVICES

Road Map



General
information



Statistical
boot camp



Discussion
of findings

General information

Who is OPES?

What questions am I here to answer?

What do we know about the Landscape Architect Registration Examination (LARE)?

The Office of Professional Examination Services provides:

Professional consulting services in examination validation and development to DCA's boards, bureaus, and committees.

Recommendations based on regulations, professional guidelines, and technical standards related to licensure examinations.

LARE Research Questions

Are California pass rates **significantly** different than national pass rates?

If difference exists, what are some possible causes?

Landscape
Architect
Registration
Examination
(LARE)

Four Sections

Sections are independent

States have different
pathways to qualification

California Supplemental Examination (CSE)

Requires passing LARE

Pass rates are roughly
comparable to LARE pass rates

Specific to California

Data is more accessible

Examinations and Available Data

LARE: Landscape Architect
Registration Examination

Pass rate and sample size
(2018-2020) by section



CSE: California
Supplemental Examination

Pathway to qualification

Pass rate and sample size
(2018-2020)

Education

Number of attempts

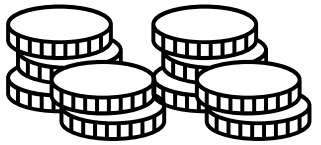
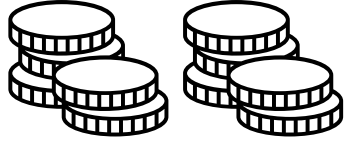
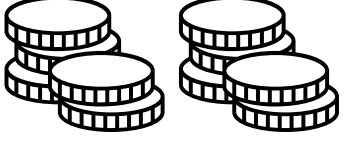
Statistical Boot Camp

Effect Size is the size of the difference between the groups.

Significance is the confidence we have that there is a difference.

Sample Size or n is the number of observations.

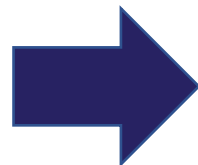
Is the coin fair?

		Effect Size	Significance
1	 6 heads and 4 tails	~0.10	0.65
5	 30 heads and 20 tails	~0.10	0.31
50	 300 heads and 200 tails	~0.10	0.01

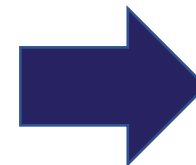
Evaluating Differences

- Used when comparing groups of categorical data.
- Tests for the differences between groups.

Section 1 (2018)	CA	NAT-CA
PASS	145	697
FAIL	75	270



$\chi^2 = 3.3$
Significance = .068
Effect Size = .05



Close to significant, and
the difference would be
about 5% if it was.

LARE Pass Rates 2018–2020

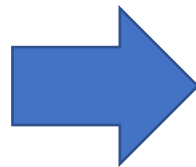
Section	California		National - California		significance	effect size
	n	pass %	n	pass %		
1	534	0.647	2549	0.686	0.085	0.03
2	530	0.57	2646	0.702	<.001	0.10
3	457	0.612	2639	0.654	0.084	0.03
4	445	0.633	2603	0.669	0.138	0.026

LARE Analysis 2018–2020

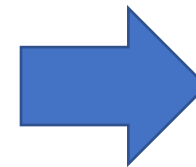
Section 2 is significantly different for the CA population.
All other sections are not.

Data is available in your packet for all sections and years.

	CA	NAT-CA
PASS	305	225
FAIL	1859	787



$\chi^2 = 32.85$
 $P = <0.001$
Effect Size = 0.10



We are highly confident there is a difference between CA and National, and it accounts for approximately 10% of the variation in the entire sample.

LARE Section 1 Pass Rates 2018–2020

	Pass	Fail	Pass %	Group
NY	206	65	76%	1
CO	90	32	74%	1
TX	125	64	66%	2
CA	301	174	63%	2
FL	109	125	47%	3

LARE Section 2 Pass Rates 2018–2020

	Pass	Fail	Pass %	Group
CO	97	27	78%	1
NY	201	80	72%	1
TX	130	80	62%	2
CA	270	197	58%	2
FL	102	93	52%	3

LARE Section 3 Pass Rates 2018–2020

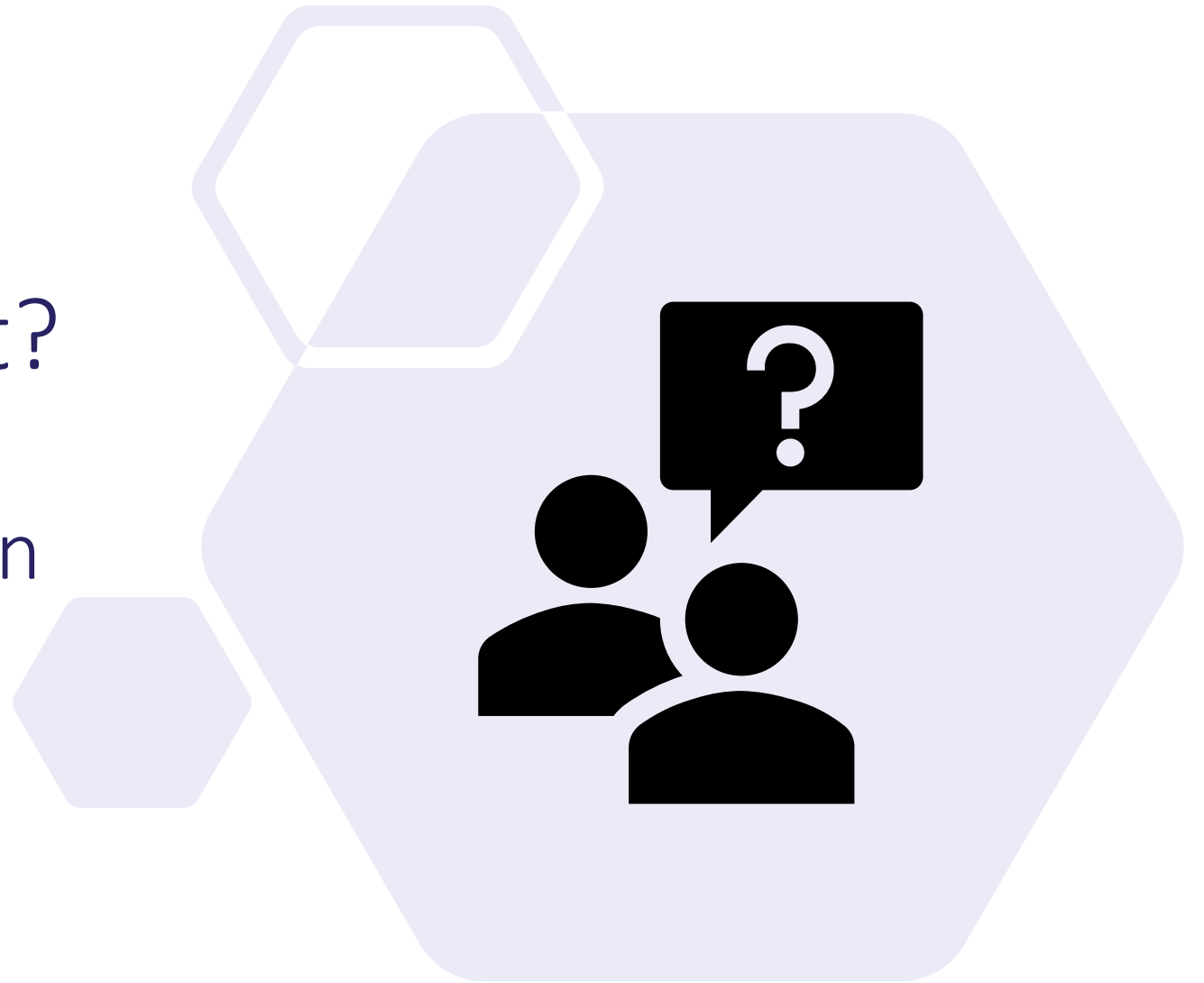
	Pass	Fail	Pass %	Group
NY	195	80	71%	1
CO	99	42	70%	1
CA	248	153	62%	2
TX	127	111	53%	3
FL	96	101	49%	3

LARE Section 4 Pass Rates 2018–2020

	Pass	Fail	Pass %	Group
CO	88	36	71%	1
NY	176	76	70%	1
CA	253	136	65%	2
TX	130	80	62%	2
FL	113	131	46%	3

Okay, there is a
difference, now what?

The problem of causation



Discussion of Possible Causes and associated data

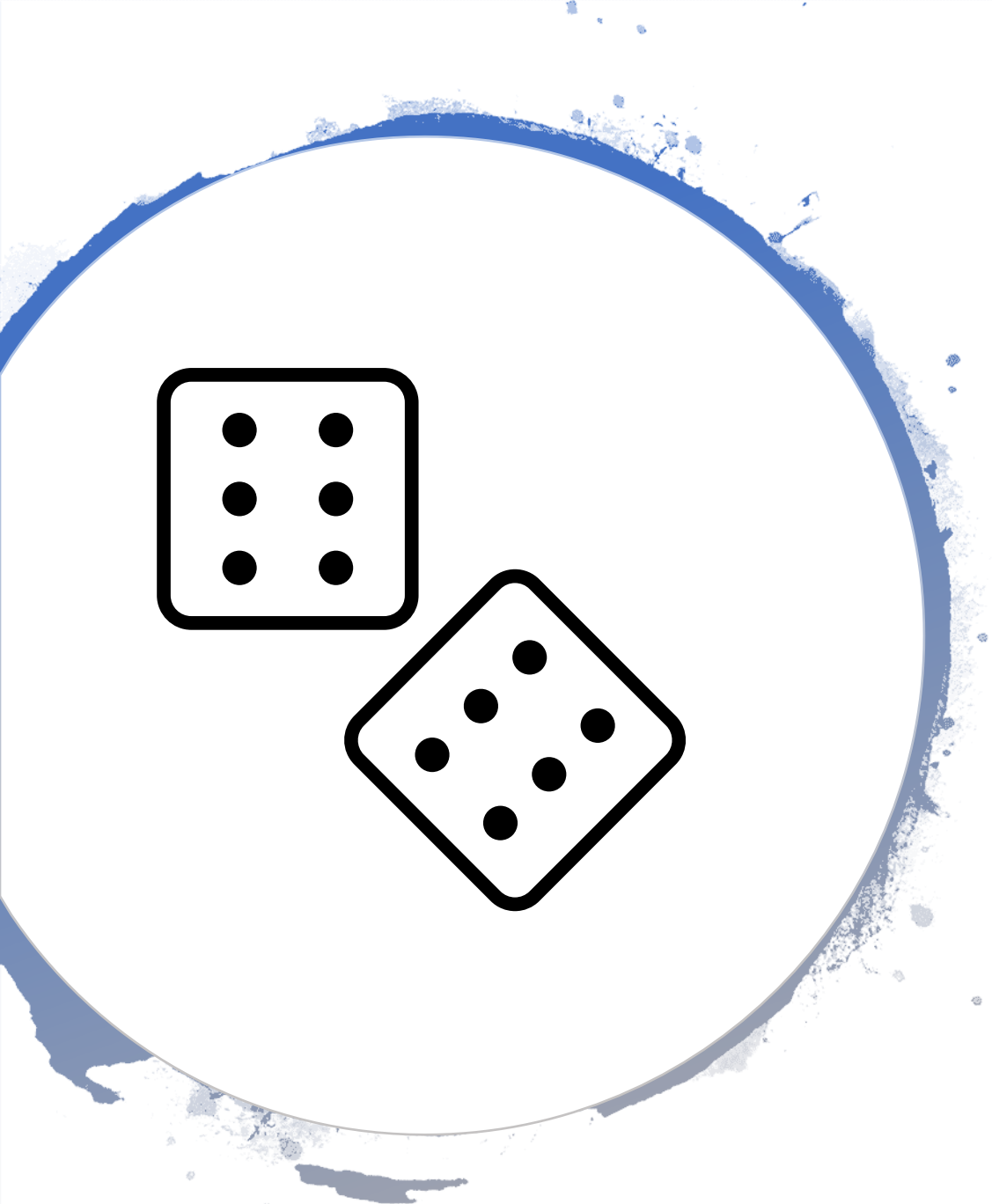
Chance

Pathway to qualification

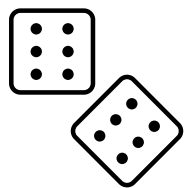

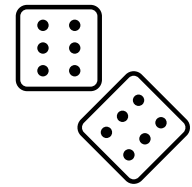
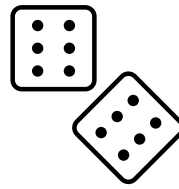
Education of the candidate

Quality of work experience

Quality of examination



Chance

- Section 1 
- Section 2 
- Section 3 
- Section 4 

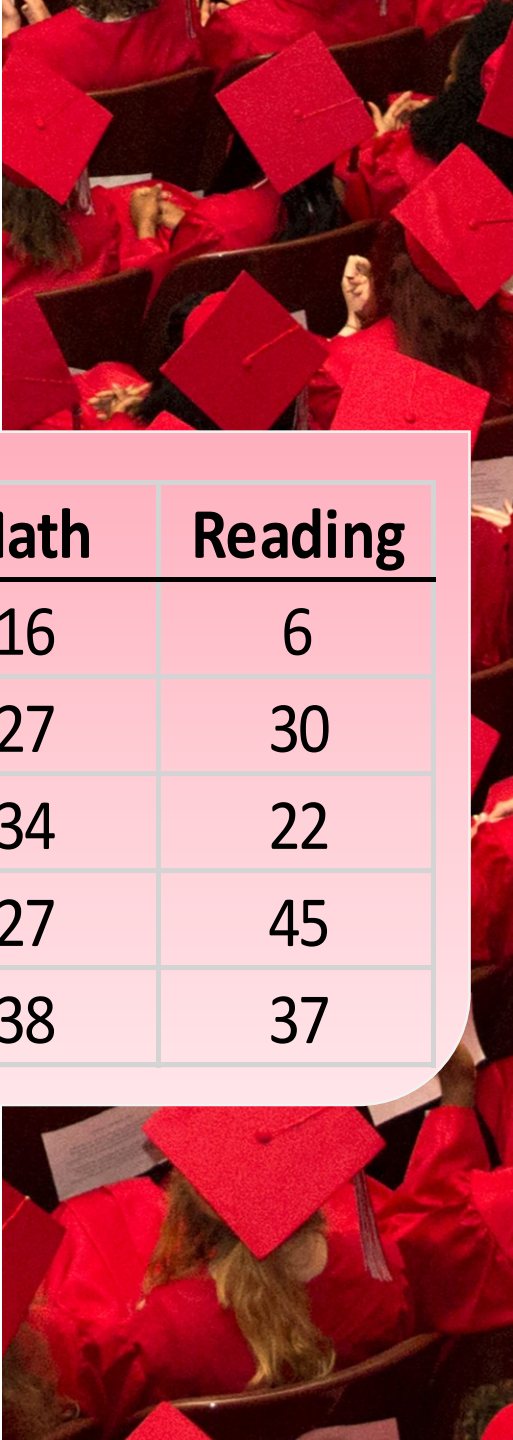


Pathway to qualification

- Pathway does not increase chance of failing CSE.
- CA candidates are significantly more likely to take Sections 1 and 2 concurrently.

Education of the candidate

- The proportion of students who attend college varies widely by state.
- Public education systems vary widely by state.



	LARE Group	Rank	Math	Reading
Colorado	1	6	16	6
New York	1	11	27	30
Florida	3	16	34	22
Texas	2	28	27	45
California	2	33	38	37

Quality of work experience

- Work experience varies.
- Specialization of firm varies.
- Applicability of work to examination may vary by state.



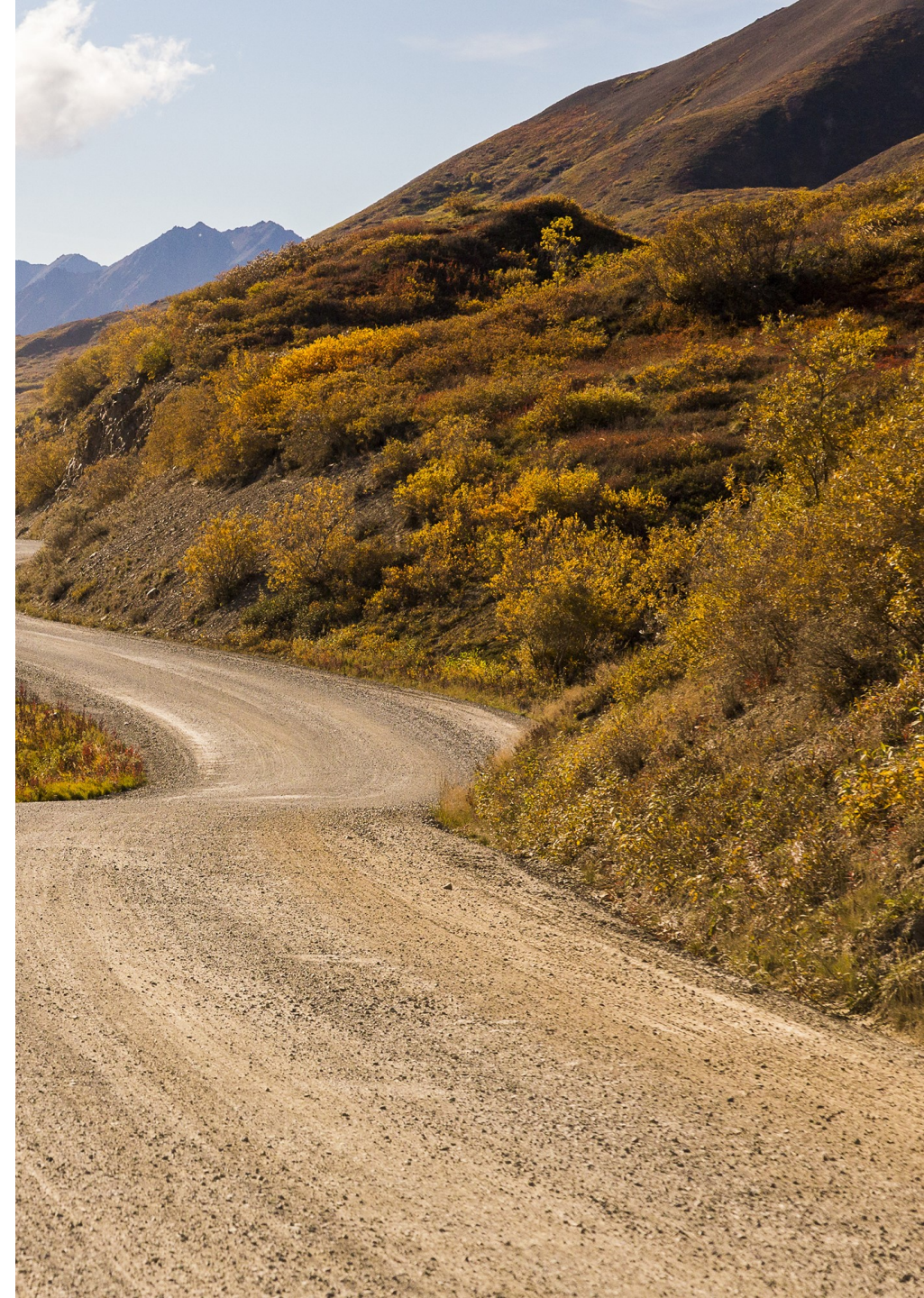
Quality of the examination

- All examinations have some degree of bias.
- Bias will harm some and help others.



Conclusion:

- Section 2 is the only section that beats the chance barrier.
- The approximate difference in pass rate for Section 2 is 10%.
- The cause of that difference is unknown but is likely a combination of many factors.



Other actors related to CSE pass rates

UC Berkeley
Extension

Gender

Reciprocity

Graduate vs bachelor's degree

School accreditation

Thank you.

Any questions?

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