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03 November 2025

Suresh Yellayi
Entain Operations Limited
Suite 6, Atlantic Suites
Europort Avenue, Gibraltar

Re: Mathematical Analysis of *Poker*

File Number: MA-00-GSV-25-05

Dear Mr. Yellayi,

As per Entain Operations Limited's request, please find **Gaming Laboratories International, LLC's (GLI)** mathematical analysis of the following Poker:

1. *Poker*

This report only verifies the mathematical aspects of these games and DOES NOT offer an opinion as to whether or not these games are currently authorized for use in any jurisdiction.

Mathematical Analysis

Gaming Laboratories International, LLC (GLI) was requested by Entain Operations Limited to independently calculate the expected payback for the aforementioned games and confirm that the returns are within the requirements. On the following page, please find a table containing the summary of our results.

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1. Poker hand types statistics

These calculations were done for Royal Flush, Straight Flush, Four of a Kind, Full House, Flush, Straight, 3 of a Kind, 2 pairs, 1 Pair, High Card.

The Poker hand types analysis involved creating subsets of data and conducting Chi-square tests on each subset.

The null hypothesis for the chi-square test is that the observed frequencies of each type of hand matches the theoretical values for a deck that has been shuffled using a perfect random number generator. The p-values observed in these multiple tests are expected to follow a uniform distribution for the range 0.0 to 1.0.

The analysis performs a KS Test (Kolmogorov-Smirnov test) for uniform distribution on the observed p-values, and the combined p-value result of this test is taken as the final result of the Poker hand types statistics tests.

1.1 Poker hand types statistics for 52 cards deck:

Test No.	DOF	ChiSqr	P-Value
1	9	7.88	0.54678
2	9	7.23	0.61361
3	9	17.06	0.04776
4	9	8.72	0.46308
5	9	14.59	0.10290
6	9	1.84	0.99380
7	9	6.00	0.74030
8	9	8.24	0.51030
9	9	12.86	0.16887
10	9	10.88	0.28399
11	9	1.64	0.99599
12	9	4.85	0.84711

Test No.	DOF	ChiSqr	P-Value
13	9	4.37	0.88578
14	9	9.81	0.36618
15	9	3.36	0.94805
16	9	5.71	0.76823
17	9	6.09	0.73091
18	9	8.84	0.45196
19	9	6.62	0.67684
20	9	10.90	0.28245
21	9	12.24	0.19996
22	9	9.76	0.37013
23	9	11.19	0.26298
24	9	14.29	0.11227
25	9	16.56	0.05610
26	9	9.79	0.36747
27	9	4.53	0.87304
28	9	11.87	0.22086
29	9	5.18	0.81802
30	9	13.30	0.14929
31	9	5.06	0.82903
32	9	4.60	0.86769
33	9	6.96	0.64126
34	9	10.15	0.33837
35	9	3.11	0.95983

Test No.	DOF	ChiSqr	P-Value
36	9	9.19	0.42027
37	9	16.80	0.05192
38	9	13.87	0.12720
39	9	3.99	0.91229
40	9	4.39	0.88383
41	9	15.29	0.08320
42	9	7.11	0.62563
43	9	6.58	0.68038
44	9	9.65	0.37992
45	9	7.31	0.60454
46	9	4.93	0.84042
47	9	5.97	0.74302
48	9	5.49	0.79004
49	9	4.70	0.85982
50	9	17.60	0.04015
51	9	9.53	0.38984
52	9	4.51	0.87508
53	9	7.98	0.53655
54	9	12.62	0.18067
55	9	3.51	0.94047
56	9	5.73	0.76707
57	9	11.64	0.23408
58	9	8.49	0.48580

Test No.	DOF	ChiSqr	P-Value
59	9	6.88	0.64910
60	9	5.13	0.82306
61	9	5.84	0.75611
62	9	16.23	0.06228
63	9	16.28	0.06134
64	9	4.90	0.84320
65	9	5.49	0.78970
66	9	8.18	0.51657
67	9	5.83	0.75724
68	9	14.19	0.11587
69	9	21.77	0.00964
70	9	1.66	0.99581
71	9	12.97	0.16408
72	9	6.43	0.69634
73	9	13.58	0.13809
74	9	6.98	0.63945
75	9	7.46	0.58923
76	9	8.87	0.44967
77	9	8.38	0.49648
78	9	12.27	0.19844
79	9	6.77	0.66105
80	9	9.49	0.39294
81	9	6.14	0.72575

Test No.	DOF	ChiSqr	P-Value
82	9	9.51	0.39169
83	9	5.71	0.76827
84	9	9.63	0.38092
85	9	9.89	0.35916
86	9	19.07	0.02460
87	9	6.19	0.72118
88	9	13.07	0.15954
89	9	23.10	0.00598
90	9	26.97	0.00141
91	9	9.49	0.39296
92	9	10.11	0.34159
93	9	10.65	0.30036
94	9	20.62	0.01447
95	9	3.78	0.92508
96	9	8.28	0.50642
97	9	8.94	0.44287
98	9	7.53	0.58219
99	9	12.88	0.16819
100	9	6.69	0.66983
Combined P-value for all tests (Using KS method)			0.99498

Notes:

- 1) The P-values are observed probabilities from the Chi-Square tests. The last row shows the result of the KS Test performed on the p-values for all Chi-Square tests, where there are sufficient data.

2. Poker rank statistics

The Poker rank analysis aims to establish that the rank of the cards in each position was equally distributed in one of the 13 possible ranks (2, 3, 4, 5, 6, 7, 8, 9, 10, J, Q, K, A) for a 52 card deck.

The Poker rank analysis involved creating subsets of data and conducting Chi-square tests on each subset. The analysis performs a KS Test (Kolmogorov-Smirnov test) for uniform distribution on the observed p-values, and the combined p-value result of this test is taken as the final result of the Ranks statistics tests.

2.1 Poker rank statistics for 52 cards deck:

Test No.	DOF	ChiSqr	P-Value
1	84	69.66	0.86957
2	84	69.79	0.86703
3	84	88.94	0.33528
4	84	86.55	0.40272
5	84	67.52	0.90546
6	84	89.12	0.33047
7	84	62.89	0.95877
8	84	87.09	0.38719
9	84	72.62	0.80760
10	84	94.11	0.21134
11	84	94.77	0.19809
12	84	94.12	0.21117
13	84	75.90	0.72380
14	84	60.95	0.97264

Test No.	DOF	ChiSqr	P-Value
15	84	84.71	0.45783
16	84	92.62	0.24362
17	84	80.66	0.58286
18	84	69.18	0.87828
19	84	71.27	0.83760
20	84	83.42	0.49740
21	84	108.67	0.03642
22	84	96.33	0.16877
23	84	99.92	0.11333
24	84	88.37	0.35086
25	84	96.13	0.17232
26	84	79.45	0.62017
27	84	83.40	0.49788
28	84	97.81	0.14394
29	84	122.96	0.00361
30	84	92.92	0.23687
31	84	61.45	0.96944
32	84	91.68	0.26555
33	84	88.64	0.34341
34	84	89.85	0.31110
35	84	83.87	0.48349
36	84	58.41	0.98489

Test No.	DOF	ChiSqr	P-Value
37	84	85.77	0.42583
38	84	104.58	0.06370
39	84	65.02	0.93815
40	84	90.97	0.28269
41	84	118.72	0.00758
42	84	66.00	0.92644
43	84	96.45	0.16657
44	84	87.07	0.38779
45	84	82.86	0.51482
46	84	69.99	0.86326
47	84	59.37	0.98092
48	84	112.41	0.02096
49	84	77.38	0.68202
50	84	95.46	0.18471
51	84	70.43	0.85480
52	84	87.78	0.36752
53	84	77.79	0.66991
54	84	58.68	0.98384
55	84	87.97	0.36210
56	84	114.44	0.01526
57	84	57.36	0.98844
58	84	96.46	0.16639
59	84	101.05	0.09918

Test No.	DOF	ChiSqr	P-Value
60	84	86.58	0.40193
61	84	62.64	0.96085
62	84	96.92	0.15854
63	84	85.36	0.43803
64	84	74.16	0.77003
65	84	65.55	0.93206
66	84	78.79	0.64010
67	84	66.20	0.92398
68	84	107.39	0.04360
69	84	88.04	0.36025
70	84	80.33	0.59304
71	84	103.28	0.07527
72	84	96.65	0.16313
73	84	78.64	0.64452
74	84	74.62	0.75821
75	84	82.92	0.51292
76	84	69.69	0.86907
77	84	72.91	0.80075
78	84	63.26	0.95565
79	84	61.98	0.96581
80	84	66.26	0.92310
81	84	65.21	0.93595
82	84	94.44	0.20455

Test No.	DOF	ChiSqr	P-Value
83	84	79.00	0.63389
84	84	68.24	0.89422
85	84	79.73	0.61146
86	84	74.63	0.75803
87	84	85.81	0.42463
88	84	77.30	0.68420
89	84	81.54	0.55575
90	84	70.27	0.85788
91	84	68.87	0.88362
92	84	92.25	0.25222
93	84	56.78	0.99010
94	84	67.31	0.90859
95	84	69.47	0.87296
96	84	76.66	0.70272
97	84	82.78	0.51731
98	84	114.76	0.01451
99	84	93.09	0.23322
100	84	88.07	0.35921
Combined P-value for all tests (Using KS method)			0.02703

Notes:

- 1) The P-values are observed probabilities from the Chi-Square tests. The last row shows the result of the KS Test performed on the p-values for all Chi-Square tests, where there are sufficient data.

3. Poker suits statistics

The Poker suits analysis aims to verify that the cards dealt exhibit an equal probability of all 4 suits (Clubs, Diamonds, Hearts and Spades) in all positions.

The Poker suits analysis involved creating subsets of data and conducting Chi-square tests on each subset. The analysis performs a KS Test (Kolmogorov-Smirnov test) for uniform distribution on the observed p-values, and the combined p-value result of this test is taken as the final result of the Suits statistics tests.

3.1 Poker suits statistics for 52 cards deck:

Test No.	Positions	DOF	ChiSqr	P-Value
1	7	21	28.86	0.11746
2	7	21	19.41	0.55903
3	7	21	15.40	0.80214
4	7	21	12.31	0.93076
5	7	21	20.34	0.49951
6	7	21	17.57	0.67627
7	7	21	21.91	0.40455
8	7	21	18.49	0.61787
9	7	21	25.24	0.23702
10	7	21	15.45	0.79978
11	7	21	24.59	0.26540
12	7	21	19.62	0.54569
13	7	21	33.99	0.03632
14	7	21	13.34	0.89638
15	7	21	14.67	0.83908
16	7	21	17.53	0.67839

Test No.	Positions	DOF	ChiSqr	P-Value
17	7	21	21.96	0.40168
18	7	21	20.18	0.50974
19	7	21	24.93	0.25032
20	7	21	19.97	0.52307
21	7	21	20.75	0.47445
22	7	21	20.99	0.45980
23	7	21	8.42	0.99311
24	7	21	21.14	0.45054
25	7	21	20.67	0.47929
26	7	21	20.07	0.51683
27	7	21	20.53	0.48774
28	7	21	20.03	0.51949
29	7	21	25.20	0.23860
30	7	21	15.27	0.80892
31	7	21	29.97	0.09253
32	7	21	18.18	0.63773
33	7	21	13.50	0.89008
34	7	21	23.45	0.32067
35	7	21	21.75	0.41414
36	7	21	24.49	0.26994
37	7	21	12.72	0.91798
38	7	21	21.96	0.40201

Test No.	Positions	DOF	ChiSqr	P-Value
39	7	21	23.47	0.31931
40	7	21	19.13	0.57658
41	7	21	17.26	0.69552
42	7	21	25.15	0.24092
43	7	21	42.53	0.00361
44	7	21	32.36	0.05376
45	7	21	28.71	0.12107
46	7	21	34.65	0.03083
47	7	21	23.47	0.31968
48	7	21	19.50	0.55310
49	7	21	25.85	0.21235
50	7	21	25.21	0.23814
51	7	21	18.08	0.64410
52	7	21	25.59	0.22267
53	7	21	16.97	0.71268
54	7	21	13.52	0.88939
55	7	21	26.77	0.17872
56	7	21	18.60	0.61085
57	7	21	12.08	0.93732
58	7	21	29.40	0.10473
59	7	21	21.52	0.42755
60	7	21	21.18	0.44781

Test No.	Positions	DOF	ChiSqr	P-Value
61	7	21	14.06	0.86697
62	7	21	35.64	0.02397
63	7	21	16.66	0.73131
64	7	21	23.82	0.30195
65	7	21	10.38	0.97351
66	7	21	22.47	0.37279
67	7	21	27.31	0.16072
68	7	21	20.33	0.50017
69	7	21	22.71	0.35955
70	7	21	21.25	0.44348
71	7	21	27.88	0.14350
72	7	21	25.75	0.21613
73	7	21	16.91	0.71664
74	7	21	24.31	0.27826
75	7	21	13.17	0.90241
76	7	21	23.64	0.31082
77	7	21	14.28	0.85747
78	7	21	20.41	0.49538
79	7	21	25.47	0.22751
80	7	21	31.43	0.06677
81	7	21	27.14	0.16620
82	7	21	15.50	0.79715

Test No.	Positions	DOF	ChiSqr	P-Value
83	7	21	11.93	0.94158
84	7	21	10.89	0.96496
85	7	21	17.59	0.67502
86	7	21	26.34	0.19366
87	7	21	19.63	0.54447
88	7	21	9.38	0.98593
89	7	21	21.85	0.40806
90	7	21	15.92	0.77413
91	7	21	22.79	0.35550
92	7	21	32.76	0.04895
93	7	21	13.02	0.90780
94	7	21	36.70	0.01822
95	7	21	16.02	0.76877
96	7	21	9.47	0.98497
97	7	21	31.58	0.06448
98	7	21	29.17	0.10991
99	7	21	21.39	0.43557
100	7	21	24.82	0.25498
Combined P-value for all tests (Using KS method)				0.51155

Notes:

- 1) The P-values are observed probabilities from the Chi-Square tests. The last row shows the result of the KS Test performed on the p-values for all Chi-Square tests, where there are sufficient data.

4. Summary of the analysis

4.1 Summary of the analysis of 52 cards deck:

The analysis of 52 cards completes by combining the result of the KS Test performed in the 3 types of analysis (Hand Types, Ranks and Suits) for 52 card decks using the Holm's method and producing a single Combined P -value.

The combined p-value produced using the Holm's method is used as indication for statistical randomness.

Combination of p-values using Holm's Method		
Test	P-Value	P-Adjusted
Ranks Test	0.02703	0.08109
Suits Test	0.51155	1.00000
Hand Types Test	0.99498	1.00000
Combined P-Value using Holm's Method		0.08109

Notes:

- 1) The combined p-value of all statistical tests using Holm's Method conducted for 52 card decks is greater than the minimum value of 0.05 which indicates that the randomness of the observed data falls within 95% confidence limits.

The final outcome of the analysis of 52 cards deck indicates that the RNG is working correctly.

Conclusion

Analysis of actual data from game logs for 'Hand Types', 'Ranks' and 'Suits' for 52-card decks indicated statistical randomness. Since there is no data in the case of 36 card deck, this report does not contain the details of 36 card deck.

GLI has done limited sanity checks to verify the integrity of the game logs. GLI also maintains a copy of the game logs for verification purposes. There were a large enough number of game records to give the calculations sufficient statistical power.

We conclude that the Random Number Generator (RNG) is working correctly.

Please note, the results contained herein are based on game design documentation provided to GLI by the manufacturer. It is the responsibility of the manufacturer to ensure that the gaming software performs in the same way as the documentation.

Please visit Gaminglabs.com to view the applicable Terms and Conditions and GLI Product Certification Scheme.

Should you have any questions or need any additional information, please feel free to contact our office.

Sincerely,

GAMING LABORATORIES INTERNATIONAL, LLC



Christine M. Gallo

Senior Vice President, Quality and Technical Compliance