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Internet Gaming in New Jersey

Calendar Year 2017 Report to the
Division of Gaming Enforcement
Submitted by:

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I. Introduction

This annual report of Internet Gaming in New Jersey will compare demographics and play patterns across the first three full years of data. To gamble in New Jersey, a patron must be at least 21 and located within New Jersey while gambling online. This report was prepared pursuant to N.J.S.A. 5:12-95.18 and examines the overall impact of Internet gaming and problematic patterns of play and the relationship to the state-wide prevalence of problem gambling. Analyses in this report are focused on player demographics, play patterns and use of responsible gambling features.

Given the increasing complexity in terminology and the overlap between gambling (playing games for money) and gaming (playing social games without wagering), the term “gambling” would typically be used in this report. However, since both the legislature and industry refer to gambling as gaming, the terms will be used interchangeably to connote playing casino or poker-related games for money.

Table 1 shows the list of operators, skins, and URLs active in 2016. For purposes of this report, the “Licensee” is the land-based gaming corporation, the “Operator” is the internet gaming provider, and the “Skin” refers to the brand, which may have one or more associated websites, displayed in Table 1 as a URL. New Jersey’s legislation allows both casino games (e.g., Blackjack, Spanish 21, Bonus Blackjack, American and European Roulette, craps, slot machines, video poker) and peer-to-peer games (e.g. No-limit and Limit Hold’em Poker, Pot Limit Omaha (PLO), Seven Card Stud, Draw Poker, Omaha Hi/Lo).

Table 1. Operator and Gaming Sites in 2016

Licensee	Platform Operator(s)	Skin(s)	Game Offerings	URL(s)
Borgata	Bwin	Bwin	Casino/Peer to Peer Poker	www.NJ.Partypoker.com
		Borgata	Casino/Peer to Peer Poker	www.Borgatacasino.com www.Borgatapoker.com
	Pala	Pala	Casino/Peer to Peer Blackjack/Bingo	www.palacasino.com www.palabingousa.com
Caesars Interactive Entertainment	NYX	Caesars	Casino	www.CaesarsCasino.com
	888	Harrahs	Casino	www.HarrahsCasino.com
		888	Casino/Peer to Peer Poker	Us.888.com Us.888casino.com Us.888poker.com
		WSOP	Casino/Peer to Peer Poker	www.WSOP.com
Golden Nugget	NYX	Golden Nugget	Casino	www.GoldenNuggetCasino.com nj-casino.goldennuggetcasino.com
	Rush Street	SugarHouse	Casino	www.playsugarhouse.com

	Game Account/Betfair	Game Account/Betfair	Casino	www.betfaircasino.com
Tropicana	GameSys	Tropicana	Casino	www.tropicanacasino.com
		Virgin	Casino	www.virgincasino.com
Resorts Digital Gaming LLC	NYX	Resorts Casino	Casino	www.resortscasino.com
		Mohegan Sun Casino	Casino	www.mohegansuncasino.com
	Poker Stars NJ	Poker Stars NJ	Casino/Peer to Peer Poker	www.pokerstarscasinonj.com

II. Methodology

Operators provided raw data files in a standardized variable format to the Division of Gaming Enforcement (DGE). The DGE provided the data to the Center for Gambling Studies as zipped files on a password protected hard drive. Those files were then transferred to an encrypted and password protected server. Once the raw data files were extracted from compressed format, each text data file (both CSV and DAT formats) were read into SPSS format. The length and data format of all variables were standardized across all files from all casinos. Demographic files, individual bet files, balance files and RG features files were sorted by the unique player identification code (DUPI) and time/data stamp variable. To analyze the data, the individual bet files from all casinos were combined into a single file containing all bets across all casinos by all players. Using SPSS (versions 22 and 23), the data was cleaned again and analyzed for missing or erroneous data, and questionable data was checked with the DGE for verification and/or correction. The resulting file was then matched to demographic, balance and RG features files by the unique player identification code (DUPI) and aggregated using SPSS. Univariate and bivariate statistics were used to analyze daily player betting behavior across all casinos and all games, betting behavior across regions, betting behavior by time of day, and patterns of play of all players and those who opted to utilize responsible gaming features.

III. Player Demographics

In 2016, 32,823 (22.23%) of the 154,622 new 2016 players who signed up for accounts since the start of Internet gaming actually wagered online. Overall, there were 94,021 players with active online accounts this report year. Of those who wagered, data for 16.3% (n=15,313) of the sample had obviously inaccurate age information (i.e. date of birth not submitted to the researchers, corrupted data that was inaccessible etc). In addition, gender information was missing for 30.0% of participants, largely from one provider who does not collect gender information. Accounting for missing data (Table 2), there were 65,817 players in total with both gender and age information for these analyses.

Table 2. Missing Data Summary

Missing Data Summary	Valid Sample	Missing	Total
Gender	65,861	28,610	94,021
Age	78,708	15,313	94,021

A. Age and Gender

Overall, players in New Jersey during the third full year of legal operation were older than those in the second year. Among residents of New Jersey, there were fewer gamblers in the 21 to 24 year age category as well as in the 25 to 34 age group compared to the year before. In contrast, participation by residents older than 35 increased from 2015 to 2016. The trend of an increasing proportion of older players was consistent in the player cohort who lived outside of New Jersey.

By gender, 70.7% of gamblers living in New Jersey in 2016 were men, a statistically significant decrease from 74.9% in 2015. In comparison, rates of online gaming among women living in New Jersey increased from 25.11% in 2015 to 29.3% in 2016. Between 2015 and 2016, there was also a decrease in the total number of male gamblers within and outside of New Jersey. In comparison, the total number of female gamblers increased from the previous year among both residents and nonresidents of New Jersey. (Table 3).

Table 3. Comparing Online Gamblers Living In and Outside New Jersey by Age

Age Group	In NJ 2014		In NJ 2015		In NJ 2016		Outside of NJ 2014		Outside of NJ 2015		Outside of NJ 2016	
	%	N	%	N	%	N	%	N	%	N	%	N
21-24*	12.30	7,811	13.5	9,561	*11.1	6,512	10.29	539	11.4	880	*8.9	631
25-34	35.33	22,211	35.5	25,148	34.6	20,294	39.61	2,075	44.1	3,405	*41.9	2,986
35-44*	22.21	13,986	21.8	15,468	22.9	13,437	23.16	1,212	23.3	1,801	23.4	1,667
45-54*	16.58	10,486	16.2	11,479	17.1	10,054	14.62	766	13.0	1,003	*15.1	1,074
w55-64*	9.21	5,781	8.9	6,326	9.7	5,711	7.84	411	6.1	468	7.4	527
65+*	4.37	2,481	4.1	2,894	4.6	2,689	4.48	235	2.2	171	3.3	235
	100.0		100.0		100.0		100.0		100.0			
Total	62,756		70,876		58,697		5,238		7,728		7,120	
Mean	38.80		38.56		39.02		38.48		36.53		37.57	
SD	12.91		13.06		13.13		12.98		11.36		12.04	

Gender	In NJ 2014		In NJ 2015		In NJ 2016		Outside NJ 2014		Outside NJ 2015		Outside NJ 2016	
	%	N	%	N	%	N	%	N	%	N	%	N
Male*	70.7	44,366	74.9	49,078	70.7	41,533	75.6	3,958	80.9	5,950	76.9	5,473
Female	29.3	18,328	25.1	16,454	29.3	17,164	24.3	1,275	19.1	1,403	23.1	1,647
	100.0		100.0		100.0		100.0		100.0		100.0	
Total	92.3	62,756	89.9	65,532	89.2	58,697	7.7	5,238	10.8	7,353	10.1	7,120

*p< .000

Players are allowed to register for multiple accounts across different sites. Table 4 shows the frequency and percentage of online gamblers who held single versus multiple accounts across platforms in 2016.

Table 4. Number of Sites Bet on by Account Holder and Percent in 2016

Number of sites bet	Number of account holders	Percent
1	38,498	58.5
2	13,128	19.9
3	7,134	10.8
4	3,583	5.4

5	1,920	2.9
6	842	1.3
7	501	0.8
8	205	0.3
9	6	0.0

Across the three years of operation, the percentage of players who played on a single betting site decreased from 68% to 58%. In contrast, the proportion of players who placed bets on between two and five sites has increased, while those playing on six or more sites decreased. (Table 5)

Table 5. Percentage Comparisons of Number of Sites by Year*

Number of sites bet	2014 Percentage	2015 Percentage	2016 Percentage
1	68.71	71.9	58.5
2	18.97	14.2	19.9
3	6.02	5.5	10.8
4	2.91	3.1	5.4
5	1.88	2.1	2.9
6	1.37	1.4	1.3
7	0.14	1.0	0.8
8		0.7	0.3
9			0.0

*Significance levels not calculated due to changes in the number of operators across years.

Gamblers at the end of the age spectrum were the least likely to report gambling online (see Table 6). This trend was also consistent by gender, with the highest proportion of both men and women gamblers belonging to the 25 to 34 and 35 to 44 age groups, respectively. Men were significantly overrepresented among younger age groups, while women were proportionately overrepresented in the 45 to 54 age group and older. For example, among 21 to 24-year-olds, 11.4% of men versus 9.6% of women gambled online. That proportion increased among 25 to 34-year-olds, with 38% of men and 28.7% of women gambling online. However, women were overrepresented, compared to men, among players ages 45 to 54 (21.1% v 15.2%), 55 to 64 (12.7% v 8.2%), and over 65 (5.6% v 4%).

Table 6. Age Category by Total and Gender of all Online Players (N=65,817)

Age Group	%/n by Age Category		Gender			
	%	N	Male		Female	
			%	n	%	n
21-24	10.9	7,143	*11.4	5,337	9.6	1,806
25-34	35.4	23,280	*38.0	17,875	28.7	5,405
35-44	22.9	15,104	*23.2	10,915	22.3	4,189
45-54	16.9	11,128	15.2	7,165	*21.1	3,963
55-64	9.5	6,238	8.2	3,841	*12.7	2,397
65+	4.4	2,924	4.0	1,873	*5.6	1,051
Total	100.0	65,817	100.0	47,006	100.0	18,811

*$p < .000$

Internet gaming has seen an increase in the proportion of older players. The mean age of all gamblers in 2016 was 38.86, an increase over the 2015 mean age of 38.36. In all three years of data, the majority of players were in the 25 to 34 year age group, followed by 35 to 44 and 45 to 54. The overall proportion of male players has decreased from 76.78% to 71.42% of the total player cohort, with a corresponding increase in the proportion of female players. (Table 7)

Table 7: Age Category and Gender by Year

Age Group	2014 (%)	2014 (n)	2015 (%)	2015 (n)	2016 (%)	2016 (n)
21-24*	12.23	11,529	13.13	9,570	10.85	7,143
25-34*	37.67	35,503	36.75	26,785	35.37	23,280
35-44*	22.68	21,378	21.96	16,003	22.95	15,104
45-54	15.50	14,608	15.64	11,399	16.91	11,128
55-64	8.27	7,796	8.62	6,284	9.48	6,238
65+	3.65	3,441	3.90	2,844	4.44	2,924
Total		94,255		72,885		65,817
Ave. Age		38.78		38.36		38.86
Gender						
Male	76.78	72,366	75.5	55,028	71.42	47,006
Female	23.22	21,889	24.5	17,857	28.58	18,811

*p≤ .000

By gender, a total of 47,006 men (71.4%) and 18,811 women (28.6%) gambled online on casino games, poker, and/or in poker tournaments in New Jersey in 2016 (Table 8). Gender disparities were significantly less pronounced among casino-only gamblers, where 59% (n=23,147) were men and 41% (n=16,068) were women. All other play types and play combinations were dominated by men.

Nearly half of men (49.2%) gambled only on casino games, an increase of more than 11 percentage points over 2015. The proportion of female casino-only gamblers also increased by more than 7 percentage points over the prior year, from 77.98% to 85.4%. In 2016, the proportion of men who only played poker fell from 15.89% to 5.6%, although the percentage of those playing both poker and in poker tournaments increased from 12.8% to 17.8%. 22.6% of men but only 8.5% of women gambled across all types of platforms: casino, poker and poker tournaments. Overall, men were more likely to play across all game types, whereas women were decidedly casino only players.

Table 8. Gender Comparison Across and Within Play Types (N=65,817)

Gender	Gender Across Play Type													
	All types		Casino only		Poker Only		Tournament Only		Casino & Poker		Poker & Tournament		Casino & Tournament	
	%	N	%	n	%	n	%	n	%	n	%	n	%	n
Male	22.6	10,628	49.2	23,147	5.6	2,653	0.5	213	3.6	1,703	17.8	8,358	0.6	304
Female	8.5	1,605	85.4	16,068	0.9	166	0.1	18	1.6	298	3.3	615	0.2	41
	Gender Within Play Type												Casino & Tournament	

Gender	All types		Casino only		Poker Only		Tournament Only		Casino & Poker		Poker & Tournament			
	%	N	%	N	%	n	%	n	%	n	%	n	%	n
Male	*86.9	10,628	59.0	23,147	*94.1	2,653	*92.2	213	*85.1	1,703	*93.1	8,358	*88.1	304
Female	13.1	1,605	*41.0	16,068	5.9.	166	7.8	18	14.9	298	6.9	615	11.9	41

* *p*< .001

There are significant differences across age and activity types (Table 9). A higher proportion of gamblers in the 25 to 34 age group, compared to other ages, participated in all forms of gambling online. In addition, younger players in this age category were also overrepresented among players who played only poker, only tournament games, casino & poker, and poker & tournament. In contrast, gamblers who were ages 21 to 24 had the highest proportion of players who only played casino games.

Table 9. Age Groups by Play Type (N=65,817)

Age Group	Play Type													
	All types		Casino only		Poker Only		Tournament Only		Casino & Poker		Poker & Tournament		Casino & Tournament	
	%	N	%	n	%	n	%	n	%	n	%	n	%	n
21-24	1.8	1,164	7.2	4,728	0.4	275	0.0	21	0.4	241	1.0	671	0.1	43
25-34	*7.8	5,119	*18.6	12,240	*1.9	1,260	*0.2	105	*1.3	852	*5.4	3,560	0.2	144
35-44	4.1	2,708	13.7	9,039	1.0	672	0.1	50	0.7	442	3.2	2,120	0.1	73
45-54	2.7	1,768	*11.0	7,227	*0.5	341	0.1	35	*0.4	246	2.2	1,461	0.1	50
55-64	1.5	994	6.3	4,120	*0.3	178	*0.0	14	0.2	152	1.2	759	0.0	21
65+	0.7	480	2.8	1,861	*0.1	93	0.0	6	0.1	68	0.6	402	0.0	14
Total	18.6	12,233	59.6	39,215	4.3	2,819	0.4	231	3.0	2,001	13.6	8,973	0.5	345

**p*< .001

In 2016, the proportion of men playing all three types of games – casino, poker, and tournament – increased from the previous year (Table 10). The same trend was present among female players. The proportion of men who played only casino games increased significantly in the span of 3 years to slightly under 50%. More men played a combination of poker and tournament as compared to 2015. All other categories of play saw a decrease in the proportion of participation by men from the previous year.

A significant proportion of women exclusively play casino games (85.4%), a notable increase from the 2014 and 2015 data. In 2016, more women gambled on all three activities as well as a combination of poker and tournaments compared to the year before.

Table 10. Gender Comparison by Play Type between 2014, 2015 & 2016

Males	All types		Casino only		Poker Only		Tournament Only		Casino & Poker		Poker& Tournament		Casino& Tournament	
	%	N	%	n	%	n	%	n	%	n	%	n	%	n
2014	25.90	18,746	33.46	24,214	8.83	6,387	5.31	3,842	4.15	3,006	19.09	13,812	3.26	2,359
2015	17.60	9,685	37.79	20,795	*15.89	8,742	3.37	1,857	*10.29	5,662	12.80	7,041	2.26	1,246
2016	*22.6	10,628	*49.2	23,147	5.6	2,653	*0.5	213	3.6	1,703	*17.8	8,358	*0.6	304
Females	**All types**		**Casino only**		**Poker Only**		**Tournament Only**		**Casino & Poker**		**Poker& Tournament**		**Casino& Tournament**	
	%	N	%	n	%	n	%	n	%	n	%	n	%	N
2014	*10.73	2,349	73.60	16,111	2.66	582	*2.24	490	2.46	538	*5.55	1,214	2.76	605
2015	7.48	1,335	77.98	13,925	*4.04	721	1.11	198	*4.23	756	2.97	531	2.19	391
2016	8.5	1,605	*85.4	16,068	0.9	166	0.1	18	1.6	298	3.3	615	*0.2	41

**p*< .001

Similar to findings by gender, a greater proportion of players in every age category except 21 to 24-year-olds gambled across all three activities in 2016, compared to 2015 (Table 11). Each age group reported increases in the overall number of gamblers playing only casino games. In addition, there were overall decreases in the number of players playing only poker games, only tournaments, combination of casino and poker games, and a combination of casino and tournament games. With the exception of the 21 to 24 age cohort, a greater proportion of players in each age group played a combination of poker and tournaments. The biggest decreases in overall participation were reported among players age 45 and up on poker and tournament play.

Table 11. Age Comparison by Play Type between 2014, 2015 & 2016

Age Group	Year	Play Type: All types		Casino only		Poker Only		Tournament Only		Casino & Poker		Poker & Tournament		Casino & Tournament	
		%	N	%	n	%	N	%	n	%	n	%	n	%	n
21-24	2014	*2.96	2,790	4.93	4,656	1.10	1,036	0.49	459	0.57	535	1.80	1,696	0.39	369
	2015	2.16	1,571	5.72	4,166	*2.02	1,471	0.27	190	*1.60	1,168	1.14	831	0.24	173
	2016	1.77	1,164	*7.18	4,728	0.42	275	*0.03	21	0.37	241	1.02	671	0.06	*43
25-34	2014	*9.51	8,793	13.51	12,749	3.32	3,133	1.88	1,771	1.59	1,498	6.71	6,333	1.13	1,067
	2015	6.33	4,615	14.98	10,922	*5.55	4,044	1.08	785	*3.79	2,760	4.27	3,112	0.74	547
	2016	7.78	5,119	*18.60	12,240	1.91	1,260	*0.16	105	1.29	852	5.41	3,560	0.22	*144
35-44	2014	4.88	4,608	9.66	9,116	1.74	1,645	1.11	1,050	0.82	778	3.72	3,511	0.74	696
	2015	3.06	2,231	10.78	7,860	*2.78	2,025	0.70	516	*1.70	1,237	2.38	1,735	0.55	399
	2016	4.11	2,708	*13.73	9,039	1.02	672	*0.08	50	0.67	442	3.22	2,120	0.11	*73
45-54	2014	2.89	2,726	8.09	7,635	0.77	729	0.64	602	0.44	416	2.16	2,042	0.50	475

	2015	1.96	1,431	8.78	6,396	*1.54	1,124	0.44	322	*0.98	715	1.53	1,113	0.41	298
	2016	2.69	1,768	*10.98	7,227	0.52	341	*0.05	35	0.37	246	2.22	1,461	0.08	*50
55-64	2014	1.49	1,409	4.58	4,325	0.31	290	0.33	312	0.23	214	1.08	1,016	0.26	244
	2015	1.08	783	5.15	3,753	*0.73	532	0.21	155	*0.53	388	0.72	526	0.20	147
	2016	1.51	994	*6.26	4,120	0.27	178	*0.02	14	0.23	152	1.15	759	0.03	*21
65+	2014	0.64	607	2.00	1,890	0.15	142	0.15	146	0.11	105	0.47	445	0.12	114
	2015	0.53	389	2.23	1,623	*0.36	267	0.12	87	*0.21	150	0.35	255	0.10	73
	2016	0.73	480	*2.83	1,861	0.14	93	0.01	6	0.10	68	*0.61	402	0.02	*14
Total	2014	22.38	21,113	42.79	40,371	7.39	6,975	4.60	4,340	3.76	3,546	15.94	15,403	3.14	2,965
	2015	15.12	11,020	47.64	34,720	12.98	9,463	2.82	2,055	8.81	6,418	10.39	7,572	2.24	1,637
	2016	*18.59*	*12,233*	*59.58*	*39,215*	*4.28*	*2,819*	*0.35*	*231*	*3.04*	*2,001*	*13.63*	*8,973*	*0.52*	**345*

***$p < .001$**

B. Regional Differences

The Gateway region encompasses nearly half of the state population (48.5%) but only 40.2% of online gamblers in 2016. (Table 12 and Figure 1) Similarly, the Skyland region had a lower online gambling participation rate (10.6%) when accounting for its share of the total population (13.4%). All other counties had greater than expected numbers of online gamblers; the Greater Atlantic City region's share of the state's online gamblers (6.5%) was more than double its share of the population (3.0%).

Compared to last year, there were slight increases in the percentage of online gamblers located in the Greater Atlantic city area (6.5% v 5.2%), Delaware River (20.3% v 18.7%), and Southern Shore (3.7% v 3.0%); the Gateway region saw the largest percentage decrease in the proportion of gambling players, from 43% in 2015 to 40.2% in 2016 (Table 12).

Table 12. Region and Population Density (N=56,977*)

Region	Percentage of total NJ population*	Percentage of Online Gamblers 2014	Percentage of Online Gamblers 2015	Percentage of Online Gamblers 2016
Greater Atlantic City	3.0%	4.8%	5.2%	*6.5
Delaware River	18.8%	18.6%	18.7%	*20.3
Gateway	48.5%	42.9%	43.0%	40.2
Shore	13.6%	18.6%	18.4%	18.8
Skyland	13.4%	12.2%	11.7%	10.6
Southern Shore	2.7%	2.9%	3.0%	3.7
Total	100.0%	100.0%	100.0%	100.0%

*8,840 of the finalized sample did not include useable zip code data and were removed for this analysis.

By county, Ocean, Bergen, and Monmouth counties had the largest number of players, while Hunterdon and Salem reported the least. (Table 13). Comparing participation rates to the overall population of individual counties, however, identified Atlantic, Burlington, Camden, Cape May, Monmouth, and Ocean counties with the highest per capita rates.

Figure 1. Percentage of Online Gamblers by Region

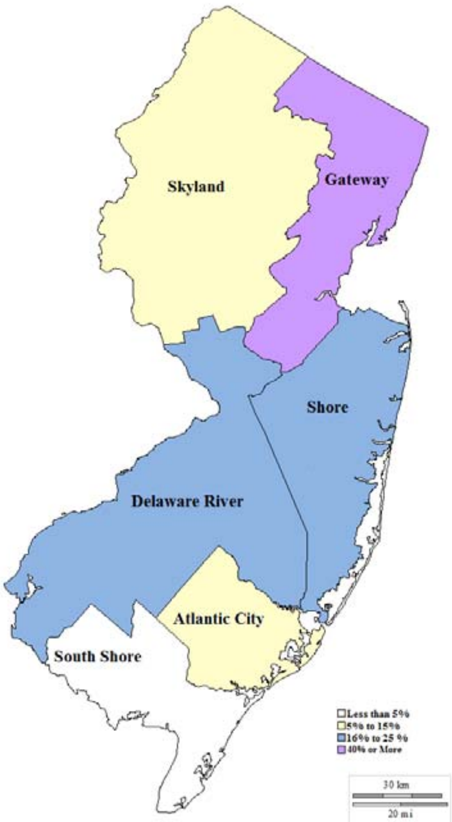

Table 13. Number of Gamblers by County

County	N	%	% of NJ Pop.
Atlantic	3,768	*6.6	3.0
Bergen	5,338	9.4	10.5
Burlington	3,134	*5.5	5.0
Camden	4,070	*7.1	5.7
Cape May	988	*1.7	1.0
Cumberland	1,113	2.0	1.7
Essex	3,474	6.1	9.0
Gloucester	2,279	4.0	3.2
Hudson	3,801	6.7	7.7
Hunterdon	558	1.0	1.4
Mercer	1,760	3.1	4.2
Middlesex	4,972	8.7	9.4
Monmouth	5,289	*9.3	7.0
Morris	2,566	4.5	5.5
Ocean	5,404	*9.5	6.6
Passaic	2,613	4.6	5.7
Salem	346	0.6	0.7
Somerset	1,560	2.7	3.7
Sussex	779	1.4	1.6
Union	2,687	4.7	6.2
Warren	568	1.0	1.2

IV. Time of Day

Each year, we assess playing behavior by time of day to identify play patterns and trends over time. Going forward, we plan to analyze those trends by modality (mobile phone, computer etc.) as well as by duration and intensity across time intervals.

Total wagers across all time categories were significantly higher this year, compared to 2014 and 2015. There were significant increases in number of bets as well as the maximum wager amounts across all time periods compared to last year. However, increases in the average (mean) wager were greatest between 9 a.m. and midnight versus overnight hours.

Table 14 summarizes the wagers on casino games across time periods in 2016. The mean wagers among those playing casino games were largest between 3 a.m. and 6 a.m. ($4.05 per bet), followed by 6 a.m. to 9 a.m. ($3.65 per bet) and midnight to 3 a.m. ($3.62 per bet). This outcome varies slightly from the results of the last report, which found that the highest mean wagers were placed between 3 a.m. to 6 a.m., followed by midnight to 3 a.m., and may underscore the need to analyze persistence in play without time-out breaks during those hours to determine if individuals are playing longer in overnight hours compared to other time periods.

There was a significant decrease over the past year in the percentage of bets placed from 6 p.m. to 9 p.m. and significant increases in the proportion of bets placed between midnight to 6 a.m. Overall, players bet the most from 9 p.m. to midnight (217.16 million bets) followed by 6 p.m. to 9 p.m. (182.74 million bets). In 2016, online casino gamblers wagered the most money between 9 p.m. and midnight ($680.4 million) accounting for 20.5% of all bets, followed by midnight to 3 a.m. ($588.97 million) and 6 p.m. to 9 p.m. ($549.43 million).

Last year's report noted a shift in play from gambling outside traditional work hours to wagering during the working day. In 2015, 34.5% of all bets were placed between the hours of 9 a.m. and 6 p.m. In 2016, however, the percentage decreased to 32.3%, although the proportion of bets made between midnight and 6 a.m. increased from 18.6% to 23.7%.

Table 14. Casino Wagers by Time Category (N=1,059,513,520)

Time Category	# of Bets (mill.)	Percent of Bets	Max Wager amount	Mean Wager	Std. of Wager	Sum Wager
6 a.m.–9 a.m.	67.07	6.3	19,240.00	3.65	22.66	244,850,916.60
9 a.m.-12 p.m.	88.49	8.4	24,540.00	3.34	24.23	295,652,131.00
12 p.m.-3 p.m.	115.35	10.9	20,680.00	3.42	25.28	394,684,510.00
3 p.m.-6 p.m.	137.86	13.0	21,680.00	3.27	20.49	451,086,521.80
6 p.m.-9 p.m.	182.74	*17.2	28,840.00	3.01	17.95	549,438,603.50
9 p.m.-12 a.m.	217.16	20.5	28,920.00	3.13	18.94	680,402,936.90
12 a.m.-3 a.m.	162.67	*15.4	19,935.00	3.62	19.90	588,970,076.60
3 a.m.-6 a.m.	88.16	*8.3	29,860.00	4.05	22.57	357,334,407.80

*$p < .000$

By gender, men placed a slightly higher proportion of bets during regular work hours (9 a.m. to 6 p.m.) compared to women (32.9% v 31.6%) (Table 15). Similar to 2015 outcomes, a fifth of both male (20.1%) and female (20.8%) bets were placed between 9 p.m. and 12 a.m., followed by the 6 p.m. to 9 p.m. time slot (17.1% of men, 17.4% of women). Unlike in the prior report, however, the third most popular time for play was 12 a.m to 3 a.m (15.4% of male bets, 15.3% of female bets), underscoring a shift this year to late night/early morning play. The least popular time to gamble on online casino games was 6 a.m. to 9 a.m. with the bets placed in this time slot accounting for only 6.3% of all bets placed.

About one-third of all bets, 341.7 million, were placed during traditional work hours, between 9 a.m. and 6 p.m., with more bets placed by women (178.1 million) than men (163.6 million). Men were less likely this year to gamble between 9 a.m. and 3 p.m. and more likely to gamble between 12 a.m. and 3 a.m. compared to the previous year. Among women, betting dropped significantly this year between the hours between 12 p.m. and 12 a.m. and increased significantly during the overnight hours of 12 a.m. to 6 a.m.

Table 15. Number and Proportion of Bets by Gender and Time of Day

Time Category	Male			Female			Total		
	# of Bets (mill.)	% of total	Mean Wager	# of Bets (mill)	% of total	Mean Wager	# of Bets (mill.)	% of total	Mean Wager
6 a.m.–9 a.m.*	31.77	**6.4**	4.99	35.31	**6.3**	2.45	67.07	**6.3**	3.65
9a.m.-12p.m.*	42.75	**8.6**	4.48	45.74	**8.1**	2.27	88.49	**8.4**	3.34
12p.m.-3p.m.*	54.55	**11.0**	4.66	60.80	**10.8**	2.31	115.35	**10.9**	3.42
3 p.m.-6 p.m.*	66.30	**13.3**	4.34	71.56	**12.7**	2.28	137.86	**13.0**	3.27
6 p.m.-9 p.m.*	85.15	**17.1**	4.02	97.59	**17.4**	2.13	182.74	**17.2**	3.01
9p.m.-12.am.*	99.92	**20.1**	4.27	117.24	**20.8**	2.16	217.16	**20.5**	3.13
12 a.m.-3 a.m. *	76.48	**15.4**	4.89	86.19	**15.3**	2.50	162.67	**15.4**	3.62
3 a.m.-6 a.m.*	40.15	**8.1**	5.46	48.01	**8.5**	2.88	88.16	**8.3**	4.05
Total	497.07	**100.0**	4.53	562.24	**100.0**	2.33	1059.5	**100.0**	3.36

*$p < .000$

By age, players in the 45 to 54 age group placed the highest number of total bets (297.92 million)– significantly more than the next highest betting group of 35 to 44-year-olds (221.73 million). (Table 16) A majority of players irrespective of age bet in what continues to be the most popular betting period – between 9 p.m. and 12 a.m. – except for adults over 65, who were more likely to gamble between 6 p.m. and 9 p.m. In addition, the oldest group of players were most likely to gamble in the earlier time periods, from 9 a.m. to 6 p.m., compared to other age categories.

Players in the youngest group, 21 to 24, placed the highest percentage of bets in the 12 a.m. to 3 a.m. and 3 a.m. to 6 a.m. time slots. Compared to the previous year, the youngest players were significantly more likely than others to gamble during the overnight hours. For example, players ages 21 to 24 were less likely than last year to bet between 9 a.m. and 9 p.m. and more likely to bet between 9 p.m. and 9 a.m. Similarly, players aged 25 to 34 years placed more bets between 9 p.m. and 6 a.m. and 9 a.m. to 3 p.m. than they did in the prior year, suggesting they were gambling both overnight and during normal working hours. Similarly, 45 to 54-year-olds, who consistently placed the highest number of bets in both years, tended to gamble more during the day/evening hours (9 a.m. to 9 p.m.) and less later in the evening or overnight (9 p.m. to 6 a.m.). There was a significant increase in 2016 in the number of bets placed between 9 pm and 12 a.m. among 55 to 64-year-olds, compared to the prior year.

Table 16. Number and Proportion of Bets by Time of Day and Age Category

Time Cat.	21-24		25-34		35-44		45-54		55-64		65+	
	# of Bets (mill.)	% of total	# of Bets (mill.)	% of total	# of Bets (mill.)	% of total	# of Bets (mill.)	% of total	# of Bets (mill.)	% of total	# of Bets (mill.)	% of total
6 a.m.–9 a m.	1.17	**6.3**	7.80	**5.7**	14.48	**6.5**	19.92	**6.7**	12.42	**5.9**	6.08	**6.4**
9 a.m.-12p.m.	1.60	**8.6**	11.48	**8.3**	18.99	**8.6**	25.41	**8.5**	17.55	**8.3**	9.89	***10.4**
12 p.m-3 p.m.	2.08	**11.3**	15.97	**11.6**	23.99	**10.8**	31.29	**10.5**	22.39	**10.6**	12.88	***13.5**
3 p.m.-6 p.m.	2.42	**13.1**	18.72	**13.6**	27.59	**12.4**	37.49	**12.6**	27.75	**13.2**	15.29	***16.0**
6 p.m.-9 p.m.	3.03	**16.4**	23.35	**17.0**	36.13	**16.3**	52.13	**17.5**	39.65	**18.8**	18.44	**19.3**
9 p.m.-12 a.m.	3.57	**19.3**	27.82	**20.2**	45.57	**20.6**	63.32	**21.3**	46.57	**22.1**	17.56	**18.4**
12 a.m.-3 a.m.	3.04	**16.4**	21.64	**15.7**	35.55	**16.0**	45.43	**15.2**	29.85	**14.2**	10.08	***10.6**
3 a.m.-6 a.m.	1.59	**8.6**	10.97	**8.0**	19.41	**8.8**	22.92	**7.7**	14.43	**6.9**	5.24	***5.5**
Total	18.51	**100.0**	137.75	**100.0**	221.73	**100.0**	297.92	**100.0**	210.61	**100.0**	95.46	**100.0**

**p*< .000

Regionally, online gamblers in the Greater Atlantic City area placed the highest proportion of bets in the overnight/early morning hours in comparison to the other regions: from 3 a.m. to 6 a.m. (9.1%), 6 a.m. to 9 a.m. (7.7%), and 12 p.m. to 3 p.m. (11.7%). They also reported the lowest percentages of online gambling during "traditional" gambling hours of 9 p.m. to 12 a.m. (17.9%). From 6 p.m. to 9 p.m., the highest proportion of player bets came from the Shore region (18.1%). Players in the Skyland region were the most likely to gamble from 9 p.m. to 12 a.m. while the Gateway region players placed significantly more bets from 12 a.m. to 3 a.m.

Table 17. Number and Proportion of Bets by Time of Day and Region

Time Cat.	Greater Atlantic City		Delaware River		Gateway		Shore		Skyland		Southern Shore	
	# of Bets (mill.)	% of total	# of Bets (mill.)	% of total	# of Bets (mill.)	% of total	# of Bets (mill.)	% of total	# of Bets (mill.)	% of total	# of Bets (mill.)	% of total
6 a.m.–9 a.m.	3.61	***7.7**	12.68	**6.4**	24.90	**6.0**	14.76	**6.7**	6.68	**6.1**	2.10	**6.1**
9 a.m.-12 p.m.	4.31	**9.2**	16.09	**8.1**	32.42	**7.8**	20.97	**9.5**	8.72	**8.0**	2.84	**8.3**
12 p.m.-3 p.m.	5.48	**11.7**	21.24	**10.8**	43.72	**10.5**	25.22	**11.5**	11.91	**10.9**	3.72	**10.9**
3 p.m.-6 p.m.	6.26	**13.3**	25.32	**12.8**	53.37	**12.8**	28.76	**13.1**	14.59	**13.3**	4.70	**13.8**
6 p.m.-9 p.m.	7.82	**16.7**	34.12	**17.3**	70.10	**16.8**	39.72	**18.1**	19.21	**17.5**	6.05	**17.7**
9 p.m.-12 a.m.	8.40	***17.9**	40.03	**20.3**	87.0	**20.9**	45.16	**20.5**	23.19	**21.2**	6.84	**20.0**

12 a.m.-3 a.m.	6.77	**14.4**	31.00	**15.7**	67.85	***16.3**	30.45	**13.9**	16.20	**14.8**	5.18	**15.1**
3 a.m.-6 a.m.	4.29	**9.1**	17.0	**8.6**	37.13	**8.9**	14.81	***6.7**	8.98	**8.2**	2.77	**8.1**
Total	46.94	**100.0**	197.49	**100.0**	416.49	**100.0**	219.83	**100.0**	109.48	**100.0**	34.20	**100.0**

*$p < .000$

This year, we sought to explore casino wagers across time periods (see Table 18). In all but one time category (12 a.m.to 3 a.m.), players aged 45 to 64 had the highest maximum wager placed among all age groups (Table 16). In addition, players ages 21 to 24 placed the least number of total bets when compared to older players. However, the youngest players also had the highest average bet totals at all times except between 9 a.m. to 3 p.m., when slightly older players (25 to 34) bet the most on average. Among the youngest players, average bets were highest between 3 a.m. and 6 a.m. (mean=$6.81). The median values across groups were similar, with the lowest (21 to 24) and highest 65+ age groups placing smaller bets in time slots before 6 p.m., after which time the youngest group recorded higher median bets. The median bets of the oldest gamblers (65+) were consistently the lowest in each time period; they also placed the smallest average bets across all times overall.

Table 18. Casino wagers by Time category and Age

Time frame	Age category	Maximum	Mean ($)	Std. Dev. ($)	Median ($)
6 a.m. to 9 a.m.	21-24	3,000	*6.30	35.21	0.90
	25-34	7,317	5.58	32.13	1.00
	35-44	5,500	4.22	25.68	1.00
	45-54	19,240	3.21	20.98	1.00
	55-64	2,500	2.44	11.63	1.00
	65+	4,000	2.56	15.27	0.75
9 a.m. to 12 p.m.	21-24	4,000	4.96	30.61	0.75
	25-34	6,400	*5.02	29.39	1.00
	35-44	8,000	4.14	36.12	1.00
	45-54	24,540	2.99	21.52	1.00
	55-64	3,982	2.38	11.30	0.99
	65+	3,000	2.04	9.28	0.80
12 p.m. to 3 p.m.	21-24	5,200	5.16	32.79	0.90
	25-34	9,200	*5.45	36.04	1.00
	35-44	10,000	4.16	36.28	1.00
	45-54	20,680	2.95	18.77	1.00
	55-64	5,600	2.42	13.41	0.99
	65+	3,500	2.06	11.20	0.80
3 p.m. to 6 p.m.	21-24	5,000	*5.66	33.50	0.90
	25-34	8,000	5.18	30.50	1.00
	35-44	8,500	3.84	25.75	1.00
	45-54	21,680	2.80	16.53	1.00
	55-64	6,000	2.37	11.61	0.99
	65+	5,000	2.04	12.28	0.80
6 p.m. to 9 p.m.	21-24	3,500	*6.03	32.84	1.00
	25-34	16,000	4.89	30.12	1.00
	35-44	7,000	3.33	17.00	1.00

	45-54	28,840	2.59	17.06	1.00
	55-64	5,300	2.17	9.71	0.80
	65+	3,500	2.12	10.15	0.75
9 p.m. to 12 a.m.	21-24	5,000	*5.72	42.51	1.00
	25-34	6,825	5.01	32.23	1.00
	35-44	4,615	3.50	16.46	1.00
	45-54	28,920	2.71	16.89	1.00
	55-64	3,300	2.23	10.16	0.90
	65+	4,500	2.41	15.12	0.80
12 a.m. to 3 a.m.	21-24	6,000	*6.03	47.06	1.00
	25-34	19,935	5.49	40.00	1.00
	35-44	4,175	4.23	20.05	1.00
	45-54	19,300	3.14	16.45	1.00
	55-64	6,400	2.71	13.94	1.00
	65+	1,200	2.43	8.87	1.00
3 a.m. to 6 a.m.	21-24	4,500	*6.81	54.44	1.00
	25-34	12,000	6.39	34.80	1.00
	35-44	4,000	4.30	18.26	1.00
	45-54	29,860	3.73	20.49	1.00
	55-64	8,000	3.09	19.65	1.00
	65+	2,500	2.81	11.33	1.00

*$p < .0001$

These findings are significant when considered in the context of the overall proportion of online gamblers in each age group. Since a majority of betters are in the 25 to 54 age group, and those ages 21 to 24 represent under 11% of the total sample, the size of their betting relative to other age groups across most time periods is significant. Throughout most time periods, a proportion of younger players – significant enough to skew the mean – are placing a high number of bets relative to other younger players and other players in general. These findings bear further study, particularly in light of the legalization of sports betting, which traditionally appeals to younger players.

V. The Top 10%

Players whose gambling behavior placed them in the 10% of all online gamblers with respect to gambling frequency and intensity are characterized as the "Top 10%" in these analyses. Players were included in the analyses if their total number of yearly bets placed, total number of betting days, and total amount bet over the year all placed in the top 10% of all gamblers. This criteria was designed to exclude players who only placed in the high category on one two of the three criteria and to isolate those who were highest with regard to both frequency and intensity of wagering.

This year 3,548 gamblers placed the highest in total number of bets, played the most days, and wagered the most in total. In the overall sample, men outnumbered women more than 2 to 1 (i.e. 71% male v 29% female). However, among the Top 10%, women slightly outnumbered men (51% v 49%), though the percentage has dropped significantly over the past three years. As indicated in Table 19, the mean age for men in this group has remained around 47 years and, for women, around 49 years, despite minor fluctuations.

Table 19. Top 10% of Casino Gamblers by Gender

Gender	%	N	Age			
			Minimum	Maximum	Mean	Standard Deviation
Males 2016	49.3	1,750	21.00	88.00	47.60	12.19
Males 2015	48.2	1,330	21.01	89.34	46.89	12.17
Males 2014	46.6	1,253	21.00	86.00	47.91	12.36
Females 2016	*50.7	1,798	21.00	90.00	48.86	11.67
Females 2015	51.8	1,427	21.03	82.83	49.35	11.47

*$p < .001$

New Jersey residents in the Top 10% were generally represented proportionately across the regions. There was an under-representation of players in the Top 10% in the Gateway region (40.7% of Top 10% vs 48.5% of state's population) and significant over-representation in the Shore region (22.2% of Top 10% vs 13.6% of state's population). Compared to 2015 data, the Delaware River region has increased its proportion of Top 10% players from 16.37% to 18.9%, whereas the Gateway region saw the biggest drop from 43.25% to 40.7%.

A majority of the Top 10% players played only casino games rather than poker and/or tournament games (Table 20). In 2016, more than 75% of this group were casino-only players, compared to about 59% of all gamblers. However, the Top 10% were also more likely than other gamblers to participate in all three forms of online gambling activities (20.6%) when compared to the overall sample (19.5%); they were also more likely to play both casino games and tournament poker (0.6%) when compared to other gamblers (0.5%). Overall, participation in poker and poker tournaments by Top 10% players has declined from 2014 through 2016, in favor of casino games.

Table 20. Top 10% by Game Types

Type	2014		2015		2016	
	%	N	%	N	%	N
Casino only	69.3	2,050	70.2	2,055	76.0*	2696
Casino & Poker	4.8	141	5.9	173	2.8*	100
Casino & Tournament Poker	5.3	156	5.7	166	0.6*	21
All Types	20.7	612	18.2	531	20.6*	731

*$p < .000$

Similar to prior years, gamblers in this group wagered on an average of four sites, in contrast to the average gambler who wagered on just under two sites (Table 21). However, the average number of sites wagered has steadily increased, from 3.06 in 2014 to 3.93 in 2015 and 4.22 in 2016. Play across multiple sites could account for the disparity between the average single wager ($4.18) and average total yearly wager of $611,806.03, which marks a significant increase in expenditures over both 2014 ($499.219.85) and 2015 ($521,776.87). These average expenditures are skewed by a group of players with extremely high expenditures, such as one gambler who wagered more than $31 million during the year in contrast to the median gambler in the Top 10%, who bet more than $263,000.

Players in this group gambled for a mean of 230 betting days – nearly two thirds of the year – though some gamblers gambled every day. This finding is significantly higher than reports from 2014 and 2015, where players in this group wagered an average of 158 and 206 days, respectively. The median number of betting days was likewise higher this report year, increasing from 198 in 2015 to 226 in 2016; median was not calculated in 2014. The highest amount bet by the Top 10% in one day was $29,860, an increase from the previous year's high of $20,900. These players also placed an average of 202,518 bets per year or 554 per day, in contrast to the average player, who placed about 18 bets per day. These findings suggest that a proportion of players are gambling daily, placing a large number of bets, and/or betting high dollar amounts across multiple sites. We are currently seeking to isolate those patterns and differentiate among betters who differ in frequency and size of bets, wagering across sites, and escalating betting patterns and amounts in response to losses.

The Top 10% of players in 2016 bet significantly more frequently (230 days versus 206 days) and wagered significantly more in one wager ($229 versus $181) (see Table 21). As one might expect, there were significant differences across all variables when comparing the Top 10% to all other casino betters in 2016. Whereas Top 10% betters bet on an average of four sites, other casino betters bet on slightly less than two (median = 1.00).

In 2016, about 90% of online gamblers bet an average of 21 days a year, with a median of only 4 days. But the Top 10% averaged 230 betting days, with the median player still betting 226 days. Similarly the Top 10% bet 24 times ($611,806 v $27,698) the amount per year of the average player, though there was a smaller margin between the maximum wager of most players (nearly $20,000) and the Top 10% ($30,000). There were also significant differences in the total number of yearly bets, with the Top 10% group placing nearly 30 times as many bets as the rest of the casino gamblers (202,518 versus 6,786) on average.

Table 21. Play Patterns of Top 10 Percent Gamblers compared to all others (Casino bets only)

Play Patterns	N	Variable	Maximum	Mean	Std Dev	Median
Top 10% 2014	2,959	# of Sites Wagered	6.00	3.06	1.54	Not reported
		Total Betting Days	364.00	158.07	77.99	In 2014
		Max wager ($)	36,750.00	180.99	939.94	
		Avg. single wager ($)	322.62	3.96	12.52	
		Total Yearly wager ($)	78,756,599.90	499,219.85	1,946,473.26	
		Total Number of Yearly Bets	1,464,282.00	160,658.23	128,989.65	
Top 10% 2015	2,925	# of Sites Wagered	8.00	3.93	2.22	4.00
		Total Betting Days	365.00	206.09	72.19	198.00
		Max wager ($)	20,900.00	228.86	706.46	56.00

		Avg. single wager ($)	274.12	3.87	11.36	1.58
		Total Yearly wager ($)	20,403,084.42	521,776.87	1,034,933.05	244,328.97
		Total Number of Yearly Bets	1,016,555.00	183,353.24	136,946.69	142,921.50
Top 10% 2016	3,548	# of Sites Wagered	10.0	4.22	2.50	4.00
		Total Betting Days	366.00	230.45	71.21	226.00
		Max wager ($)	29,860.00	195.00	728.65	50.00
		Avg. single Wager ($)	308.36	4.18	11.50	1.68
		Total Yearly wager ($)	31,032,290.91	*611,806.03	1,440,431.25	263,220.93
		Total Number of Yearly Bets	1,482,919.00	*202,518.84	154,437.15	159,407.00
All other Casino betters 2016	50,246	# of Sites Wagered	10.0	1.73	1.43	1.00
		Total Betting Days	362.00	20.77	40.23	4.00
		Max wager ($)	19,935.00	64.67	283.82	10.00
		Avg. single wager ($)	1,866.29	6.30	23.67	1.39
		Total Yearly wager ($)	24,397,168.76	27,698.37	216,451.16	805.65
		Total Number of Yearly Bets	387,318.00	6,786.15	20,066.52	396.00

*$p < .001$

VI. Responsible Gaming Features

This year, in addition to the general analyses of feature usage, we began to investigate patterns of feature usage, particularly setting and changing features over time. Across all gaming types (casino, poker, and tournament), a total of 4,745 gamblers used responsible gambling (RG) features during 2016. This marks the third straight year of usage decline, despite a new requirement that operators install an “RG button” on their website that would take patrons from any page to the RG features page. In 2014, more than three times as many players tried one or more RG feature compared to in 2016.

Similar to in prior years, RG users in 2016 had a mean age of 39 years, with the youngest player aged 21 years and the oldest player, 91 years; this was slightly older than last year but younger on average than RG users in 2014. Only 3.6% of those 65 years or older and 9.7% of the 55 to 64 age group signed up for one or more RG feature. Observing the differences in participation across years, this year there was a significant drop in the proportion of players ages 21 to 24 who used RG features and a higher proportion in the 35 to 54 age groups, although there were fewer participants ages 45 to 54 this year than in 2014. The most significant drop across the past three years is in the 55 to 62 and 65+ age groups. Fewer late middle and older adults chose to use RG features in 2016; this may be due, in part, to a decrease in participation by older adults since 2014.

Consistent with the general population of players, the highest proportion of gamblers, 34.9%, were concentrated in the 25 to 34 age category, followed by those in the 35 to 44 age group (24.9%). Overall, the proportionate breakdown of RG users in 2016 was similar to that in 2014 in the younger but not the older age categories. Usage of features in the youngest demographic group increased last year but dropped below 2014 percentages in 2016. These findings were similar for the 25 to 34 age group and older age groups: Only the proportion of 35 to 44 year olds slightly increased in 2016.

Table 22. RG Feature Users by Age Category

Age Category	Use RG Features 2014		Use RG Features 2015		Use RG Features 2016	
	%	N	%	N		
21-24	9.2	1,236	*10.9	782	*8.5	404
25-34	31.2	4,181	*36.6	2,632	34.9	1,659
35-44	23.2	3,111	23.5	1,690	*24.9	1,181
45-54	19.8	2,656	17.2	1,235	*18.4	872
55-64	11.4	1,533	9.0	647	9.7	458
65+	5.3	705	2.9	205	3.6	171
N	13,422		7,191		4,745	
Min	21		21		21	
Max	95		110		91	
Mean	40.17		38.73		39.29	

**p*< .000

By gender, a higher proportion of women (8.7%) compared to men (6.6%) enacted at least one feature during the year. Although only 28.6% of online gamblers were women in 2016, they made up 34.5% of RG users. In contrast, men made up 71% of all online gamblers but comprised only a little over 65% of those who used RG features. Compared to data in 2015, the overall proportion of women users increased and men decreased, however, women still represented a significantly higher proportion of users relative to the overall percentage of online gamblers.

Table 23. RG Users Versus Non-Users (All Casino & Poker Gamblers)

	Total		Male		Female			Breakdown by Gender 2014		Breakdown by Gender 2015		Breakdown by Gender 2016	
	%	N	%	n	%	n		%	n	%	n	%	n
Use RG	7.2	4,745	6.6	3,106	8.7	1,639	**Male**	60.0	8,106	68.1	3,328	65.5	3,106
Don't Use RG	92.8	61,072	93.4	43,900	91.3	17,172	**Female**	40.0	5,394	31.9	1,559	34.5	1,639

**p*< .000

The analyses identified one consistent finding across calendar years: a majority of those who used RG features were casino players or casino players who also endorsed another play type (94%). In total, 4,745 players who gambled in online casinos signed up for one or more RG feature. As indicated in Table 24, there were significant differences across all play patterns between those who used and did not use RG features. Gamblers who engaged one or more of the RG features bet on an average of about three sites, compared to non-RG gamblers who bet on an average of less than two sites.

Compared to the previous year, RG gamblers in 2016 bet on more sites, while there was only a slight increase in the number of sites accessed by other players. Notably, the average total betting days, maximum wager, total yearly wager, and total number of yearly bets all significantly increased in 2016 compared to 2014 and 2015 for RG gamblers. This finding is reflected in the median comparisons between 2015 and 2016, where RG gamblers in 2016 were significantly higher on all indicators except median single wager.

Table 24. Play Patterns of RG Gamblers between 2014, 2015 & 2016 (Casino only)

Play Patterns	RG Gamblers 2014				
	N	Max.	Mean	Std.	Median
#Sites Wagered	10,421	6.00	2.33	1.46	Not reported
Total Betting Days	10,421	364.00	54.62	72.51	
Min. Wager ($)	10,421	127.50	0.41	2.67	
Max. Wager ($)	10,421	36,750.00	143.61	688.32	
Avg. single Wager ($)	10,421	705.31	8.38	24.83	
Total Yearly Wager ($)	10,421	421,950.67	139,289.25	697,860.80	
Total Number of Yearly Bets	10,421	1,464,282.00	36,000.00	80,753.90	
Play Patterns	**RG Gamblers 2015**				
	N	**Max.**	**Mean**	**Std.**	**Median**
#Sites Wagered	4,640	8.00	3.17	2.16	2.00
Total Betting Days	4,640	364.00	73.14	84.56	37.00
Min. Wager ($)	4,640	500.00	0.60	8.79	0.05
Max. Wager ($)	4,640	35,996.00	209.85	780.38	49.60
Avg. single Wager ($)	4,640	739.67	*9.63	26.50	2.44
Total Yearly Wager ($)	4,640	13,914,295.50	194,177.21	600,300.60	36,937.58
Total Number of Yearly Bets	4,640	976,557.00	48,500.40	91,146.71	10,198.50
Play Patterns	**RG Gamblers 2016**				
	N	**Max**	**Mean**	**Std**	**Median**
#Sites Wagered	4,745	10.00	3.48	2.51	3.00
Total Betting Days	4,745	365.00	*85.81	92.71	48.00
Min. Wager ($)	4,745	75.00	0.35	2.38	0.01
Max. Wager ($)	4,745	19,935.00	*220.07	708.96	50.00
Avg. single Wager ($)	4,745	308.36	4.18	11.50	1.69
Total Yearly Wager ($)	4,745	25,552,745.38	*260,236.45	890,169.50	50,006.05*
Total Number of Yearly Bets	4,745	1,116,086.00	*59,450.07	103,929.18	15,119.00*

*$p < .000$

Compared to non-RG gamblers, RG gamblers in 2016 reported nearly three times the average number of betting days (85.8 days versus 30.1 days per year)(Table 25). The minimum wager for RG gamblers was significantly less than for non-RG players. However, the mean maximum wager was more than three times as much ($220.07 versus $61.03). Both of these mean maximum wager results exceed what was reported in 2015 ($209.85 for RG users and $56.85 for non-RG gamblers). On average, gamblers who chose to use RG features placed more than 3.5 times the total number of bets of those who did not use RG features (59,450 bets to 16,349), suggesting that limit-setting for this group could be an effective tool for limiting losses if properly and consistently utilized. Overall, casino players using RG features differed significantly from those not using RG features in all play categories except for average minimum wager as they did in 2015. Those disparities are likewise reflected to varying degrees by the median, where a player in the middle of all RG players would wager $50,000 and place more than 15,000 bets over the year, compared to about $866 and 429 bets by a median non-RG player.

Table 25. Play Patterns of RG and Non RG Gamblers (Casino only)

Play Patterns	RG Gamblers 2016				
	N	Max	Mean	Std	Median
#Sites Wagered	4,745	10.00	*3.48	2.51	3.00
Total Betting Days	4,745	365.00	*85.81	92.71	48.00
Min. Wager ($)	4,745	75.00	0.35	2.38	0.01
Max. Wager ($)	4,745	19,935.00	*220.07	708.96	50.00
Avg. single Wager ($)	4,745	308.36	4.18	11.50	1.69

Total Yearly Wager ($)	4,745	25,552,745.38	*260,236.45	890,169.50	50,006.05
Total Number of Yearly Bets	4,745	1,116,086.00	*59,450.07	103,929.18	15,119.00
Play Patterns	**Non-RG Gamblers 2016**				
	N	**Max**	**Mean**	**Std**	**Median**
#Sites Wagered	48,473	10.00	1.77	1.47	1.00
Total Betting Days	48,473	365.00	30.13	63.00	1.00
Min. Wager ($)	48,473	313.00	0.61	4.87	0.01
Max. Wager ($)	48,473	29,860.00	61.03	273.81	10.00
Avg. single Wager ($)	48,473	1,866.29	6.30	23.67	1.39
Total Yearly Wager ($)	48,473	31,032,290.91	49,510.94	383,257.66	865.50
Total Number of Yearly Bets	48,473	1,482,919.00	16,349.22	60,194.34	429.00

Patrons in New Jersey have the option of using one or more RG features and switching among features over their course of play. To isolate the use of one particular feature, we analyzed the proportion of players, by gender, who used only one particular feature at a time. Those features have been fully described in prior reports. As indicated in Table 26, men were more likely to choose the deposit and loss (spend) limit features in 2014, though deposit limits proved the most popular feature for men in 2016. Similarly, the use of self-exclusion among men has steadily increased, from 54% to 63% to 65% in 2016. Among women, self-exclusion dropped from the most popular feature chosen by 46% of RG users in 2014 to 35% in 2016, after time limit (40%), cool-off (36%) and deposit limit (36%). During the same period, a higher proportion of women elected to use two or more RG features than they did in 2014. Taken together, these findings suggest that female RG users opted for less restrictive alternatives to banning themselves from gambling in the past year.

Table 26. RG Features by Gender (Casino Players Only) (N=4,745)

RG Type 2014	**Male**		**Female**		**Total**	
	%	**N**	**%**	**N**	**N(%)**	
Cool-off only	64.0	514	36.0	289	803 (6.0)	
Deposit Limit only	75.5*	597	24.5	194	791 (5.9)	
Loss (Spend) Limit only	83.8*	243	16.2	47	290 (2.2)	
Time Limit only	67.4	559	32.6	270	829 (6.2)	
Self-exclusion only	54.0	4,326	46.0*	3,684	8,010 (59.7)	
Uses 2 or more RG features	66.1	1,777	33.9	910	2,687 (20.0)	
Total N % of gender	59.8	8,106	40.2	5,394	13,410 (100.0)	
	Mean	Std	Mean	Std	Mean	Std
# of RG features used	1.68	0.99	1.69	0.98	1.68	0.99
RG Type 2015	**Male**		**Female**		**Total**	
	%	**N**	**%**	**N**	**N(%)**	
Cool-off only	73.4*	301	26.6	109	410 (9.3)	
Deposit Limit only	67.2	713	32.8	348	1,061 (24.0)	
Loss (Spend) Limit only	66.2	137	33.8	70	207 (4.7)	
Time Limit only	66.4	211	33.6	107	318 (7.2)	
Self-exclusion only	63.1	363	36.9	212	575 (13.0)	
Uses 2 or more RG features	62.5	1,152	37.5	690	1,842 (41.7)	
Total N % of gender	65.2	2,877	34.8	1,536	4,413 (100.0)	
	Mean	Std	Mean	Std	Mean	Std
# of RG features used	1.59	0.86	1.71	.0.93	1.62	0.88
RG Type 2016	**Male**		**Female**		**Total**	
	%	**N**	**%**	**N**	**N(%)**	
Cool-off only	64.3	404	35.7	224	628(13.2)	
Deposit Limit only	64.3	617	35.7	343	960(20.2)	
Loss (Spend) Limit only	78.5	227	21.5	62	289 (6.1)	

Time Limit only	59.8	144	40.2*	97	241(5.1)
Self-Exclusion only	64.9	392	35.1	212	604(12.7)
Uses 2 or more RG Features	65.2	1,306	34.8	698	2,004(42.2)
Total N % of gender	65.5	3,106	35.5	1,639	4,475 (100.0)

*p< .000

Decreases in utilization of RG features, combined with shifting trends among RG users, underscores the importance of gaining a better understanding of how players set, use, alter and discontinue the use of RG features. The following tables provide initial insight into the extent of changes made over the course of a year to RG features. Future analyses will select a specific sub-sample of RG users and analyze changes they make to their features in light of their play.

Table 27 shows the average and median number of changes players made to each of the features they used. The table includes any player who chose the feature, not only those who used one feature exclusively. As indicated, players who chose a time limit feature made the least number of changes, while those who chose cool-off or deposit limit only made an average of seven changes with the median player(s) making three. Those who played a wider variety of features made a higher number of changes, almost nine on average, though the median number was three.

Table 27. Changes to RG Features by RG Type

RG feature	N	Mean	Std.	Median	Total number of changes
Cool-off	1,898	7.14	12.85	3.00	13,549
Time limit	722	2.04	2.19	1.00	1,472
Spend limit	1,229	3.42	4.66	2.00	4,199
Deposit limit	2,414	7.17	13.41	3.00	17,318
Across all features	4,121	8.87	17.52	3.00	36,538

Players who met the criteria (outlined above) for inclusion in the Top 10% who also used RG features made about five times the number of changes to each feature as non-Top 10% RG players (Table 28), although the median figures would suggest the changes for some features (cool-off, deposit) were 10 times as high. Those in the Top 10% made significantly more changes to all features than other gamblers.

Table 28. Changes to RG features: Top 10% v. Other Gamblers

RG Feature*	N	Mean	Std.	Median
Cool-off Top 10%	195	54.48	38.22	43.00
Cool-off Others	1,703	9.09	15.44	4.00
Time limit Top 10%	75	36.20	41.71	16.00
Time limit Others	647	10.93	20.37	3.00
Loss (spend) limit Top 10%	125	51.24	47.50	32.00
Loss (spend) limit Others	1,104	10.86	17.36	5.00
Deposit limit Top 10%	257	53.93	36.93	44.00
Deposit limit Others	2,157	7.15	9.87	4.00

*All features are significantly different.

By age, gamblers in the 35 to 44 age group made the most changes to time limit settings on average, though median distributions were higher among those ages 45+ (Table 29). Overall, players ages 45 to 54 made the most changes on average to cool-off and deposit limit and across multiple features, and average change scores were highest for time limit among those 35 to 44. However, examining the median scores suggests that the number of changes was consistent across age groups for deposit (three changes), loss (spend)(two changes), and multiple features (three changes), but that those in the middle age groups (35 to 64) tended to make more changes to the cool-off feature and those who were 45 and over, to the time limit feature.

Table 29. Number of Changes Made to RG Features: By Age Group

Age Group		Multiple features	Cool-off	Time limit	Loss limit	Deposit limit
	Maximum	72.00	56.00	6.00	19.00	32.00
21 to 24	Mean	5.47	4.03	1.59	2.71	4.23
n=404	Std.	8.58	6.41	1.11	2.77	4.93
	Median	3.00	2.00	1.00	2.00	3.00
	Maximum	230.00	110.00	10.00	67.00	163.00
25 to 34	Mean	8.00	5.92	1.77	3.37	6.99
n=1,659	Std.	16.59	10.50	1.46	5.16	12.89
	Median	3.00	2.00	1.00	2.00	3.00
	Maximum	181.00	168.00	28.00	34.00	117.00
35 to 44	Mean	9.77	7.50	*2.46	3.54	7.91
n=1,181	Std.	17.88	12.69	3.40	4.20	13.85
	Median	3.00	3.00	1.00	2.00	3.00
	Maximum	221.00	160.00	14.00	43.00	164.00
45 to 54	Mean	*10.91	*10.09	2.11	3.73	*8.06
n=872	Std.	22.09	18.14	1.98	5.20	16.77
	Median	3.00	3.00	2.00	2.00	3.00
	Maximum	122.00	101.00	9.00	25.00	77.00
55 to 64	Mean	9.18	8.48	1.91	3.27	6.78
n=458	Std.	15.40	12.66	1.30	3.39	11.30
	Median	4.00	4.00	2.00	2.00	3.00
	Maximum	153.00	56.00	6.00	39.00	92.00
65+	Mean	6.72	4.27	2.12	3.74	6.13
n=171	Std.	14.79	7.69	1.32	6.17	11.75
	Median	3.00	2.00	2.00	2.00	3.00

*$p \leq .05$

By gender, women made significantly more changes on average to cool-off, deposit limit, and across multiple features than men (Table 30). However, as with age, median scores between the two groups were similar, suggesting that a proportion of women were making significantly more changes to those features than others.

Table 30. Number of Changes Made to RG features: By Gender

Gender		Multiple features	Cool-off	Time limit	Loss limit	Deposit limit
	Maximum	230.00	113.00	14.00	39.00	163.00
Female	Mean	*10.12	*8.22	1.88	3.40	*8.11
n=1,639	Std.	19.98	13.88	1.62	4.18	15.91
	Median	3.00	3.00	1.00	2.00	3.00
	Maximum	221.00	168.00	28.00	67.00	164.00
Male	Mean	8.20	6.56	2.14	3.43	6.64
n=3,106	Std.	16.04	12.24	2.47	4.88	11.70
	Median	3.00	2.00	1.00	2.00	3.00

*$p< .01$

Table 31 explores the number of changes by feature and play type. Of interest, those who play both casino games and poker tournaments, followed by casino and poker, made significantly more changes to their RG features than all other groups across every feature. For example, the average casino and tournament player who used multiple features made an average of 27 changes over the year, compared to about nine for those who gambled only on casino games or played casino, tournament and poker. Similarly, casino and tournament players made more than 20 changes on average to their deposit limit, whereas players who played only casino made about seven and those who played poker only made two and poker and tournament, five changes. Looking at median scores, casino and tournament players likewise made significantly more changes to cool-off, deposit limit and multiple features but not time or loss (spend) limit.

Table 31. Number of Changes Made to RG features: By Play Type

Play Type		Multiple features	Cool-off	Time limit	Loss limit	Deposit limit
	Maximum	169.00	84.00	17.00	51.00	108.00
All 3 types	Mean	9.38	6.16	2.21	3.58	8.43
n=1,349	Std.	16.67	9.98	2.39	4.84	13.13
	Median	4.00	2.00	2.00	2.00	4.00
	Maximum	230.00	168.00	22.00	43.00	164.00
Casino Only	Mean	8.61	7.67	1.95	3.12	6.50
n=2,922	Std.	17.54	13.84	1.88	3.77	13.35
	Median	3.00	3.00	1.00	2.00	3.00
	Maximum	13.00	11.00	4.00	10.00	4.00
Poker only	Mean	2.88	2.11	1.83	3.83	2.36
n=46	Std.	2.99	2.35	1.33	3.43	1.03
	Median	1.00	1.00	1.00	3.00	3.00
Casino &	Maximum	153.00	110.00	4.00	34.00	104.00
Poker	Mean	13.25	10.44	1.84	5.20	9.91
n=176	Std.	24.87	18.73	1.11	6.20	17.56
	Median	4.00	3.00	1.00	3.00	3.00
Casino &	Maximum	140.00	68.00	28.00	67.00	87.00
Tournament	Mean	*27.16	*12.82	*7.00	*14.29	*20.38
n=29	Std.	42.07	19.28	11.75	24.15	27.28
	Median	6.00*	4.00*	2.00	3.00	6.00*
	Maximum	38.00	24.00	8.00	13.00	29.00

Poker & Tournament n=221	Mean	4.36	2.85	1.88	2.84	4.61
	Std.	5.81	3.81	1.47	2.65	4.48
	Median	3.00	2.00	1.00	1.00	3.00

**p*< .001   Note: Only two players only played in online tournaments, so they were excluded from these analyses.

Finally, this year we analyzed potential differences between those RG users who opted to self-exclude versus those who did not. Self-excluders made significantly more changes to their features over the year than non-self-excluders. However, as with play type above, median scores only differed significantly for cool-off, deposit limit and multiple features.

Table 32. Number of Changes Made to RG Features: Self-Excluders Versus Non-Self-Excluders

Self-excluder Yes/No		Multiple features	Cool-off	Time limit	Spend limit	Deposit limit
Did not self-exclude (n=3,271)	Maximum	221.00	160.00	14.00	67.00	164.00
	Mean	7.61	6.62	1.92	3.31	6.33
	Std.	15.29	12.53	1.61	4.53	11.91
	Median	3.00	2.00	1.00	2.00	3.00
Self-excluder (n=850)	Maximum	230.00	168.00	28.00	51.00	163.00
	Mean	*13.69	*8.02	*2.65	3.87	*11.03
	Std.	23.68	13.34	3.97	5.19	18.33
	Median	6.00	3.00	1.00	2.00	4.00

*p≤ .05

VII. Summary and Recommendations

A. Summary

Overall, player demographics in 2016 were closer to those in 2014 than to last year. Players were slightly older compared to those in 2015, although a majority of players, as in prior years, were clustered in the 25 to 44 age groups. Younger players were more likely to play across multiple types of games (casino, poker, tournaments), while older players (45+) were overrepresented among casino-only players, accounting for the drop in participation in poker and tournaments.

While the proportion of women gambling online has increased, it remains, overall, a male-dominated activity, with rates of gambling by males more than twice those by females. However, among those who only play casino games, the proportions of men to women were more equally distributed, 59% male, 41% female. As in prior years, men tended to be younger, while women were overrepresented in the middle age groups (45 to 54). Notably, in 2016, an increasing proportion of men – nearly half the sample – opted to only play casino games. Men were also more likely than women to bet during traditional working hours, placing more than 30% of bets between 9 a.m. and 6 p.m. When they used RG features, men chose deposit and/or loss (spend) limit, though an increasing proportion chose self-exclusion this year.

In contrast, women were slightly older and almost exclusively (85%) played casino games in 2016, although an increasing percentage of women gambled across all three activities compared to prior year. The proportion of women betting during the overnight hours increased, underscoring the need to target harm reduction strategies to this time period, particularly for women. Among RG users, women made up a higher percentage of those who used at least one feature, despite proportionately lower representation among gamblers. In addition, women who used RG in 2016 opted to try out multiple features, particular time and deposit limits and cool-off; they were less likely this year to choose to self-exclude.

While about half of all players use only one account, the proportion of those endorsing multiple accounts, the total number of bets placed, and the average maximum wager amounts have steadily increased over the past three years. Similarly, there were notable shifts this report year in the time of day analyses, with more wagers placed in sequential overnight time periods between 12 a.m. and 6 a.m., suggesting that players could be gambling for longer sessions. Fewer players, particularly female players, gambled during normal working hours, underscoring the shift to overnight gambling. Future analyses will attempt to determine whether players during particular time periods are playing for longer periods of time and placing proportionately more wagers to inform harm reduction efforts in this area.

Those who were classified as "Top 10%" players largely played only casino games (75%), gambled on at least three online activities, and wagered on twice as many sites as other players. This report year, players in the Top 10% wagered significantly more overall, likely accounted for by a sub-group of very heavy betters, with the average player betting about two-thirds of the year and some every day. Future analyses will attempt to isolate patterns and differentiate among betters who differ in frequency and size of bets, wagering across sites, and escalating betting patterns and amounts in response to losses.

As in the prior year, the most troubling finding in this report year is the continual decline of RG feature usage despite increases in betting indicators associated with increased frequency and intensity of play. In 2016, RG players numbered less than a third of those who used RG in 2014. Those who used the features were slightly older than last year but younger than RG users in 2014; a smaller proportion of older adults are using the features. Nearly all RG users (94%) were casino players who also played either poker or tournaments. This year overall, RG users bet three times as many days, placed 3.5 times more bets, and wagered significantly more than non-RG users. They also frequently switched or combined RG features, and made multiple changes to individual features over time. These findings suggest there is a proportion of heavy betters who would likely benefit from education and assistance with limit-setting to reduce losses and resulting harm.

Future analyses will investigate the nature of the changes among these groups to identify play patterns after baseline limit-setting and play patterns following changes to RG features. Among Top 10% players who used RG, the changes were more pronounced, with Top 10% players making about five times the number of changes to each feature compared to non-RG players. Those who opted to self-exclude were also more likely than non-self-excluders to make multiple changes to RG features.

B. Recommendations

The online gaming environment is unique, compared to land-based jurisdictions, due in part to its ability to offer 24-7 betting opportunities from various discrete modalities such as tablets and mobile phones, which allow players to gamble at home or at work in an unobtrusive fashion. For this reason, it is important that harm reduction features are embedded in sign-up and triggered by changes in frequency and intensity of play. The Internet provides a unique platform for standardizing education on limit-setting, the opportunity to customize features, and the ability to provide feedback to players who appear to be struggling with harm reduction.

In New Jersey, the Division of Gaming Enforcement has responded to recommendations in prior reports by commissioning an RG logo and requiring operators to ensure it is visible on each page to players and connects players to RG features on each site. Despite this key initial step, the number of RG users continues to decline. This is likely due to the lack of integration at sign-up, the absence of education on how to set each feature, the lack of feedback when features are changed, and the lack of standardization of betting patterns that trigger opportunities to revisit RG.

Initiating these strategies in a standardized fashion across all platforms is a critical next step. As demonstrated by the play patterns of the Top 10% RG players and self-excluders, players who maintain the highest frequency and intensity of play also make significantly more changes to RG features. Though the reason for these change patterns is unknown, it is likely that players who are aware they are gambling beyond their means may be struggling with maintaining features that mitigate against loss of control during periods of diminished control. This is a particularly important target group for responsible gambling education. Similarly, the increase in overnight betting, particularly by women, may indicate that people with the freedom to isolate with computers in the middle of the night may play longer than originally anticipated and should receive targeted reminders or invitations about RG.

Piloting RG education, sign-up opportunities and messaging is key to identifying optimal harm reduction strategies. Ideally, gamblers at sign-up and at regular intervals (e.g. monthly, every four months etc.) would be prompted to review the available limit-setting features through a click-through tutorial that is standard across all platforms. The tutorial would educate gamblers on the purpose of each feature, provide guidance in setting individual limits, and prompt the gambler to set a limit or not set a limit. When gamblers exceed their limit or attempt to raise a limit, they would be provided with additional messaging to confirm they are making an informed choice. In this way, gamblers would become familiar with the use of each feature and encouraged to adopt whatever feature, if any, would assist them with gambling within their limits.

Finally, uniform RG education, standardization and integration should, ideally, be mandated by regulation and marketed by operators to increase utilization and to provide education on how to tailor features to suit individual players. In this way, players will be better able to make informed choices about their gambling behavior and to continue playing for recreation rather than to recoup losses that could adversely impact themselves and their families. We would recommend focusing on the development, marketing, education and deployment strategies for RG in the upcoming year.