

Cultural Indicators of Internet Sports Betting Policy

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Introduction

The academic study of online gambling is a relatively new field. The first occurrence of money being wagered using the Internet dates back only 16 years, and research in the field has only been actively conducted for about the past decade (Romney, 1995). Today, there are thousands of online gambling sites, served by even more online gambling skins. Politically, there is interest in this growth - it is considered everything

from a source of tax revenue to the scourge of society (Bernhard & Abarbanel, 2011). The nature of the online medium has also been a cause for debate among jurisdictions seeking to legislate the activity. The Internet transcends territorial lines, and wager transactions can easily be conducted between persons located in differing regulatory schemes.

In response to increasing rates of gambling on the Internet, government policy has been appearing. This policy response tends to take one of four general forms - actively allow, actively prohibit, passively allow, or passively prohibit (Policy Department, 2008).

Those governments that *actively* allow or prohibit have passed and/or imposed regulations which deal explicitly with Internet gambling, and those which *passively* allow or prohibit have not enacted any legislation which deals specifically with the Internet medium (Policy Department, 2008). Passive policies also include those jurisdictions that have chosen to apply any pre-existing gaming regulation, generally based on land-based gambling laws.

Betting on sports is a unique case of gambling. Sports and sports betting are and have been intimately intertwined for thousands of years, and in many cultures it can be difficult to determine where one begins and the other ends. Gambling can be viewed as a threat to the integrity of sport, which has long stood as a bastion of honor and strength in a community and society (Binde, 2005). As such, sports betting may be treated with trepidation politically, due to cultural views on sport.

To measure the cultural and sociological factors which contribute to each country/jurisdiction's unique make-up, Geert Hofstede's Cultural Dimensions (Hofstede, 2009) are widely accepted by many academic disciplines as a means of quantifying the very qualitative cultural characteristics of differing countries. Table 1 lists the Hofstede indices, along with brief definitions.

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Table 1
Descriptions of Geert Hofstede's Cultural Dimensions

Dimension ^a	Description
Power Distance Index (PDI)	The extent to which less powerful members of society are willing to accept distance between themselves and more powerful, wealthier members of society. Higher values of PDI are associated with a greater willingness to accept inequalities of power.
Individualism (IDV)	The degree to which members of society have group ties. Higher values of IDV indicate loose bonds with others: individuals feel responsible for themselves and immediate family members.
Masculinity (MAS)	A representation of gender differentiation. Higher values of MAS indicate a gap between men's and women's values.
Uncertainty Avoidance Index (UAI)	A measure of a society's willingness to accept uncertainty. High values of UAI indicate a country is wary of changes from their standard life and typically will enforce strict laws to prevent these changes. High values also reflect a culture's higher philosophical and religious belief in an "absolute Truth."

Note. Descriptions adapted from Hofstede (2009).

^aThe fifth Cultural Dimension, the Long-Term Orientation Index, was not included in the model due to the low number of countries with computed values.

The purpose of this study is to identify social and cultural commonalities in countries with similar approaches to Internet sports betting operations policy. Following this, the author hopes to help predict gambling policy choices for countries that have not yet established policy regarding online sports betting operations.

Research Questions and Hypotheses

The research questions serve several disciplinary interests, from an online gaming operator's interest in government relations, to sport sociologists who wish to compare sports betting with sport itself, to policy makers who seek to emulate countries similar to theirs when making new policy. The research seeks to answer the following questions:

- a) Do the four Hofstede index scores distinguish countries' Internet sports betting operation policies?
- b) What is the relative importance of the index scores in classifying the policy types?

The terms by which the Hofstede indices are computed, the author hypothesizes that countries with active policies regarding operation of sports betting sites will have higher mean UAI scores than countries with passive policy types. The author further hypothesizes that countries that actively or passively allow companies to operate sports betting sites will have lower mean PDI scores than those which actively or passively prohibit the practice. Because PDI denotes how willing the population is to accept inequalities of power, the author postulates that a population's acceptance of a law that limits their freedom to gamble will be reflected in higher PDI scores. Theory does not

necessarily suggest IDV or MAS are directly related to gambling, but the exploratory nature of this study kept the variables in the model for purposes of research inquiry.

Methods

This secondary data set contained 64 cases, with each case representing one country and their representative gambling jurisdiction. For each country, values for each of the four Hofstede index scores were input, along with a coded value for their type of online sports betting operation type. The policy type was determined based on availability of data on the legality of online sports book operations as of November 30, 2011. Because there is no comprehensive, up-to-the-minute resource on policy for all countries included in the data set, data denoting policy type was obtained from twelve sources (Balestra & Krafcik, 2010; Bianchi, 2011; Casino City, 2010; Gainsbury, 2010; GamingZion, 2011; OPIAII, 2011; Policy Department, 2008; RecentPoker, 2009; Tanzania Gaming Act, 2003; Wéry, 2010; Wiebe & Lipton, 2008; Williams & Wood, 2009). These twelve sources include government reports, academic presentations, online gambling databases, and government legislation, all of which provided the background information necessary to determine policy type.

Data Screening and Assumption Testing

The data were entered and analyzed using SPSS version 18.0. The data set was analyzed for outliers on the measured variables within each policy type group. Skewness and kurtosis, univariate outliers (z-scores), and multivariate outliers (Mahalanobis distance) were examined. No outliers were found in the database.

Assumptions for the main analysis were also tested, including linearity, multivariate normality, homogeneity of variance and covariance matrices for discriminant function analysis (Box's *M*), homogeneity of variance for the univariate situation (Levene's Test), and singularity and multicollinearity. All assumptions were met, with the exception of linearity. The only linear relationship among the pairs of dependent variables was between PDI and IDV. The remaining paired relationships were not found to be curvilinear, but rather that they were not related significantly. That is, there was no relationship between the pairs. The dependent variables were kept in the analysis because despite their non-significant relationship, they are correlated with the other dependent variables.

Data Analysis

A discriminant function analysis (DFA) procedure was used to determine if the Hofstede index scores distinguished between the four policy types, and to gauge the relative importance of the indices. The grouping variable for DFA was online sports betting policy (actively allow, passively allow, actively prohibit, passively prohibit), and the four classification variables were PDI, IDV, MAS, and UAI. The Hofstede index scores included in this data set are measured as integers and range from 5 - 112. When tests of equality of group means were significant at the univariate level, appropriate follow-up post hoc Tukey tests were conducted for multiple comparisons to take a closer look at group differences.

Results

Because the grouping variable was comprised of four policy types, three discriminant functions were calculated. The first combined (1 through 3) function was statistically significant, $\chi^2(12) = 31.63, p = .002, \lambda = .585$. After removal of the first function, the second combined (2 through 3) discriminant function was not statistically significant, $\chi^2(6) = 9.43, p = .151, \lambda = .852$. Due to the second combined function's high canonical correlation ($\text{can. corr}^2 = .14$), and the goal of classification through DFA, the second combined function was still considered during analysis.

The first discriminant function maximally separated the Actively Prohibit and

Passively Prohibit policy types from the Actively Allow and Passively Allow policy types. The second discriminant function separated the Actively Allow and Passively Prohibit policy types from the Passively Allow policy type.

The loadings of predictors into discriminant functions and the standardized discriminant function coefficients can be found in Table 2. Loadings less than .50 are not interpreted. The loadings suggested that the best predictor for distinguishing between the two prohibiting policies and the two allowing policies (first combined function) was UAI. The standardized coefficient shows the unique contribution of UAI to the first function is 0.92, with a loading of .67. The best predictor for distinguishing between the Passively Prohibit and Actively Allow policy types and the Passively Allow policy type (second combined function) was IDV. The standardized coefficient shows the unique contribution of IDV to the second function is 0.87, with a loading of .87.

Table 2

Structure Matrix Loadings and Standardized Coefficients for Discriminant Functions

Predictor	Function 1		Function 2	
	Structure Matrix	Standardized Coefficient	Structure Matrix	Standardized Coefficient
Uncertainty Avoidance Index (UAI)	0.67	0.92	-0.61	-0.44
Individualism (IDV)	0.46	0.49	0.87	0.87
Power Distance Index (PDI)	-0.41	-0.39	-0.33	0.23
Masculinity (MAS)	-0.03	-0.01	0.28	0.19

Note. Largest absolute correlations are indicated in bold.

A visual representation of the two discriminant functions analyzed and their relationship to group centroids can be seen in Figure 1.

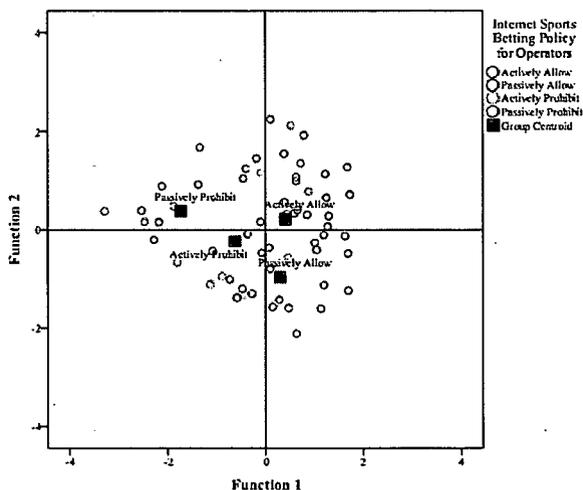


Figure 1. Graph of canonical discriminant functions describing the relationship of group centroids for policy type.

After establishing that UAI and IDV were the best predictors of distinguishing between the policy types, follow up post hoc Tukey tests were conducted where each policy type was contrasted with the other three types. Multiple comparisons indicated that UAI was significantly different for policies which actively allow and passively prohibit ($p = .011$), and passively allow and passively prohibit ($p = .002$). Post hoc Tukey tests indicated that IDV was significantly different for policies which actively allow and actively prohibit online sports betting, $p = .032$. IDV was nearly significant different for policies which actively allow and passively allow online sports betting, $p = .057$, suggesting further study. See Table 3 below for means and standard deviations.

Table 3

Means and Standard Deviations for Individualism and Uncertainty Avoidance Index Scores

Policy Type	Uncertainty Avoidance Index (UAI)		Individualism (IDV)	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Actively Allow	68.71	23.14	52.97	22.98
Passively Allow	83.00	8.27	29.29	16.31
Actively Prohibit	59.64	22.90	33.36	24.79
Passively Prohibit	35.60	16.65	34.80	11.48

Finally, the classification results for the 64 countries' policies sampled were computed. The degree of accuracy of the classification results indicate that overall, 60.9% of the countries' policies were correctly classified, significantly greater than the 25% that would be classified by chance alone ($z = 6.63, p < .0005$). A jackknifed (cross-validated) classification resulted in 51.6% accuracy, significantly greater than chance ($z = 4.91, p < .0005$), indicating that the classification results are valid. The percentages of accurately classified participants in the policy groups for the overall and jackknifed analysis can be seen in Table 4.

Table 4

Classification Results for Overall and Cross-validated Analysis

	Percentage Correctly Classified	
	Overall	Cross-validated
Actively Allow	65.8	57.9
Passively Allow	85.7	57.1
Actively Prohibit	28.6	28.5
Passively Prohibit	80.0	60.0

Discussion

The results of the discriminant function analysis demonstrated that there were two Hofstede indices, UAI and IDV, which significantly distinguished between the four groups. The two significant predictors effectively contributed to classification results, judging them to be useful as predictors for future policy-making decisions. Online gaming operators who are seeking new jurisdictional markets, policy makers considering

future steps for their region's policy regarding sports betting, and academics who wish to further their understanding of the cultural implications qualities behind policy choices may wish to further investigate the UAI and IDV measures of countries whose policy they wish to forecast. Neither MAS nor PDI were found to significantly discriminate between the four policy types. The non-significance of MAS suggests that the size in the gap between men's and women's values does not help to distinguish between the types of policy for sports betting online. That PDI was not significant provides an interesting insight. PDI, which measures the accepted distance between less powerful members of society and those of higher authority, had been hypothesized to differentiate between countries that allow online sports betting and those that prohibit. The results suggest, however, that gambling does not follow traditional channels of power distribution, in which stricter laws exist because subordinates expect to be told what to do (Hofstede, 2012). Gambling instead appears to ignore the cultural power distribution, and countries' approach to regulating the activity is not distinguished along the lines of the PDI index.

When follow-up analyses were conducted on group differentiation of policy types, it was found that UAI contributed to a significant difference between policies along the allow/prohibit line. Because higher UAI scores typically mean a country has stricter laws and regulations, the author had hypothesized UAI would discriminate between active and passive sports betting policies, not allow or prohibit. Based on the discriminant functions, however, countries with higher UAI measures are more likely to be classified into a policy that allows gambling, whether it be active or passive, rather than prohibit. Considering this actual differentiation, the combination of sports betting and online gambling may be a different political animal when it comes to tolerance uncertainty and strict laws. From a political standpoint, recent media scans of countries' discussions on gambling reveals that uncertainty in gambling issues usually comes from a religious or moral viewpoint, rather than a civic opposition (Bernhard & Abarbanel, 2011). This phenomenon could explain why UAI did not contribute to group differences between actively allow and passively allow policy types.

The IDV index was statistically significantly higher for the actively allow policy type than the actively prohibit policy type, which lends support to the *Bowling Alone* theory (Putnam, 2000). Putnam (2000) theorized that individuals are increasingly spending less face-to-face time with each other, and increasingly spending time with electronic devices. He additionally referenced gambling, stating that the popularity of social games, like bridge and blackjack, are decreasing, while single-player electronic games, like slot machines, are increasing in popularity. By extension, online gambling is a single-player electronic game, and even typically interactive games like poker are not played in a face-to-face manner but in a virtual environment, which suggests that the analysis here extends the *Bowling Alone* theory.

The results of this study also introduce an argument to Bernhard et al. (2007), who found that overall, Putnam's (2000) claim that machine gambling is rising in popularity over games which encourage more social interaction was not entirely the case. Bernhard et al. (2007) concluded that there is a social element to machine games like slots or video poker, as there also is in interactive card games. The analysis of IDV as a cultural indicator of online gambling regulations tells yet another story of the role social interaction plays in the activity. The IDV score, which measures the extent to which individuals integrate themselves into groups, is higher for countries that actively allow online sports betting policies, suggesting that countries in which individuals spend less time together are more likely to encourage online gambling operations. Again, we see online sports betting being revealed as a unique researchable object – the interaction

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between a culture's community connections and the government's means of regulation of the online gambling activity suggests that countries more welcoming of online sports betting have fewer of the face-to-face social ties Putnam (2000) describes, and the results are not reflective of the social aspects of machine gambling revealed in Bernhard et al. (2007).

Limitations and Future Research

The extent to which countries were selected for determining discriminant functions was limited by the availability of the Geert Hofstede Cultural Dimensions. In addition, referencing these results in the future may cause difficulties in accurate representation of policy type. Many jurisdictions are no longer regulating online sports betting at a national level, and are moving to a state or municipal level. Because of this, some countries may be represented by several different policy types regarding site operation. The Hofstede indices are assigned to countries, and cannot be broken down to these smaller jurisdiction levels. In future research, continual updates to these discriminant functions are necessary for accurate analysis, as new countries are quickly adapting laws and regulations for the constantly evolving technological world of online sports betting.

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