

Hedonistic Differences Between Mechanical Game Players And Table Game Players: An Exploratory Investigation On The Road To A Comprehensive Theory For Gambling

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Abstract

This exploratory research examined relationships between casino play and hedonic factors. The hedonic factors examined were emotion, sensation seeking and impulsivity, absorbing experiences, and analytical characteristics. Differences between slot players and table game players were measured. The subjects were a convenience sampling of 1,010 casino gamblers at a Las Vegas Strip casino catering to out of town visitors. All participants completed a 45-item survey. The constructs were measured using the Mehrabian and Russell (1974) pleasure, arousal, and dominance scale; the Zuckerman Kuhlman sensation seeking and impulsivity scale; the Swanson (1978) absorbing experience scale; and an analytical scale developed by the researchers.

Both table game players and slot players derive pleasure from the pursuit of gambling. Table game players are more deeply involved and tend to be more aware of the intricacies of the games than slot players. Table game players are not as impulsive and tend to be more controlled than slot players. The overwhelming majority of table game players and slot players demonstrate discipline in terms of their gambling spending.

Keywords: Table game players; slot players; hedonic factors

Introduction

A significant amount of study has been undertaken on problem gambling, gambling behavior in laboratory settings, the economic impact of gambling, public policy issues, and gambling regulation. However, little empirical evidence has been gathered on gambling behavior in an operating casino environment. The proliferation of casinos in the United States has created a new competitive environment for commercial gambling. Understanding the motivations of new generations of casino customers is imperative. Mirage Resorts has reported that, for the first time in the company's history, one of their properties generated more money from non-casino revenue centers than from

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the casino. The current casino experience encompasses lodging, food and beverage, recreation and entertainment, retail, and the casino. Using each of these components to create a unique competitive position will be the challenge of future casino executives. The development of a coherent research agenda is imperative in the management and marketing of the successful casino enterprise. This exploratory study begins to illuminate one aspect of the casino experience by examining relationships between casino play and hedonic factors. The study lays one cornerstone for developing a comprehensive gambling theory.

Consumer behavior and marketing research examined products and services. Experiential products fall outside of the traditional perspective of the product and service domain. The Hedonic Consumption Paradigm postulates that there is a class of experientially motivated products requiring constructs different from products and services. Experientially motivated products are postulated as motivated by emotional involvement, sensation seeking and impulsivity, absorption into the activity, and a cognitive component. This study examines the phenomenon of gambling in the context of the Hedonic Consumption Paradigm constructs.

Theoretical Background of Hedonic Consumption

The preponderance of gambling research has focused on issues related to problem gambling. The significant expansion of legalized gambling has resulted in widespread interest in other gambling research topics. There is a growing body of research on economic development, public policy issues, gambling regulation, and casino management (Bybee, 1995; Gu, 1995; Jang, Lee, Park, & Stokowski, 2000; Lucas & Bowen, 2000; Hsu, 1998; Marfels, 1998; Oh & Hsu, 1999; and Rose, 1985). The present study draws on work from consumer behavior and hedonic consumption research. The identification of a theoretical context within which to conduct a study of gambling was made difficult by the nature of the activity. Like traditional product purchases, one casino executive perceived the casino product to be the gambler's winnings (Larry Wolf, personal communication, February 9, 1996). The literature suggested underlying intrinsic motivators for gambling participation (Berlyne, 1968; Kusyszyn, 1977).

Hedonic consumption has been defined as those facets of behavior that relate to the multisensory, fantasy, and emotive aspects of a consumer's experience with products (Hirschman & Holbrook, 1982). Berlyne (1971) reported that individuals respond to external multisensory inputs and react by generating internal multisensory fantasies. A gambling example is the excitement and anticipation of a gambler rolling the dice on a craps table and the internal fantasy of what he or she would do with all of the winnings. Multisensory images in a gambling context were either historic images or fantasy. Fantasy images were drawn from experience. Hirschman and Holbrook (1982) viewed this relationship as a continuum ranging from completely historic images to solely fantasy images. Research in hedonic consumerism attempted to capture the full range of sensory, fantasy, and emotional response to products in an attempt to identify underlying intrinsic motivations.

Several studies have applied hedonic theory to consumption situations. Performance, personality, emotions, and perceived complexity were examined in an illustrative study that investigated intrinsically motivated playful consumption (Holbrook, Chestnut, Oliva, & Greenleaf, 1984). The study employed the Dimensions of Emotions Scale (PAD). The PAD paradigm measured pleasure, arousal, and dominance (Mehrabian & Russell, 1974).

Hirschman (1983) examined predictors of problem projection, role projection, fantasy fulfillment purchasing, and escapism. Of particular interest to the present study were the constructs of fantasy fulfillment purchasing and escapism. Hirschman measured fantasy fulfillment by the degree to which respondents fantasized during participation in various activities. Escapism was similarly measured by tendencies to get away from problems, pressures, and experiencing a loss of time.

Researchers have found that gamblers became immersed in gambling activity. Gamblers lost track of time, ignored primary drives such as eating and sleeping, and escaped their problems while engrossed in games (Deci, 1975). Gambling could be an absorbing experience for many people. This research examined the relationship of the types of absorbing experiences gamblers indulged in and whether they were a motivating factor for game choice.

Related research by Larcher and Mizerski (1994) examined new rock music in the context of the Hedonic Consumption Paradigm. The study examined hedonic constructs and their ability to predict purchase intentions. The model measured emotional responses, sensory responses, imaginal responses, and analytical responses to music consumption.

This exploratory research examines the hedonic differences between table game players and slot game players. Explanations of gambling participation paralleled the explanations given for play (Csikszentmihalyi, 1976; Kusyszyn, 1977). The characteristics shared by gambling and play were attitudinal and emotional, sensation seeking, absorbing experiences and analytical opportunities. Abt, Smith, and Christiansen (1985) and Andersen and Brown (1984) reported that gambling was a fun filled activity. Prior research indicated a strong correlation between risk taking behaviors and sensation seeking (Zuckerman, 1994). The research suggested that excitement was a key component of gambling behavior (Kallick, Suits, Dielman, & Hybels, 1979). The excitement generated in a craps game was more intense than the excitement generated at a slot machine (Skolnick, 1978). While these characteristics have been identified as motivators of gambling, no effort has been made to link these intrinsic motivations to game choice. This study explored those relationships.

Methodology

Measurements

The independent variables examined in the present study were sensation seeking tendencies, absorbing experience tendencies, emotional tendencies, and analytical tendencies. The independent variables were operationalized using existing scales where available. The Zuckerman Kuhlman Impulsivity and Sensation Seeking Scale (ImpSS) measured sensation seeking and impulsivity. Swanson's absorbing experience scale (1978) operationalized sensory- emotional arousal, escape, and fantasy (Hirschman 1983). While it was difficult to measure emotional responses to activities, evaluation of attitudes and their emotional responses was possible. Gambling was shown to have provided an environment for self-determination, control, composure, joy, fear, anger, anticipation and other emotional states (Kusyszyn, 1977). This study operationalized evaluations of attitudes and emotions and their significance in game choice using the PAD (Mehrabian & Russell, 1974).

Gambling provided a spectrum of opportunities for analysis. Mental activities would be expected to vary depending on game choice. For many serious gamblers an important component of their participation was the mental challenge afforded by the game. This study examined analytical tendencies in terms of game choice. The ImpSS, the absorbing experience scale, and the analytical variables were measured with a six point modified Likert Scale. The PAD was measured with a six point semantic differential scale.

The independent variable in the present study was game choice. Casinos offered a variety of game choices. Live table games included roulette, twenty-one, baccarat, Caribbean-stud poker, craps, wheel of fortune, and poker. Slots included all forms of mechanical games including keno, regular slots, progressive slots, and video poker. These classifications were made for two reasons. First, casino management is generally broken into two areas. Table game management is responsible for all live play and slot management is responsible for all mechanical games. The second rationale for this classification is the degree to which live play involves interaction with other players and casino personnel, while slot play is more solitary in nature.

The pre-test instrument consisted of 76 response variables. The data were analyzed using SPSS Windows v6.1.3. The pre-test data were subjected to principal component analysis to facilitate interpretation of the results and reduce the number of independent variables for the subsequent analysis. Separate principal component analyses with varimax rotation were run on the PAD variables, the analytical variables, the sensation seeking variables, and the absorbing experience variables. To improve construct validity and further purify the measures, factors were retained for each construct based on eigen values greater than 1.0 and drop off of the scree greater than or equal to 1.0. Variables with no loading greater than 0.55 on more than one factor in the principal component analysis and with no loading below 0.40 on any factor were eliminated to enhance convergent and discriminant validity. Cronbach's alpha coefficient and item to total correlations were used to improve reliability, refine the measures, and eliminate items resulting in lower alpha coefficients using marketing scale development principles described by Churchill (1979) and Nunnally (1978). Scales achieving a coefficient ALPHA of .65 or higher were included in the final survey instrument. Thirty-seven items met these criteria for inclusion in the final data collection instrument, suggesting adequate validity and reliability for an exploratory study of this nature.

The final survey consisted of 45 response variables. There were eight variables on gambling behavior including game choice, number of trips taken and planned, budgeting, and outcome variables. Sixteen variables were included from the original PAD constructs. A minimum of three variables remained from each construct. Eight variables remained from the original 19 on the ImpSS. Seven of the analytical variables and 10 of the absorbing experience variables were included in the final survey instrument. The results, together with the means, standard deviations, and coefficient alpha for the pre-test factors are reported in Table 1. The coefficient alpha is acceptable for exploratory research.

Table 1
PAD Scale: Dimensions of Hedonism in Casino Play

Variable	Overall Mean	Std. Dev.	Number of Items	Coefficient ALPHA
Cognition	3.402	.914	9	.664
Sensation Seeking	3.666	.879	8	.761
PAD	3.445	.598	12	.665
Absorbing Experience	3.600	.798	9	.664

Sample Design

Pre-test and final data were collected at the same Las Vegas casino during the spring of 1996. The casino marketed to out-of-town visitors. Convenience sampling procedures were employed. A survey table was positioned in a major traffic area in the casino. Survey participants received a small incentive. One thousand and seventy-eight questionnaires were administered during final data collection. Sixty-eight questionnaires were incomplete and were not used in the analysis leaving 1,010 questionnaires for the final data analysis. The convenience sample was representative of Las Vegas casino customers. Three variables were compared to the 1994 Las Vegas Visitors Profile Study (GLS, 1994). Forty-seven percent of the respondents in the current study were male and 53% were female. Fifty-two percent reported gambling budgets of \$400 or less. The mean gambling budget was \$643. Fifty-four percent reported gambling five or more hours a day. GLS reported 50% of respondents were female, average gambling budget \$479, and average time spent gambling was five hours a day. The participants in the present study were similar to participants in the 1994 GLS study, except respondents had

a higher average gambling budget in the present study. This difference may be attributable to the citywide intercept nature of the GLS survey. The present study did not include persons who avoided gambling activity. There were no significant differences between males and females and game choice based upon chi-squared tests ($p < .05$). No other demographic variables were measured in this study. Although the researchers do not consider this comparison to be evidence of generalizability, for purposes of theory construction and further investigation, the similarity is evidence of a relationship between the sample and the population.

Mean comparisons were made on the basis of game choice. Alpha was set at $p < .0001$ to adjust for the Type I Error rate in one-way ANOVA and to control experiment-wise error rates. The variable, which single game will you play most on this visit, was recoded to reflect the players' preference for mechanical games or table games. Respondents were directed to think about the game that they played most. The recoding resulted in 187 table game players and 719 slot players. An analysis of the individual means in the context of the research questions proposed in this study follows.

Results

The PAD Scale

The first research question asks what emotional tendencies are associated with gambling activity and are these emotional tendencies different for the game most frequently played. The PAD scale examines the emotional states of pleasure, arousal, and dominance. Overall, table game players seem to derive more pleasure from their play than slot players do. Table game players report being happier, more pleased, and more satisfied than slot players (see Table 2).

The second construct measured by the PAD scale is arousal. There were no significant differences between table game players and slot players on these variables. Significant levels of arousal were not an influence in play among the respondents. Table game players report being mildly aroused ($M = 3.34$, $SD = 1.53$) while the mean value for slot players was mildly unaroused ($M = 3.71$, $SD = 1.51$, see Table 2).

Table 2
PAD Scale: Mean Response Differences Between Mechanical Game Players and Table Game Players

Overall Mean Variable	Mechanical			Table			p-value		
	n	mean	±SD	n	mean	±SD	n	mean	±SD
Pleasure									
Pleased/Annoyed	881	4.17	1.31	693	4.08	1.31	188	4.50	1.26.0001*
Satisfied/Unsatisfied	883	3.14	1.38	695	3.26	2.68	188	2.68	1.17.0000*
Happy/Unhappy	892	2.68	1.25	705	2.75	1.27	187	2.40	1.12.0060
Relaxed/Bored	887	2.75	1.29	701	2.80	1.32	186	2.59	1.14.0527
Contented/Melancholic	870	4.27	1.17	683	4.23	1.17	87	4.39	1.18.1007
Arousal									
Aroused/Unaroused	859	3.64	1.52	673	3.71	1.51	186	3.34	1.53.0031
Wide Awake/Sleepy	887	4.56	1.34	699	4.54	1.33	188	4.65	1.37.2958
Jittery/Dull	869	3.39	1.22	384	3.39	1.22	185	3.38	1.23.9286
Dominance									
Controlling/Controlled	865	3.93	1.49	681	4.05	1.45	184	3.49	1.54.0000*
Influential/Influenced	858	3.85	1.34	674	3.95	1.31	184	3.74	1.30.0000*
In control/Cared for	878	4.08	1.30	692	4.06	1.28	186	4.16	1.33.3740
Important/Awed	862	3.68	1.26	678	3.68	1.26	184	3.70	1.28.8479

Note: These variables are scored on a 6-point semantic differential scale.

* $p \leq 0.0001$ level of significance, One-way ANOVA.

The third PAD construct measured dominance. Table game players report more control over their play while slot players report being controlled. Both, however, report being in control as opposed to being cared for. Table game players report feeling more influenced than slot players. Both report experiencing some sense of importance (see Table 2).

The sample population derived high levels of pleasure from playing casino games. It does not appear that they experience consistently high levels of arousal or a sense of dominance as indicated in the literature. Table game players experience more pleasure and a somewhat higher though mild level of arousal and control.

The Sensation Seeking Impulsivity Scale

The second research question asks what sensation seeking tendencies are associated with gambling activity and are these sensation seeking tendencies different for the game most frequently played. Eight variables measuring sensation seeking comprise the final data collection instrument. Differences between mean response rates for table game players and slot players did not reach significance on the sensation seeking or impulsivity variables. Table game players are more likely to participate in activities they know are frightening ($M = 3.88$, $SD 1.40$). Both groups indicate a tendency to try something once even if it might be a little frightening ($M = 4.16$, $SD 1.20$). It appears that respondents are somewhat conservative, methodical, and tend to think things through (see Table 3).

Table 3
Sensation/Impulsivity Scale: Mean Response Differences Between Mechanical Game Players and Table Game Players

Variable	Overall Mean			Mechanical			Table		p-value	
	n	mean	±SD	n	mean	±SD	n	±SD		
Carried Away	903	2.88	1.42	717	2.95	1.43	186	2.60	1.35	.0027
Do Frightening Things	903	3.60	1.40	715	3.53	1.40	188	3.88	1.40	.0025
Impulsive Person	903	3.20	1.45	718	3.24	1.45	185	3.04	1.46	.1037
Frightening New Experiences	901	4.16	1.20	714	4.14	1.20	87	4.26	1.91	.2154
Unpredictable New Situations	902	3.50	1.32	714	3.48	1.32	188	3.88	1.40	.3402
Things for Thrill	887	3.90	1.31	704	3.88	1.30	183	3.97	1.36	.4201
Do on Impulse	906	3.71	1.41	719	3.73	1.41	187	3.65	1.42	.5254
Plan Jobs	904	4.55	1.22	718	4.55	1.21	186	4.53	1.26	.8063

Note: These variables are scored on a 6-point Likert scale.

1 = very strongly disagree, 2 = disagree, 3 = somewhat disagree,

4 = somewhat agree, 5 = agree, and 6 = very strongly agree.

* $p \leq 0.0001$ level of significance, One-way ANOVA.

The Absorbing Experience Scale

The third research question examines which absorbing experience tendencies are associated with gambling activity and if these absorbing experience tendencies differ for the game most frequently played. The variables measure the spectrum of engagement from active to passive. Table game players indicate greater engagement in terms of being absorbed in and actively participating in play. Slot players are less involved and tend to experience an escape from problems (see Table 4).

Table 4
Absorbing Experience Scale: Mean Response Differences Between Mechanical Game Players and Table Game Players

Variable	Overall Mean			Mechanical			Table			p-value
	n	mean	±SD	n	mean	±SD	n	mean	±SD	
Always Alert	908	3.35	1.47	720	3.23	1.46	188	3.79	1.43	.0000*
Detached	902	3.50	1.30	715	3.59	1.29	87	3.18	1.30	.0001*
Striving to Improve	905	3.36	1.47	717	3.25	1.47	188	3.74	1.39	.0000*
Deeply Involved	904	3.22	1.49	716	3.14	1.48	188	3.54	1.50	.0010
Not Involved	824	2.62	1.31	653	2.70	1.32	171	2.32	1.24	.0018
Competitiveness	906	3.70	1.46	719	3.61	1.48	187	4.03	1.34	.0004
Away From Problems	888	3.83	1.40	701	3.90	1.38	187	3.59	1.45	.0071
Power	898	3.81	1.33	711	3.75	1.33	187	4.01	1.30	.0218
Physical Stamina	899	2.72	1.42	713	2.67	1.41	186	2.91	1.41	.0345
Adventure	907	4.11	1.17	720	4.10	1.16	187	4.17	1.21	.4503

Note: These variables are scored on a 6-point Likert scale.

1 = very strongly disagree, 2 = disagree, 3 = somewhat disagree, 4 = somewhat agree, 5 = agree, and 6 = very strongly agree.

* $p \leq 0.0001$ level of significance, One-way ANOVA.

The Analytical Scale

The fourth research question investigates the analytical tendencies associated with gambling activity and if these analytical tendencies differ for the game most frequently played. Seven variables are included on the final survey to measure analytical tendencies. Table game players are significantly more inclined to study the game and keep track of odds. Both classes of player indicate they quit when losing ($M=4.22$, SD 1.38) and are careful not to overspend ($M = 4.56$, SD 1.33, see Table 5).

Table 5
Analytical Scale: Mean Response Differences Between Mechanical Game Players and Table Game Players

Variable	Overall Mean			Mechanical			Table			p-value
	n	mean	±SD	n	mean	±SD	n	mean	±SD	
Read Books	900	2.47	1.60	714	2.28	1.50	186	3.16	1.74	.0000*
Study Rules	901	3.35	1.65	713	3.15	1.61	188	4.11	1.61	.0000*
Track Odds	903	3.30	1.67	716	3.12	1.63	187	4.01	1.63	.2200
Limit Time	904	3.84	1.51	717	3.89	1.50	187	3.61	1.53	.0217
Keep Track	901	2.71	1.54	714	2.68	1.53	187	2.83	1.58	.2200
Careful Not to Overspend	899	4.56	1.33	13	4.59	1.31	186	4.47	1.38	.2834
Quit When Not Winning	902	4.22	1.38	714	4.21	1.37	188	4.25	1.42	.7692

Note: These variables are scored on a 6-point Likert scale.

1 = very strongly disagree, 2 = disagree, 3 = somewhat disagree, 4 = somewhat agree, 5 = agree, and 6 = very strongly agree.

* $p \leq 0.0001$ level of significance, One-way ANOVA.

Discussion

The findings of this study further develop the theory of hedonic consumption and apply the theory in a gambling context. There are significant differences and similarities between table game players and slot players. Both classes derive pleasure from the pursuit of gambling. This finding supports the conclusions of Abt et al. (1985), Anderson and Brown (1984), and Kallick et al. (1979). Abt et al. (1985), Anderson and Brown (1984), and Kallick, et al. (1979) reported fun and pleasure as predominant motivators for gambling participation.

The respondents confirmed that satisfying experiences of competence and self-determination identified by Deci (1975) were part of the gambling experience. Contrary to previous research, money did not lose its significance as postulated by Kusyszyn (1977). Respondents in the present study quit when losing and report being in control as opposed to cared for. Respondents appear to have a price they are willing to pay for their gambling experience.

Csikszentmihalyi (1976) identified six characteristics of play and Kusyszyn (1977) extended this theory to gambling. Play participants became absorbed, used expertise, forgot their problems, experienced a loss of identity, gained a sense of control, and were able to transcend ego boundaries. This finding supports play theory through active involvement in the activity. Respondents reported a mildly positive experience of absorption in the gambling activity. Table game players were more analytical in terms of becoming experts. Respondents reported mild problem avoidance while playing. The majority of respondents reported a sense of control.

Abt et al. (1985) postulated that gambling behaviors were motivated by gambler-initiated behaviors, interactional behaviors (a combination of gambler behaviors and game generated behaviors), and game characteristics. Table game players and slot players differ in terms of their respective experiences and their extent of involvement with the games. This classification schema is open to interpretation. Table game players appear to have a more interactional style with the games they play as supported by their analytical approach. The question dealing with whether slot players are motivated at the player or game end of the spectrum remains to be answered.

Table game players and slot players differ in terms of their respective experiences and their extent of involvement with the games

Implications and Conclusions

Gambling is a fun filled activity for many participants. Table game players are more deeply involved and tend to be more aware of the intricacies of the games than slot players. Table game players are not as impulsive and tend to be more controlled than slot players. The overwhelming majority of table game players and mechanical game players report discipline in terms of their gambling spending. Hedonic consumption theory is useful for explaining intrinsic motivators of gambling behavior.

The value of the present study lies in illuminating the game choice process. A central question not answered in the study is whether game choice is a function of the player or the game. This is relevant as new machines and tables games are being developed and new technologies explored. The importance of this question to casino marketers has implications for new generations of casino gamblers who are technologically more sophisticated than their parents and whose expectations may be different. Before a casino invests in expensive new game technologies, there must be some assurance the new games will be utilized.

The present study may impact casino layout decisions. Mechanical game players in this study are only mildly impulsive. This has several implications for slot selection and lay out. The finding suggests casinos can reduce the investment in expensive slot technology in terms of variety of machines offered and number of machines available without negatively impacting profits and customer satisfaction. These decisions must be closely tied to demand.

As with any study there are limitations. The convenience nature of the sampling procedures makes it difficult to generalize to the gambling population. The data collection was conducted between 8:00 a.m. and 5:00 p.m. because of site-imposed restrictions. Therefore, representation of all possible participants is not reflected.

Future research should focus on the relationship between absorbing experiences and analytical aspects of mechanical game choice. Chip technology enables numerous games to be played at a single machine. The following questions are presented for consideration in future research.

1. How do players differ demographically in terms of their choice of mechanical games? Will the insights provided by answers to this question illuminate the future in terms of game preference? Kallick, et al. (1979) indicated that an individual would continue playing the game to which they were initially exposed. How do new technologies impact this assumption?
2. Are there differences between a local market population and a tourist market population?
3. Do "High Rollers" differ from other members of the gambling population in terms of their experiences of gambling? Brewer and Cummings (1995) suggest the experience of a \$25 slot player differs from a nickel player. While this assumption may be intuitively sound it may not be empirically defensible.
4. What is the relationship between convenience gambling markets and pleasure gambling markets? Does convenience gambling add to or detract from the customer base of pleasure markets?
5. Does winning or losing impact future participation decisions and if so to what degree?

The Hedonic Consumption Paradigm is supported in the present work. The majority of work examining gambling has been conducted in a laboratory setting. This study was conducted in an operating casino catering to tourists. The proliferation of gambling necessitates the development of comprehensive gambling theory. This study lays part of that foundation.

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