A champagne lifestyle on a beer income:

More personality predictors of fiscal irresponsibility.

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Abstract

Using self-report data (N=348), we investigate whether Fiscal Irresponsibility is correlated with the personality variables of Deferred-Gratification, Impulsivity, Risk-Taking, Self-Regulation and Consideration of Future Consequences. A new Fiscal Irresponsibility scale was developed using exploratory and confirmatory factor analysis. The scale was shown to consist of two underlying factors interpreted as “irresponsible spending” and “financial planning” that were adequately accounted for by a global Fiscal Irresponsibility factor. Next, an iterative series of stepwise regressions, with Fiscal Irresponsibility, as the dependent variable were estimated using Structural Equation Modeling in Mplus 6.0. Each of the variables were significantly correlated (ranging from $r = 0.354$ – $r = 0.850$) with Fiscal Irresponsibility. Deferred-Gratification showed the largest correlation with Fiscal Irresponsibility (69.6% shared variance), whilst the combination of Deferred-Gratification and Self-Regulation accounted for the largest proportion of variance in Fiscal Irresponsibility (76.6%). These findings add to the growing body of evidence suggesting that the expression and suppression of impulses is implicated in irresponsible financial behavior.

Keywords: Deferred-Gratification, Impulsivity, Self-Regulation, Fiscal Irresponsibility, Mplus
1.0 Introduction

“Far too many people aspire to a champagne lifestyle on a beer income.”

(Brian Walden, former Labour MP)

Explanations of individual level financial behavior have until recently focused upon factors external to the individual. For instance, Elliot (2005) argues that the gradual relaxation of credit constraints has created an environment for irresponsible borrowing, whilst Watson (2003) suggests that increasing levels of borrowing and consumption are a result of materialistic trends. Economic and social climates often provide the environment, within which most individuals operate and as such have general influence over behavior; however, individuals exhibit variation in financial behavior regardless of economic and social trends. Indeed, all persons may be less frugal when economic conditions are positive and more frugal when they are not. However, individuals still differ in their degree of frugality or indeed in any other form of financial behavior: Such variation points to the likelihood that some underlying individual differences influence financial behavior (Furnham & Argyle, 1998).

There is now a growing body of research evidence suggesting that these decisions are influenced by a combination of personality characteristics (e.g. Hughes, Irwing, Booth, Shawcross & Portelli, 2011, Wang, Lu & Maholta, 2011).

In the current study, we seek to explore the personality predictors of financially irresponsible behavior. Fiscal Irresponsibility is thought to manifest itself behaviorally in inadequate financial planning and saving, reckless consumption and a lack of financial awareness that ultimately results in the accumulation of unmanageable debt. Such irresponsible financial behavior is associated with both macro (e.g. decreased gross domestic product; May, Tudela & Young, 2004) and micro-economic problems (e.g. financial hardship; Valins, 2004). This is no more evident than in the latest estimates of personal indebtedness
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within the UK. As of March 2011, total personal debt stood at £1,453 billion. Average household debt in the UK is £29,843 or 128% of average annual earnings, whilst the average level of unsecured debt is £8,144. This figure increases to £15,661 when the average is based only on households who have unsecured credit (Credit Action, 2011). These figures illustrate the astonishingly high levels of personal indebtedness in the UK. Alongside financial hardship, sustained indebtedness can result in decreased well-being (Brown, Taylor & Price, 2005), self-esteem (Dawson, 2003) and mental and physical health (Valins, 2004). The astonishingly high levels of personal indebtedness in the UK and the resultant consequences highlight the need to understand the antecedents of the individual fiscally irresponsible behavior.

Some previous research has focused attention on identification of the antecedents of the ‘darker side’ of consumer behavior (Hirschman, 1991). However, there remains little consensus in the field regarding the variables that regulate financially irresponsible behavior. The current absence of a definitive model provides the impetus for the current research.

The current study focuses on Impulsivity, Deferred-Gratification, Risk-Taking, Self-Regulation and Consideration of Future Consequences as antecedents of Fiscal Irresponsibility. These constructs have been shown to have well established associations with irresponsible behaviors, such as gambling (e.g. Parke, Griffiths & Irwing, 2004), risky driving styles (e.g. Caspi, et al., 1997) and irresponsible financial behavior (e.g. Hughes, et al., 2011).

Impulsivity has been found to play a significant role in several aspects of financial behavior. Empirical studies have reported negative relationships with money management (Baumeister, 2002), money retention (Hayhoe, Leach & Turner, 1999) and saving for future outcomes (Wärneryd, 1995). Whilst positive correlations have been observed between Impulsivity and compulsive buying (e.g. Billieux, Rochat, Rebetez & Van Der Linden, 2008),
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credit card misuse (e.g. Pirog III & Roberts, 2007; Wang, et al., 2011) and credit card debt (Mansfield, Pinto & Parente, 2003). Moreover, Impulsivity has been implicated in the decision to take out a credit card in the first place, often to receive a free gift or special offer (Bianco & Bosco, 2002). Further, Impulsivity was shown to be a key predictor of self-reported Fiscal Irresponsibility, accounting for over 50% of the variance in two European samples (Hughes et al., 2011).

Deferred-Gratification, defined by the extent to which one is able to “wait for a more appropriate time and place to engage in a tempting act or obtain a desired object” (Beck, 2003, p.504) is closely related to Impulsivity (e.g. Ainslie, 1992). Indeed, Deferred-Gratification is often considered a sub-facet of general impulsivity (e.g. Ainslie, 1992) and experimental measures of deferred-gratification have been used as proxies for impulsivity (e.g. Cherek, Moeller, Dougherty & Rhoades, 1997). A recent meta-analysis has shown experimental measures of delay-of-gratification to be significantly correlated with self-reported ($r = .15$) and informant reported ($r = .21$) impulse control (Duckworth & Kern, 2011).

Deferred-Gratification was previously shown, in two European samples, to account for significant variance (29.6 and 85%) in Fiscal Irresponsibility (Hughes et al., 2011). Further, Deferred-Gratification has been implicated in consumers’ underestimation of future borrowing: in that individuals lower in Deferred-Gratification tend to borrow on credit cards despite initial intentions not to (Bar-gill, 2004). Bar-gill’s findings highlight the phenomenon that despite best intentions, individuals who are unable to defer gratification often get ‘sucked in’ to the buy now, pay later mentality. This supposition is further supported by the finding that Deferred-Gratification considered alongside non-dispositional predictors such as “financial knowledge” and “number of credit cards” has been identified as a significant predictor of credit card debt (Norvilitis, Merwin, Osberg, Roehling, Young & Kamas, 2006).
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Given the link between Deferred-Gratification and Impulsivity, and the subsequent link between those traits and the uptake of credit (Bianco & Bosco, 2002), underestimation of future borrowing (Bar-gill, 2004), higher debt (Norvilitis et al., 2006; Mansfield et al., 2003) and lack of financial planning (Wärneryd, 1995), it appears likely that individuals' high in Impulsivity, who fail to Defer-Gratification will behave in a fiscally irresponsible manner: accruing debts whilst neglecting savings.

Another trait related to impulse-control, hypothesized to impact upon Fiscal Irresponsibility is Self-Regulation which is generally defined as the ability to control, modify, and adapt one’s emotions, impulses or desires (Murtagh & Todd, 2004). Those who score highly on measures of compulsive buying report having irresistible urges to buy and a sense of lost control over their consumption, continuing to buy in spite of adverse consequences to their financial well-being, mental health, and personal relationships (Dittmar, 2004; O'Guinn & Faber, 1989). Indeed, as Rose (2007, p576) argues “compulsive buying is fundamentally a self-regulatory problem.” In accordance with such views, individuals in debt have also been found to display lower levels of self-control over their finances (Livingstone & Lunt, 1992). Vohs and Faber (2007) conducted three studies that considered the effect of impulsive spending on self-regulatory resources, the results of which imply that reduced regulatory resources can lead to increased levels of impulsive spending. This suggests that managing spending and saving habits requires significant, voluntary Self-Regulation, whilst an inability or unwillingness to self-regulate emotions and impulses may result in the expression of fiscally irresponsible behavior.

The fourth trait proposed as a potential predictor of fiscal irresponsibility is that of Risk-Taking. Risk-taking has received much research attention from psychologists and has been found to influence a wide range of irresponsible behaviors including, drug use (Cherpitel, 1999), risky sexual activities (Yeh, 2002), as well as financial behavior (Grable,
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2000). Financial risk tolerance is described as “the maximum amount of uncertainty that someone is willing to accept when making a financial decision” (Grable, 2000, p. 625). Individuals who are found to be risk-averse have been suggested to have a greater tendency to save, to engage in higher levels of financial planning, and to show greater interest in financial matters (Fank, 1994). It was also observed that those with risk-seeking tendencies had lower self-control over their credit card spending (Adams & Moore, 2007). Furthermore it has been found that low risk-takers tend to have a lower burden of debt and more money in the bank than more risk-oriented individuals (Dahlback, 1991).

The final trait proposed to influence Fiscal Irresponsibility in the current study is Consideration of Future Consequences. Individual differences in Consideration of Future Consequences reflect “the extent to which people consider the potential distant outcomes of their current behaviours and the extent to which they are influenced by these potential outcomes” (Strathman, Gleicher, Boninger, & Edwards, 1994, p.743). Research suggests that those who score highly in Consideration of Future Consequences have a tendency to act responsibly across a variety of domains such as environmental behavior (Lindsay & Strathman, 1997) and practicing safe sex (Dorr, Krueckeberg, Strathman, & Wood, 1999). Consideration of Future Consequences has previously been associated with financial decision-making: Joireman, Sprott and Spangenberg (2005) found that lower levels of Consideration of Future Consequences were associated with higher cognitive impulsive buying tendencies and that when faced with a hypothetical choice of investment options, those lower in Consideration of Future Consequences were more inclined to direct investment toward a purchase rather than savings. Further, Joireman, Kees and Sprott (2010) showed Consideration of Future Consequences to be correlated with indebted students' compulsive buying tendencies ($\beta = .34, p < .01$) and credit card debt ($\beta = .36, p < .01$).

Given the current review of the available literature, we hypothesize that personality
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Characteristics will explain significant proportions of variance in Fiscal Irresponsibility. More specifically, higher scores on the Fiscal Irresponsibility scale will be related to low scores on Deferred-Gratification, Self-Regulation and Consideration of Future Consequences, and high scores on Impulsivity and Risk-Taking.

2.0 Method

2.1 Participants

A general population sample numbering 348 (166 males, 47.2%; 181 females, 53.8%) was gathered using snowball sampling. Participants' ages ranged from 18 to 76 ($M = 30.52$, $SD = 22$). Ninety-three (26.8%) participants were educated until the age of 16, 46 (13.2%) had undertaken non-university further education, whilst 209 (60.1%) had received university level education. In all, 228 (65%) participants were employed (full-time, part-time or self employed), 107 (31.3%) were students, 9 (2.7%) were unemployed and 3 were retired (1%). In relation to UK population estimates, the sample contains more females, is slightly younger (average UK age 39.5) and better educated (across population, 29% have degrees).

2.2 Measures

Five existing personality scales, a newly developed scale measuring Fiscal Irresponsibility and demographic questions concerning age, sex, education, and employment status were collated into a single online questionnaire. Online measures have been shown to attract samples that are diverse with regard to age, gender, geographic region and socio-economic status (Gosling, Vazire, Srivasta & John, 2004, p102). With the exception of Deferred-Gratification, all scales used a common response format with individuals choosing from five options: Very Inaccurate’, ‘Moderately Inaccurate’, ‘Neither Inaccurate nor Accurate’, ‘Moderately Accurate’ and ‘Very Accurate’.

Fiscal Irresponsibility, was measured using a newly developed scale. A review of 27 questions derived from two previous Fiscal Irresponsibility scales (Hughes et al., 2011) was
conducted. Nine items were selected from this pool based on the magnitude of factor loadings and to ensure adequate sampling of the domain. A further five items were created to ensure breadth of content. Thus, a total of 14 items were used in order to form the current Fiscal Irresponsibility scale (see Table 1).

*Deferred-Gratification,* was measured using Ray and Najman’s (1986) Deferment of Gratification Scale (DGS). This self-report measure consists of twelve items which measure the respondent’s tendency to delay gratification. Example items include: “Do you enjoy a thing all the more because you have had to wait for it and plan for it?” The Deferred-Gratification scale used three response options: ‘Yes’, ‘No’ or ‘Unsure’ (scored one for yes, two for unsure and three for no). Ray and Najman (1986) report an alpha reliability of 0.72 for the DGS.

*Risk-taking,* was measured using the International Personality Item Pool (IPIP; Goldberg, 1999) scale of Risk-taking Behavior which was developed to be similar to that in the Jackson Personality Inventory [JPI-R] (Jackson, 1994). This instrument consists of ten items, each assessing individuals’ propensity towards taking risks, which is reflected in items such as ‘I take risks’ and ‘I would never make a high risk investment’. Goldberg (1999) reports a Cronbach’s alpha of 0.78.

*Impulsivity,* was assessed using the IPIP (Goldberg, 1999) scale of Impulse control. This instrument consists of ten items, each assessing individuals’ preparedness to control their impulses. An example item from this scale is ‘I easily resist temptations’. A Cronbach’s alpha value of 0.78 was reported by Goldberg, for this scale (1999).

*Self-regulation,* was also measured using a scale developed from the IPIP (Goldberg, 1999). The Self-Regulation Scale is composed of ten items, such as ‘I can always say 'enough is enough". For this scale, Goldberg (1999) reported an acceptable internal consistency coefficient of 0.75.
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Consideration of future consequences, is a relatively new construct and there is currently only one available measure devised by Strathman et al., (1994). This 12-item scale consists of general statements regarding a person’s orientation towards likely future consequences, for example “I only act to satisfy immediate concerns, figuring the future will take care of itself.” The scale possess good convergent validity. For instance, individuals who score highly on the Consideration of Future Consequences scale also score highly on General Future Time Orientation and Delay of Gratification (Strathman et al., 1994). The authors report Cronbach’s alphas of between .80 and .85 for the scale (Strathman et al., 1994).

2.3 Missing data

Missing data accounted for 3.7% of responses. The utilization of techniques such as list-wise deletion or mean replacement to address all cases of missing data can lead to a significant reduction in sample and underestimated or spuriously inflated correlations respectively (Schafer & Graham, 2002). Thus, missing responses were imputed using the expectation-maximization method of estimation within SPSS 16 (Schafer & Graham, 2002).

3.0 Results

To assess the relationship between Personality and Fiscal Irresponsibility, we first sought to identify reliable structures for each of the variables. Using the identified structures, we proceeded to build regression models between the personality variables and Fiscal Irresponsibility, in a stepwise fashion. All analyses were conducted using Mplus 6.0 (Muthen & Muthen, 2010).

3.1 Exploratory Factor Analysis (EFA)

First, an exploratory factor analysis (EFA) was conducted on the fourteen Fiscal Irresponsibility items using the Weighted Least Squares Means and Variances (WLSMV) method of estimation. Commonly, Likert-type data are considered close approximations to
continuous measurement and analyzed using maximum likelihood. In reality however, Likert-type data is ordinal and as such is theoretically suited to WLSMV which makes no assumptions regarding distribution or levels of measurement (Browne, 1974). It was expected that should multiple factors be identified, they would be correlated and that factor indicators may meaningfully cross load. Thus, the oblique Geomin rotation was selected as it has been shown to perform well in such instances (Muthen & Muthen, 2010, p.537).

The EFA revealed Fiscal Irresponsibility to consist of two factors correlated at -.56 (p<.001). We interpret the first factor as being concerned with irresponsible spending as indicated by the highest loading items: “I sometimes buy things I can't really afford” and “I often spend money now and worry about the consequences later”. The second factor was interpreted as indicating the extent of financial planning and saving since it was loaded most highly by the items “I make plans to ensure I will have enough money in the future” and “When it comes to my finances I plan for the future”. The solution accounted for 59% of the total variance and retained 13 of the 14 items, with item 5 being removed due to its loading below 0.3.

3.2 Confirmatory Factor Analysis (CFA)

Next, confirmatory factor analyses (CFA) were conducted to test the adequacy of the exploratory Fiscal Irresponsibility structure and author proposed single factor solutions, for the personality scales. Item level models were estimated using WLSMV.

When assessing model fit, three of the more accurate and reliable fit indices (Hu & Bentler 1998, 1999) were consulted, namely, the Root Mean Square Error of Approximation (RMSEA), the Comparative Fit Index (CFI) and the Tucker-Lewis Index (TLI). The Standardized Root Mean Square Residual (SRMR) was also examined, in the case when parcels comprised the indicators. The SRMR is only calculable with continuous data; and parceled indicators provide more scale points and thus more closely approximate continuous
data (Coffman, & MacCallum, 2005). Models were considered to adequately approximate the data at values of $\leq .08$ for the SRMR (Spence, 1997) and the RMSEA (Browne & Cudeck, 1993), and $\geq .90$ for the CFI and TLI, (Bentler & Bonnett, 1980) with values above .95 preferred (Hu and Bentler, 1999).

A CFA examining the fit of the two factor structure of Financial Irresponsibility derived from EFA was estimated. The model provided adequate fit to the data ($\chi^2 = 235.48$, $df = 62$, CFI = .956, TLI = .954, RMSEA = .090). The correlation between the two latent factors of Fiscal Irresponsibility was estimated at -0.883 and so it was decided to test a single factor model of Fiscal Irresponsibility. The initial single factor model showed slightly worsened fit ($\chi^2 = 302.26$, $df = 54$, CFI = .918, TLI = .900, RMSEA = .106). The modification indices suggested that the inclusion of two correlated error terms (item 9 with 13 and item 3 with 6) would improve the level of fit. When these correlated error terms were included, the single factor model achieved acceptable levels of fit ($\chi^2 = 218.16$, $df = 52$, CFI = .956, TLI = .954, RMSEA = .079). Thus, based on the high correlation between the two Fiscal Irresponsibility factors and model parsimony, the single Fiscal Irresponsibility factor was used in all subsequent analyses.

[Insert Table 1 about here]

**Personality:** Five of the personality items (Deferred-Gratification items 1, 3, 5, 9 and Self-Regulation item 9) had content related specifically to financial behavior (e.g. “Are you good at saving money rather than spending it straight away?”). The inclusion of such items may thus have biased the estimates of the correlations between predictor and outcome variables, consequently these items were removed. Next, Deferred-Gratification, Impulse Control, Risk-Taking, Self-Regulation, and Consideration of Future Consequences were each subject to individual, item level CFAs that aimed to test single factor structures. As can be seen from the results in Table 2, all models achieved poor fit. Nine items (Deferred-
Gratification items 8, 11; Risk-Taking items 3, 6, 7, 10; Self-Regulation items 1; Consideration of Future Consequences items 5, 12) were observed to load at below the conventionally acceptable level of 0.4. These items were removed and the models re-estimated. All the revised scales showed increased and acceptable levels of model fit.

[Insert Table 2 about here]

3.3 The Measurement Model

Next, item parcels were created for each variable. Items were parcelled based on the procedure recommended by Little, Cunningham, Shahar and Widaman (2002). A minimum of three parcels per factor were created, satisfying the minimum requirement for model identification and ensuring that the ratio of known to be identified and unknown parameters was great enough that unique values could be estimated for the unknown parameters (Bollen, 1989, p. 88–89). All analyses using parcelled variables were conducted using Maximum-Likelihood estimation since the use of item parcels provides an approximation to continuous measurement.

In order to assess the appropriateness of the parcels, a measurement model was estimated which included all of the personality variables and Fiscal Irresponsibility. The initial measurement model showed poor fit ($X^2 = 742.23, df = 173, CFI = .885, TLI = .841, RMSEA = .098, SRMR = .076$). The Mplus solution indicated a strong dependency between two of the latent variables, namely Impulse Control and Self-Regulation ($r = 0.916$). Also, several large modification indices (ranging from 29.1 – 44.7) were related to each of the three Impulse Control parcels. It was concluded that Impulse Control and Self-regulation are measures of an identical construct. Consequently, we chose to remove the measure of Impulse Control from the measurement model given. Further, a single item parcel was removed from the Consideration of Future Consequences latent variables since its loading was below 0.4. Following the removal of the problematic parcels and after the inclusion of
three within factor correlated error terms, the measurement model demonstrated adequate fit ($X^2 = 201.23$, $df = 108$, CFI = .951, TLI = .937, RMSEA = .068, SRMR = .055).

### 3.4 Correlational Analysis

Next, Fiscal Irresponsibility was analyzed in terms of its correlations with each of the latent variables. All correlations are shown in Table 3. As can be seen from Table 3, each of the personality variables was significantly correlated with both the global Fiscal Irresponsibility factor and its sub-facets and also with each other. Deferred-Gratification has the largest correlation with overall Fiscal Irresponsibility and Irresponsible Spending, whilst Consideration of Future Consequences has the largest correlation with Financial Planning.

[Insert Table 3 about here]

### 3.5 Stepwise regression models using Structural Equation Modeling

Finally, an iterative series of stepwise regressions in SEM, based on the revised measurement model were estimated. Each variable was regressed individually against Fiscal Irresponsibility. Each of the personality variables accounted for a significant proportion of the variance in Fiscal Irresponsibility (ranging from 9.5 to 69.6%), with Deferred-Gratification showing the strongest correlation (see Table 4, models A-D). Deferred-Gratification was included in a series of regression models in which it was paired successively with each of the remaining personality factors. Self-Regulation was the only personality variable to account for significant variance over and above Deferred-Gratification (see Table 4, Model F). A series of further models were tested incorporating the demographic variables of age, sex, employment status and educational attainment, none of which accounted for further significant variance. The final model, as displayed in Figure 1, explained 76.6% of the variance in Fiscal irresponsibility and represented good fit (see Table 4, Model F).

[Insert Table 4 about here]
5.0 Discussion

The principal aim of this study was to investigate whether the personality variables of Impulse Control, Deferred-Gratification, Risk-Taking, Self-Regulation and Consideration of Future Consequences were correlated with Fiscal Irresponsibility. Each of the personality variables accounted for significant variance (ranging from 9.5-69.6%, see Table 4, models A-D). The model which accounted for the greatest proportion of unique variance (76.6%) consisted of Deferred-Gratification and Self-Regulation (Table 4, Model F). The results reveal Fiscal Irresponsibility to be closely related to personality and adds to the growing body of evidence that has revealed the importance of personality characteristics related to regulatory control that allow for the ability to wait in order to fulfill a desire in the governance of consumers' financial responsibility. The second aim of the study was to investigate the psychometric and structural properties of the newly developed Fiscal Irresponsibility scale.

5.1 Fiscal Irresponsibility

Fourteen items derived from a total pool of 27 identified during the construction of two previous Fiscal Irresponsibility scales (Hughes, et al., 2011) were chosen to create the current Fiscal Irresponsibility scale. Exploratory factor analysis revealed the scale to consist of two factors: one concerned with irresponsible spending and the second with financial planning. Confirmatory Factor analyses showed the two-factor solution to be robust and each of the scales to be reliable (.91-.96). Further, CFA revealed both scales to be adequately represented by a single, global Fiscal Irresponsibility factor. These analyses show considerable overlap with the results obtained by Hughes et al. (2011) in a cross-cultural study of personality and Fiscal Irresponsibility. The results reveal Fiscal Irresponsibility to be a substantive and measurable individual difference which is substantially correlated with
personality. The psychometric properties of the fiscal irresponsibility scale (large balanced factor loadings, high reliabilities and good fitting CFA) suggest its utility for future research. However, further research may also seek to confirm these properties in larger, more population representative samples, and to investigate relationships with objective measures of financial behaviour, such as consumers’ levels of debt and savings.

5.2 Personality Variables

Deferred-Gratification was shown to be negatively related to Fiscal Irresponsibility ($r = -0.85$) and of all of the variables examined, accounted for the largest proportion of variance (69.6%). This result replicates previous work that links Deferred-Gratification to financial behavior and as such contributes to the growing body of evidence that reveals the importance of delaying gratification in facilitating responsible consumption at the individual level (e.g. Bar-gill, 2004; Norvilitis et al., 2006; Hughes et al., 2011; Wang et al., 2011).

The second most influential personality variable was Self-Regulation which was the only variable examined that accounted for significant variance beyond that accounted for by Deferred-Gratification. This relationship again shows Fiscal Irresponsibility to be associated with the ability and, or willingness to control impulses (Murtagh & Todd, 2004). This supposition is further supported when we consider that Self-Regulation was shown to be very closely related to the Impulse Control scale ($r = .916$). Future research concerning irresponsible consumer behavior might benefit by considering the expression and suppression of impulses as distinct processes (e.g. Duckworth & Kern, 2011). Measures of which might offer differential predictive validity.

The current findings provide evidence of multicollinearity between the measures of Impulse Control, Self-Regulation, Deferred-Gratification and Consideration of Future Consequences. Firstly, Impulse Control was removed from the analysis as it was deemed to be identical to Self-Regulation due to a linear dependency ($r = .916$). Secondly, the factor
indicators of Impulse Control showed significant cross loadings with the indicators of each of the other constructs (average modification index = 37.3). Finally, in the regression analyses only Deferred-Gratification and Self-Regulation explained unique variance in Fiscal Irresponsibility. In totality, the results indicate significant overlap in the item content and predictive validity of each of the constructs, and further emphasize the importance of research which looks to differentiate the varying aspects of Impulsivity and personality traits relating to impulse control (e.g. Duckworth & Kern, 2011).

The measure of Self-Regulation used here has a single factor structure, yet the Self-Regulation construct can be broken down into two sub-categories of emotion and cognitive regulation. Emotion regulation relates to the control of affect, whilst cognitive regulation relates to the control of thoughts and actions responsible for planning and the ability to weight reward and make hypothetical decisions (e.g. Magar, Phillips & Hosie, 2008). The distinction between these two sub-facets of Self-Regulation may prove fruitful when attempting to understand financial behavior. For example, cognitive regulation might be more involved in financial planning, whereas emotion regulation may be more closely related to emotive, fiscally irresponsible behaviors such as impulsive/compulsive spending.

Neither Consideration of Future Consequences nor Risk-Taking accounted for significant variance when considered alongside Deferred-Gratification and Self-Regulation, yet both were significantly correlated with Fiscal Irresponsibility. Indeed, within the individual regression models Consideration of Future Consequences was shown to account for the second largest proportion of variance in Fiscal Irresponsibility (45.4%, Table 4 Model D). When considered alongside the Fiscal Irresponsibility sub-facets, Consideration of Future Consequences shows a larger correlation with Financial Planning ($r = -.782$) than with Irresponsible spending ($r = -.599$, see Table 3). This finding is not entirely surprising given that those high in Consideration of Future Consequences will place emphasis on the long-
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term outcomes of current behavior and are thus, likely to engage in financial planning and commit to saving. The present research contributes to a growing body of empirical research relating Consideration of Future Consequences to a variety of consumer behaviors and financial outcomes such as impulsive and compulsive buying tendencies (Joireman et al., 2005; 2010) and students' self-reported credit card debt (Joireman et al., 2010).

Of all of the variables examined, Risk-Taking demonstrated the weakest relationship with Fiscal Irresponsibility (r = 0.354; p<0.001). Previous research has reported similar small effects on Fiscal Irresponsibility (Hughes et al., 2011) and other everyday financial matters (Wong & Carducci, 1991), including, financial planning (Fank, 1994), high-risk credit behavior (Adams & Moore, 2007) and debt accumulation (Dahlback, 1991). Thus, Risk-Taking can be considered a correlate of irresponsible financial behavior, but not a key antecedent of Fiscal Irresponsibility.

When interpreting the observed relationships it must be considered that the use of self-report measures for both the predictor and outcome variables may have resulted in method bias, serving to inflate model parameter estimates. The magnitude of the correlations observed here and and the consistency between these and previous research (Hughes, et al., 2011) however would suggest, that the relationships are reliable and meaningful. Nevertheless, to counteract the effects of method bias, future research should aim to collect objective measures of Fiscal Irresponsibility.

5.3 Implications

The models produced and the relationships observed are of relevance to several practical domains. For instance, personality scales that assess the ability and/or willingness to defer-gratification, resist impulses, consider future outcomes of current behavior and self-regulate can be used as screening devices to identify consumers who are more likely to behave in a fiscally irresponsible manor. The ability to identify at risk consumers offers
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several further applications. First, financial educators may use this information to aid the
design of educational materials and strategies to improve impulse control. Further, within
education sessions, participants' responses may be used to help increase clients' self-
awareness, which will hopefully result in better impulse control and more responsible and
sustainable financial behavior.

The results also have implications for relationships between consumers and financial
institution. Since the economic downturn, increasing scrutiny has been placed upon
irresponsible financial behavior. The spotlight has focused upon irresponsible lending at the
institutional level and irresponsible borrowing and spending at consumer level. There is now,
a consensus that irresponsible, unsustainable financial behavior must be replaced by
responsible and sustainable financial strategies. Financial institutions are now applying more
stringent criteria to assess whether a potential customer poses an unacceptable level of
financial risk. At present such discriminations are based on demographic characteristics (e.g.
age, occupation) and are influenced heavily by the ‘credit rating’ system. Demographic
measures do not fully account for variation in individual's financial behavior (e.g. Wang, et
al., 2011). Equally, credit ratings have numerous flaws (e.g. Treacy & Carey, 2000),
uppermost amongst them, is that those without substantial credit history are disadvantaged.
First time borrowers are often forced to pay greater levels of interest regardless of whether
they are fiscally responsible or not in order to build a ‘good’ credit rating. The models
generated here suggest that by considering behavioral indicators such as personality, financial
institutions might be able to create fairer risk assessment practices when deciding upon the
allocation of financial products.

5.4 Conclusion

Considered both in isolation and alongside prior research, the current results suggest
that in order to remain fiscally responsible, one must actively engage in or be predisposed to
defer-gratification, resist impulses and generally weight long-term 'outcomes' equally, if not more heavily than the satisfaction of immediate desires.

6.0 References


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Footnote

1. Item numbers reported conform to those reported by scale authors. For Deferred-Gratification see Ray & Najma (1986); for Impulsivity, Risk-Taking and Self-Regulation see Goldberg (1999); For Consideration of Future Consequences (see Strathman, Gleicher, Boninger, & Edwards, 1994).
Table 1.

Two factor confirmatory model of Fiscal Irresponsibility (standardized solution)

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<th>Item</th>
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<tbody>
<tr>
<td>1 More often than not I spend all that I earn</td>
<td>.792</td>
<td></td>
</tr>
<tr>
<td>3 I often spend money now and worry about the consequences later</td>
<td>.753</td>
<td></td>
</tr>
<tr>
<td>7 If I had to lose my Income I know I have enough saved to get me by</td>
<td>-.703</td>
<td></td>
</tr>
<tr>
<td>6 I have often gone over credit/overdraft limits</td>
<td>.661</td>
<td></td>
</tr>
<tr>
<td>11 I prefer to use credit to buy things rather than save up</td>
<td>.659</td>
<td></td>
</tr>
<tr>
<td>8 I sometimes buy things I cant really afford</td>
<td>.656</td>
<td></td>
</tr>
<tr>
<td>12 I try to pay my debts and balances off each month</td>
<td>-.652</td>
<td></td>
</tr>
<tr>
<td>9 I make plans to ensure I will have enough money in the future</td>
<td>.805</td>
<td></td>
</tr>
<tr>
<td>13 When it comes to my finances I plan for the future</td>
<td>.774</td>
<td></td>
</tr>
<tr>
<td>2 I regularly set aside some of my income as savings</td>
<td>.748</td>
<td></td>
</tr>
<tr>
<td>4 I put a lot of thought into managing my money effectively</td>
<td>.640</td>
<td></td>
</tr>
<tr>
<td>10 I try to ignore my financial situation</td>
<td>-.588</td>
<td></td>
</tr>
<tr>
<td>14 I try as much as possible to limit my spending according to my income</td>
<td>.504</td>
<td></td>
</tr>
</tbody>
</table>
Table 2

<table>
<thead>
<tr>
<th>Scale</th>
<th>X^2</th>
<th>df</th>
<th>CFI</th>
<th>TLI</th>
<th>RMSEA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deferred Gratification</td>
<td>1256.125</td>
<td>66</td>
<td>.610</td>
<td>.685</td>
<td>.219</td>
</tr>
<tr>
<td>Revised</td>
<td>302.396</td>
<td>15</td>
<td>.978</td>
<td>.952</td>
<td>.051</td>
</tr>
<tr>
<td>Impulse Control</td>
<td>1568.751</td>
<td>45</td>
<td>.660</td>
<td>.563</td>
<td>.209</td>
</tr>
<tr>
<td>Revised</td>
<td>645.671</td>
<td>15</td>
<td>.987</td>
<td>.972</td>
<td>.070</td>
</tr>
<tr>
<td>Risk-Taking</td>
<td>178.496</td>
<td>45</td>
<td>.686</td>
<td>.596</td>
<td>.212</td>
</tr>
<tr>
<td>Revised</td>
<td>100.958</td>
<td>15</td>
<td>.940</td>
<td>.900</td>
<td>.118</td>
</tr>
<tr>
<td>Self-Regulation</td>
<td>863.913</td>
<td>45</td>
<td>.836</td>
<td>.789</td>
<td>.137</td>
</tr>
<tr>
<td>Revised</td>
<td>261.612</td>
<td>28</td>
<td>.943</td>
<td>.940</td>
<td>.080</td>
</tr>
<tr>
<td>CFC</td>
<td>244.373</td>
<td>55</td>
<td>.793</td>
<td>.720</td>
<td>.244</td>
</tr>
<tr>
<td>Revised</td>
<td>185.373</td>
<td>36</td>
<td>.961</td>
<td>.940</td>
<td>.096</td>
</tr>
</tbody>
</table>
Table 3

Correlations between Fiscal Irresponsibility and the personality scales from the standardized measurement model.

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>6</th>
<th>7</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Fiscal Irresponsibility</td>
<td>(.91)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 Irresponsible Spending</td>
<td></td>
<td>- (.95)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 Financial Planning</td>
<td></td>
<td></td>
<td>-.835**</td>
<td>(.96)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4 Deferred-Gratification</td>
<td>-.850**</td>
<td>.808**</td>
<td>-.741**</td>
<td>(.86)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6 Risk-Taking</td>
<td>.354**</td>
<td>.385**</td>
<td>-.393**</td>
<td>.422**</td>
<td>(.93)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7 Self-Regulation</td>
<td>-.623**</td>
<td>-.632**</td>
<td>.560**</td>
<td>-.488**</td>
<td>-.491**</td>
<td>(.93)</td>
<td></td>
</tr>
<tr>
<td>8 Consideration of Future Consequences</td>
<td>-.544**</td>
<td>.599**</td>
<td>-.782**</td>
<td>-.604**</td>
<td>-.222*</td>
<td>.473**</td>
<td>(.94)</td>
</tr>
</tbody>
</table>

Note: * < .05; ** < .001; Numbers in diagonal denote scale reliability as calculated using equations from Fornell and Larcker (1981)
Table 4

Fit statistics for latent variable regression models

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>B</th>
<th>$X^2$</th>
<th>CFI</th>
<th>TLI</th>
<th>RMSEA</th>
<th>SRMR</th>
</tr>
</thead>
<tbody>
<tr>
<td>A: Deferred Gratification</td>
<td>69.6</td>
<td>-.834**</td>
<td>62.799</td>
<td>0.966</td>
<td>0.950</td>
<td>0.068</td>
<td>0.034</td>
</tr>
<tr>
<td>B: Risk-Taking</td>
<td>9.5</td>
<td>.308**</td>
<td>69.180</td>
<td>0.951</td>
<td>0.927</td>
<td>0.083</td>
<td>0.057</td>
</tr>
<tr>
<td>C: Self-Regulation</td>
<td>36.9</td>
<td>-.607**</td>
<td>69.496</td>
<td>0.965</td>
<td>0.949</td>
<td>0.074</td>
<td>0.038</td>
</tr>
<tr>
<td>D: Consideration of Future Consequences</td>
<td>45.4</td>
<td>-.674**</td>
<td>112.103</td>
<td>0.936</td>
<td>0.910</td>
<td>0.085</td>
<td>0.048</td>
</tr>
<tr>
<td>E: DG &amp; Risk-Taking</td>
<td>70.1</td>
<td>-.829**</td>
<td>163.109</td>
<td>0.922</td>
<td>0.894</td>
<td>0.082</td>
<td>0.057</td>
</tr>
<tr>
<td>F: DG &amp; Self-Regulation</td>
<td>76.6</td>
<td>-.710**</td>
<td>117.394</td>
<td>0.950</td>
<td>0.932</td>
<td>0.061</td>
<td>0.042</td>
</tr>
<tr>
<td>G: DG &amp; Consideration of Future Consequences</td>
<td>70.4</td>
<td>-.704**</td>
<td>204.097</td>
<td>0.927</td>
<td>0.926</td>
<td>0.076</td>
<td>0.050</td>
</tr>
</tbody>
</table>

Note: * < .05; ** < .001
Figure Caption

Figure 1. Regression model of Fiscal Irresponsibility upon Deferred-Gratification and Self-Regulation Model. (DG = Deferred-Gratification, SR = Self-Regulation, Fiscal = Fiscal Irresponsibility).