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A Facet Measure of Money Madness: A Preliminary Analyses of a New Questionnaire

Adrian Furnham¹ & George Horne²

¹Department of Leadership and Organizational Behaviour, Norwegian Business School, Oslo,

Norway

²Department of Psychology, University of Bath, Bath, United Kingdom

Address of author: adrian@adrianfurnham.com

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A. Furnham: Visualisation, Supervision, Writing -review & editing

G. Horne Data Collection, Analysis and writing

Abstract

This study reports on the development of a new, facet level, questionnaire to measure “money madness” based on a well-established, four-factor model. It reviews the papers currently available to researchers on those with “money troubles” such as financial distress. In this study, 256 adult participants from diverse backgrounds, who were recruited online, completed a 52-item questionnaire designed to measure three facets of each, of four money associations: associating money with Security, Power, Love, and Freedom. They also completed a financial literacy questionnaire which had two factors. The internal reliability of the four domains was satisfactory but this was not the case for all the facets. Factor analysis partly confirmed the hypothesized structure. Regressions indicated that associating money with power was the best predictor of financial literacy. The use of using a facet or domain measure and necessary future theoretical and psychometric developments are discussed.

Key Words: money; financial literacy; greed; power; love; security; freedom.

1. Introduction

Studies on the psychology of money have grown significantly in recent years attracting important recent reviews (Furnham & Grover, 2021; Tang, 2020; Wang et al, 2020). Studies and reviews have ranged from neuro-science (Jia et al., 2013) to business ethics and investment (Tang et al., 2018). There have also been many cross-cultural comparisons testing the universality of many of these findings (Lemroová et al, 2014; Rose et al., 2016). Inevitably there has also been an increase in psychometric studies aimed at measuring healthy and unhealthy money attitudes and beliefs.

Researchers, educators, and policymakers interested in financial education and planning, as well as those providing financial advice, have become more interested in financial literacy, well-being, and distress (Fenton-O’Creevy & Furnham, 2021). Some have recognized that not only are many people very poorly informed about financial issues but that they also have maladaptive beliefs and behaviors that are associated with money. Hence, they make poor money-related choices and decisions, to the extent that some have talked about a kind of money madness (Furnham, 2014). Indeed, there is a rich and growing literature on the topic that is informed by different branches of psychology. One of the primary interests of this research area, which informs this paper, is how to comprehensively measure an individual’s money associations and beliefs. There are now numerous, conceptually related, questionnaires available to assess money attitudes and behaviors dating back 40 years (Furnham, 1984; Furnham et al. 2012; Klontz et al., 2011; Lim & Teo, 1997; Rose & Orr, 2007; Tang, 1992; Taylor et al., 2016; Lay & Furnham, 2019; Yamauchi & Templer, 1982).

Though different in origin and execution, these measures are based on both empirical and theoretical classification of money beliefs and behaviors. Researchers have usually been reliant on the cooperation between clinical psychologists interested in people with "money problems", differential psychologists interested in personality traits, and psychometricians interested in test construction. More recently, they have been joined by experts in finance and economics (Lusardi, 2019). Together they have moved the literature forward by demonstrating stable individual differences in attitudes to money and their many correlates. This study reports on a new test designed to measure specific facets of four different “money associations” identified by early researchers in the field and which have been used in many subsequent measures (Fenton-O’Creevy & Furnham, 2020ab, 2021; Furnham, 2014; von Stumm et al, 2013).

1.1 Background

It has been suggested that household finance decision-makers associate money with different outcomes which can, in extreme cases, be pathological. Most money beliefs measures have around four to five higher-order traits but none assess the facets/subfactors of each dimension that many reviewers have suggested offer an important and useful finer grain analysis and understanding of how money attitudes and beliefs are related to a wide range of economic behaviors (Furnham, 2014; Furnham & Grover 2021).

In the development of most personality traits tests, developers have sought to identify not only stable traits but also facets of those traits. For example, consider three very well-known personality tests and one trait, namely, Agreeableness. The well-known NEO-PI-R scale has six facets: Trust, Straightforwardness, Altruism, Compliance, Modesty, and Tender-mindedness (Costa & McCrae, 1992); the Hogan HPI has five facets, namely, Easy to Live With, Sensitive, Caring, Likes People, and No Hostility (Hogan, Hogan, & Warrenfeltz, 2007), while the HEXACO model has five facets labeled Forgiveness, Gentleness, Flexibility, Patience, and Altruism vs Antagonism (Ashton & Lee, 2007). Facets give a better insight into how the mechanisms and processes work for this trait. They offer a finer grain analysis of a trait. This paper hopes to do the same for dysfunctional money attitudes. As of yet, there are no facet level measures available in this area. This study attempts to remedy this situation.

The Appendix shows the various scales that have been developed to assess money beliefs and some findings from the most widely used and referenced studies. In all, there appear to be around ten different, but related, measures of different lengths, each of which assesses different factors. The table shows that most of the studies used students as research participants and that, as always, most (but not all) studies were done in America and Europe, though some recent studies have been reported from other countries (Furnham & Murphy, 2019; Henchoz et al., 2019; Phau & Woo, 2008). Money attitudes have been linked with many demographic variables (Furnham, 1996). For instance, studies have found money attitudes related to gender (Furnham et al., 2012, 2014; Gresham & Fontenot, 1989; Klontz et al., 2011, 2014; Tang, 1992), culture (Burgess, 2005; Lynn, 1991; Medina, Saegert, & Gresham, 1996), education level (Furnham, 1984, Klontz et al, 2011), and political and religious values (Furnham et al., 2012; Tang, 1992). Money attitudes have also

been shown to be related to both bright- and dark-side personality variables (Durvasula & Lysonski, 2010; Furnham, 2019).

1.2 Money Attitudes and Associations

As the studies in the Appendix illustrates, some early measures have been, and continue to be, widely used in research and practice. There is, as expected, considerable overlap between studies. For example, nearly 40 years ago, Yamauchi and Templer (1982) developed a 29-item scale that measured five factors, which they labeled *Power–Prestige*, *Retention Time*, *Distrust*, *Quality*, and *Anxiety*. Correlations with other established measures, such as Machiavellianism, status concern, time competence, obsessionality, paranoia, and anxiety, showed that this questionnaire was related to measures of other similar theoretical constructs. Rose and Orr (2007) argued that based on a thorough reading of the literature, that four dimensions exist: *Status*, which is the tendency to perceive money as a sign of prestige (e.g., money is used to impress people); *Achievement*, which is the tendency to perceive money as a symbol of one's accomplishments (e.g., money is valued as a sign of success); *Worry*, which is the tendency to worry excessively about money (e.g., money [or the perceived lack thereof] is a source of anxiety); and *Security*, which is the tendency to save and value money for its ability to provide a sense of safety or wellbeing (e.g., money is important because it provides resources for the future).

It is important to note the conceptual diversity among researchers who have developed measures of money beliefs. Some researchers in this area have come from a clinical background (e.g., Ealy & Lesh, 1998; Forman, 1987; Matthews, 1991). Forman (1987) identified five types: *Misers* who hoard money; *Spendthrifts* who tend to be compulsive and uncontrolled in spending; *Tycoons* who are totally absorbed with money-making, to gain power, status, and approval; *Bargain hunters* who compulsively hunt for bargains to make them feel superior; and *Gamblers* who feel exhilarated and optimistic when taking chances.

One of the earliest assessment tools developed in this area was created by Goldberg and Lewis (1978). As clinical psychologists, Goldberg and Lewis argued that money is one of the last taboos and that it is important to unravel the psychological threads that describe and explain why otherwise rational financial decision makers often exhibit signs of what they called money madness (Ruble, 1978). They described four types of money attitudes and perspectives: *Money as Security*, *Money as Power*, *Money as Love*, and *Money as Freedom*. These factors have since gone

on to inform the development of other measures (see Furnham et al., 2012). The idea behind the work of Goldberg and Lewis and others is that money has powerful affective associations, often developed in childhood, which can be categorized. These can help to explain the highly idiosyncratic and a-rational (and irrational) behavior of otherwise sensible and mature adults. As noted by Ruble, not all psychologists, nor all financial service practitioners, agree with the premise underlying such measures; however, while debates continue to occur regarding the theoretical orientation of money beliefs scales and measures, these tools continue to be widely used and applied in practice and research. This can be seen in the context of the growing interest in behavioral economics, which focuses on the difference between fast and slow thinking with regard to economic and money issues.

Goldberg and Lewis (1978) uniquely provided a description of different types for each of their four major money belief factors. Money as Security had four types: (a) Compulsive Savers, (b) Self-deniers, (c) Compulsive Bargain Hunters, and (d) Fanatical Collectors. Those who experienced Money as Power were divided into three sub-types: (a) The Manipulator, (b) The Empire Builder, and (c) The Godfather. For those who associated Money as Love, there were three subtypes: (a) The Love Buyer, (b) The Love Seller, and (c) The Love Stealer. Finally, for those who associated Money with Freedom, there were two types: (a) Freedom Buyers and (b) Freedom Fighters.

As illustrated in the Appendix, since Goldberg and Lewis (1978) first introduced their money belief classifications, numerous researchers have adapted, expanded upon, or developed competing methodologies. For example, some have suggested that there are distinct types of money-related behaviors, such as impulsive and compulsive buying or abnormal hoarding and collecting. This suggests that understanding money associations, attitudes, and pathologies would benefit from a finer-grained analysis than that offered by many of the questionnaires, scales, and measurement tools described in Table 1 (e.g., MAS, MES, MBBS). No one has, however, attempted to derive a questionnaire that measures subtypes or facets of money beliefs originally developed by Goldberg and Lewis. The focus of the current study is to fill this gap in the literature.

1.3 Current Study

As described above, and shown in Table 1, Goldberg and Lewis (1978) described subtypes within each money types category. Many of these categories or types have been explored in the extensive subsequent literature in this area (see Furnham, 2014).

Insert Table 1 here

The aim of this study was to develop items for each of the subscales and validate the measure. We attempted to develop a 12-item subscale (4 types x 3 subtypes) along with a very brief three-item measure of each of the four types. We acknowledge that three-item scales usually have low internal reliability (e.g., a Cronbach's alpha around .50) and that there is a trade-off between scale length and reliability; however, having twelve scales allows an analysis at the domain and facet level, which we believe offsets any potential increase in measurement errors. In this study, and in accordance with Lay and Furnham (2019), we examined not only the factor structure of the measure but also correlates with financial literacy as a measure of validity.

2. Method

2.1 Sample

More than 260 individuals (148 male, 120 female) participated in the study. The mean age of participants was 37.43 years ($SD = 12.75$, range of 18 to 77 years). Approximately 59% of participants were from the United States ($n = 159$), whereas almost 37% were from India ($n = 98$), with the rest coming from Canada and the United Kingdom. In terms of ethnicity, approximately 47% self-identified as White ($n = 127$), almost 44% self-identified as Asian ($n = 117$), and slightly more than 3% self-identified as Black ($n = 9$), with the remainder identifying themselves as another ethnicity. In all, 17% claimed to be able to be bi-lingual. With regard to education, approximately 14% had completed high school ($n = 38$), 14% had obtained a diploma equivalent level of education ($N = 38$), 50% reported earning a Bachelor's degree ($n = 134$), and almost 22% indicated holding a Master's or doctorate degree ($n = 58$). Overall, the sample was highly educated and not representative of the general population.

2.2. Measures

Table 3 shows the items that comprised the *Money Madness Measure*. Items were developed from a close reading of the literature (see Furnham, 2014), but primarily the specific literature on money disorders. Each item was rated on a seven-point scale ranging from strongly agree = 7 to strongly disagree = 1. Four scales were estimated and labeled in alignment with Goldberg and Lewis (1978). The Cronbach's alphas associated with each scale were as follows: (a) Money as Security (.72), (b) Power (.75), (c) Love (.76), and (d) Freedom (.63).

Financial interest and literacy was measured based on a dimension established by Lay and Furnham (2019).¹ Eleven items, using a seven-point scale ranging from strongly disagree to strongly agree ($\alpha = .85$, with 1, 2, 9, 10, 11 reversed), comprised the measure. Resulting scale scores essentially identify a pro-positive and anti-negative approach to financial interests and literacy.

2.3 Procedure

Prior to collecting data, departmental ethics permission was sought and granted (CEHP/2017/514). Study participants were recruited via Prolific, an online market for enlisting workers to participate in research and surveys. They were paid £1.50 for their participation. In all, 300 people were sampled but the number was reduced because of missing data and checks on the time participants took to complete the survey (i.e., an index of careless responding). Applying a strict criterion to ensure high-quality data, 32 people were removed out of the sample before the analysis, due to incomplete answers as well as evidence of careless responding.

3. Results

Insert Tables 2 and 3 here

Table 2 shows the scale item scores differentiated by the sex of participants. It is noticeable that there were a few items with a particularly low score (i.e., items 16, 27, 28, 29, 30) and a particularly high score (i.e., items 2, 41, 44, 45, and 49). These may represent floor and ceiling effects and

¹ The terms financial literacy, financial knowledge, and financial education are used interchangeably in the literature (Huston, 2010). Financial literacy is essentially the combination of consumers' or investors' understanding of financial products and concepts. It also refers to their ability and confidence to appreciate financial risks and opportunities, to make informed choices, to know where to go for help, and to take other effective actions to improve their financial well-being (Abdullah & Chong, 2014). It is possible to measure financial literacy in different ways (Huston, 2010) including knowledge tests as well as self-evaluations. Perhaps one of the best-known measures is one devised by Lusardi and Mitchell (2011), which involves financial information processing. In this study, we use a measure of self-estimated interest and knowledge with good psychometric properties (Lay & Furnham, 2018).

warrant revision and further work. Other than those, there seemed to be a reasonable distribution of items. Table 3 also shows the Cronbach's alpha estimates associated with each scale. It is important to note that the relatively low alpha estimates were, in part, a function of the scale length (three items). A number (i.e., PO2; LO3; FO1) were unacceptably low suggesting either (or both) that the facet was theoretically not internally coherent or that the items did not measure it well.

Table 2 also shows that of the 52 one-way ANOVAs, none was significant and the $p < .001$ level, six were significant at the $p < .01$ level, and nine were significant at the $p < .05$ level. This suggests that while there were a number of well-established sex differences, the effect sizes were small. To measure this, the items with the five largest F levels were subject to Cohen's d (i.e., item 7 ($d = .36$), item 14 ($d = .35$), item 18 ($d = .33$), item 28 ($d = .33$), and item 51 ($d = .39$)). Table 3 shows the items on the financial literacy scale and the sex differences on each. Three items (i.e., 1, 5, and 6) were significant. Items 5 and 6 indicated that women are more diligent with money-related affairs; item 1 indicated showed that men are more aware of finance-specific language. A factor analysis confirmed the observation that some items (i.e., 1, 2, 9, 10, and 11) referred to self-assessed poor financial knowledge, while the remainder (i.e., 3, 4, 5, 6, 7, 8) referred to self-confidence and interest in financial knowledge.

Insert Tables 4 and 5 here

Table 4 shows the factor analysis of the twelve named subscales from each of the types. Factor scores were rotated using a Varimax, orthogonal rotation, based on eigenvalues > 1.00 to determine the number of factors. The results demonstrated some support for the four-factor model. Two of the three Security subscales loaded on the same factor, whereas three of the Power subscales loaded on another factor; all three Love subscales loaded on a third factor, and two of the three Freedom factors on the fourth factor. However, the third Security scale (SO3) did not load on any factor, while the third Power scale loaded on the Love factor, and the first Freedom scale loaded on the Power Factor.

Items comprising the four scales were then totaled and the alpha calculated. The resulting alpha estimate was deemed satisfactory ($\alpha > .70$), although it was lower for the final Freedom factor ($\alpha = .62$). The scales were then correlated with each other and the sex of the participant. Table 6 shows the results. All were positively but modestly correlated, suggesting that what Goldberg and

Lewis (1978) termed *money madness* does not take any single form. The highest correlations were between money as Power and as Love ($r = .55$) and between Power and Freedom ($r = .50$). The only significant correlation with sex suggested that females view money as security less so than males. However, it should be acknowledged that the low correlations could also be due to the unreliability of the measurement, though restriction of range does not appear to be an issue.

Insert Table 6 here

Table 6 shows the varimax rotated financial literacy scale factor analysis. This showed two distinct factors that accounted for 55% of the variance. The two factors were (a) positive about money affairs and (b) negative financial understanding. Thus, it could be said that high scores on factor one represented being financially literate, whereas those who scored high on factor two could be described as financially non-literate.

Insert Tables 7 and 8 here

Tables 7 and 8 show the results of multiple regressions onto financial literacy positivity and negativity, respectively. Each table shows two regressions, one with money madness factors as the predictor variables, the other with money madness facets as the predictor variables. The incremental difference in variance explained by the factors and facets was assessed using the guidelines of Anglim and Grant (2014). Specifically, Olkin-Pratt double adjusted-r-squared scores were calculated with the 1000 bootstrap samples providing 95% confidence intervals. These methods are better suited to personality-based data than typical methods and minimise bias caused by a different number of predictors between factor and facet regression models.

Table 7 shows that that money madness personality factors explain 11.26% of the variance in financial literacy positivity. There is minimal increase when money madness facets are used instead ($\Delta\rho^2 = .002$). Men, and those with higher Power, but lower Love and Freedom factor scores scored higher on financial literacy positivity. The Security factor was not a significant predictor. This was somewhat support by the facet model, with Power facets 1 (Competitive Manipulation) and 2 (Empire Builders), and Security facet 1 (Compulsive Saver) as positive predictors, with Love

facet 2 (Love Sellers) and Freedom facets 1 (Freedom Buyers) and 2 (Freedom Fighters) as negative predictors.

Table 8 shows that money madness personality factors explain 20.21% of the variance in financial literacy negativity. There is a notable 6.2% increase in variance explained when facets are added ($\Delta\rho^2 = .062$). Money madness personality factors Love and Freedom were positive predictors, while Security and Love were negative predictors of financial literacy negativity. This is essentially opposite to the relationships with financial literacy positivity in this regression. Security is a significant negative predictor with beta values above that of Power. Age was also not a significant predictor of financial literacy negativity. In the facet model, Freedom 1 (Freedom Buyers) and 2 (Freedom Fighters), and Love 2 (Love Sellers) facets were significant positive predictors, while Security 1 (Compulsive Saver) and 2 (Self Denier), and Power 2 (Empire Builders) were negative predictors.

4. Discussion

Interest in the psychology of money has conceptual, empirical, and practical roots going back nearly four decades. Researchers across fields of study, including behavioral economists, clinical psychologists, personality psychologists, and financial planners, have created measures of money beliefs and attitudes. While clinicians have been interested in “money madness” since Freud’s time (Furnham, 2014), and written many books and papers in the area (Forman, 1987), it has principally been social/personality psychologist that have been responsible for the increase in interest in scale development (see Appendix). There also are now financial psychologists who specialize in understanding money scripts and giving financial advice (Goetz et al., 2018; Grable et al., 2015; Grable et al., 2020; Klontz & Britt, 2012; Klontz et al., 2015; McCoy et al., 2013). All have been interested in developing a robust, comprehensive, and sensitive model or typology of money attitudes, and psychometrically valid measures of the construct.

This study attempted to devise a facet level measure of money attitudes, beliefs, and behaviors using ideas informed by clinicians. Indeed, while nearly all the many scales that measure money attitudes are multidimensional (see Appendix) and have many overlapping dimensions, none have facet measures. Thus, it could be that those who view money as Security could manifest that trait

in different ways, such as being a Self-Denier, Fanatical Collector, or Bargain Hunter (see Table 1), which may have both different causes and consequences. We have argued that it is desirable to measure money motives and madness at the facet as well as the domain level for greater understanding. It is apparent from both Tables 2 and 4 that there are unique differences *between* facets *within* the same factors. Thus, while compulsive savers and bargain-hunters both associate money with security, the way they manifest their possibly deep-seated desires is very different. It was also apparent that there are interesting and potentially important sex difference on some, but not all facets in the same domain. This study shows the importance of facet-based analysis; facets notably explained 6% more variance of financial literacy negativity than the factors alone. Therefore, in future studies it would be both interesting and important to look at how facet scores (namely money madness subtypes) are differently associated with a range of financial beliefs and behaviours.

This study, perhaps the first to do so, set about to devise and validate a measure of what Goldberg and Lewis (1978) called *money madness*. It met with modest success, suggesting more opportunities to work on both theory and questionnaire design. This study also makes a modest contribution to the advancement of theory in that it provides evidence for different types and mechanisms within each of the four money madness categories. For the clinician and financial service practitioner, this measure offers the opportunity to explore at a deeper level some of the particularly less adaptive belief patterns like those who are “tightwads” and “mean with their money” to their own and others’ detriment (Furnham et al., 2021).

Although some items showed floor and ceiling effects, we obtained a reasonable distribution of scores for each, as well as evidence of predictable and replicable differences in scores by sex. Notable sex comparisons showed no differences in the Love Buyers and Love Sellers subfactors but did show that women express their love more through gifts and spending money on others more than themselves, while men see that money makes them more attractive, loveable, and desirable. Men may believe that money makes them more attractive, which could be related more to societal gender role norms than to other factors. Men may see their self-worth as more closely related to their occupational success, while women may take their self-worth from other factors (Furnham, 2014). Gift giving differences however, could be explained by women typically being more agreeable.

The results from this study suggested that for females, "being" was much more important than "having". Women in the study believed money gives real independence, and many reported they often dream of what they could and would do if they won the lottery. This may be the result by which, at least traditionally, men and women are socialized differently about money, though this may be changing. The results also showed that men felt money gives them real independence and that money is a passport to freedom. Both sexes felt people need to be on guard to protect themselves against unpredictable events. The lowest scores were around the notion that one should look down on those who cannot make money and they really can buy love. The only major sex difference on financial literacy was on the item that was concerned with the fact that women seemed less involved in tracking their financial status compared to men.

Financial literacy scores also suggested that women are more financially conscientious, but despite this, see themselves as having less knowledge of financial language. However, this could be related to self-doubt, or men believing they are more conscientious and literate than they actually are. The Power dimension was the only factor positively linked to financial literacy across the two factors. People who see money as more influential may pursue it more and be more money-focused. The trait grandiose Narcissism literature has shown that Narcissism is linked to increased effort to succeed, which could be contributing to financial literacy.

Security, however, was only negatively associated with financial neglect, which suggests that feelings and perceptions of security could be less influentially appropriate when people have more money and qualifications. That said, facet-based analyses showed that Security facet 1 (Compulsive Saver) was significantly related to both. This could suggest that a higher amount of diligence and even paranoia over savings may lead to people actively increasing their financial literacy. Alternatively, the Freedom and Love factors were negatively linked to financial literacy through both factors. While this could mean that these beliefs are linked to a more reckless, carefree lifestyle, it could also mean that many prioritize their own well-being and their personal relationships more, and focus their life more on intrinsic, rather than extrinsic factors. Future studies should be designed to evaluate how these factors relate to psychological well-being and to determine if they bring any personal benefit outside of just financial literacy.

One obvious and important question is the application and usefulness of this study, and this literature in general, for financial planners and those providing financial service advice to others. Furnham and Grover (2021) reviewed a number of practitioner tools and techniques for classifying

potential investors that are aimed at helping practitioners understand their client's needs and preferences and to make the sales experience more efficient for both parties (see also Horwitz & Klontz, 2013). These tests could also be used for counseling for individuals or couples who are struggling with money issues.

What is noticeable is the gap between the academic literature and the applied world (Furnham & Grover, 2020) in terms of the assessment of money attitudes and beliefs. Moreover, just as work psychologists have discovered that their human resource clients like personality tests that assess personality at the facet, as well as the domain, level, so it seems likely that financial planners would like a detailed, specific level analysis of potential client attitudes and beliefs about money. In this sense, studies such as this may represent the beginning of a happy rapprochement.

4.1 Limitations and Implications

This study, like all others, has limitations. First, it needs replicating on a larger and more heterogeneous population, particularly to establish the factor structure. Next, it may be that some of the items merit changing or re-wording because of problems with comprehension or the distribution of the scores. Similarly, it may be that some of the facets need rethinking: they may be dropped, combined, or relabeled. Third, the internal reliability of the scales was modest, which was primarily due to just having three items. Had this been increased to a more acceptable number of five per scale, the questionnaire would have been much longer (i.e., 80 vs 48 items). There is also likely to be some variation with different samples. We tested a successful, educated group in this study; logically, those with less or scarce financial resources may treat money differently. It would be interesting to see whether money attitudes on Love, Freedom, and Security vary with levels of disposable income. In summary, this study should be considered exploratory and a platform for additional research between test developers, financial psychologists, clinicians, financial planners, and others who are interested in assessing and helping household financial decision-makers make better money-related decisions.

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Table 1: Money types and subtypes as originally proposed by Goldberg and Lewis (1978)

Factor
<p>1. Money as Security</p> <p>a. Compulsive savers: tax themselves and no amount of money saved is sufficient to provide enough security.</p> <p>b. Self-deniers: tend to be savers but enjoy the self-sacrificial nature of self-imposed poverty and may spend money on others however (though not much) to emphasize their martyrdom.</p> <p>c. The compulsive bargain hunter: the thrill is in out-smarting others – both those selling and those paying the full price.</p> <p>d. The fanatical collector: accumulate all sorts of things, some without much intrinsic value, and turn to material possessions rather than humans, as potential sources of affection and security.</p> <p>-----</p>
<p>2. Money as Power</p> <p>a. The Manipulator: use money to exploit others' vanity and greed and feel less helpless and frustrated, and no qualms about taking advantage of others.</p> <p>b. The Empire builder: have (or appear to have) an overriding sense of independence and self-reliance, repressing or denying dependency needs, and may try to make others dependent on them.</p> <p>c. The godfather: have more money to bribe and control so as to feel dominant and often hide anger and exhibit a great over-sensitivity to being humiliated – hence the importance of public respect.</p> <p>-----</p>
<p>3. Money as love</p> <p>a. The love buyer: may attempt to buy love and respect and feel unloved, not unlovable, and avoid feelings of rejection and worthlessness by pleasing others with their generosity.</p> <p>b. The love seller: promise affection, devotion, and endearment for inflating others' egos. and can feign all sorts of responses and are quite naturally particularly attracted to love buyers.</p>

c. **The love stealer:** seek out objects of symbolic value to them and are hungry for love but don't feel they deserve it.

4. Money as Freedom

a. **The freedom buyers:** for them, money buys escaping from orders, commands, even suggestions that appear to restrict autonomy and limit independence.

b. **The freedom fighters:** reject money and materialism as the cause of the enslavement of many and believe camaraderie and companionship are the main rewards for joining the anti-money forces.

Table 2: Facet Scale Items Showing Means, SDs, and Sex Differences

SECURITY (.51)	Gender	<i>M</i>	<i>SD</i>	<i>F</i>	<i>p</i>
1. You can't trust people; its dangerous to be dependent on them	Male	3.88	1.58	1.35	.25
	Female	4.12	1.63		
2. You need to be on guard to protect yourself	Male	5.27	1.21	.00	.96
	Female	5.26	1.14		
3. You can count on money	Male	3.97	1.42	2.14	.15
	Female	3.71	1.42		
SO1: COMPULSIVE SAVER (.54)					
4. For me, saving money is its own reward	Male	4.60	1.59	3.17	.08
	Female	4.95	1.53		
5. I believe in the motto "a penny saved is a penny earned"	Male	4.93	1.35	1.01	.32
	Female	5.10	1.27		
6. I have to admit that I do worry about losing money I have saved (which is never quite enough)	Male	4.60	1.63	3.69	.06
	Female	4.98	1.60		
SO2: SELF DENIER (.44)					
7. I really do feel guilty about spending money on myself	Male	4.16	1.57	8.33	.00
	Female	4.75	1.71		
8. I often say "I can't afford it" when I can	Male	3.85	1.57	0.36	.55
	Female	3.98	1.72		
9. I have sacrificed pleasure and fun to ensure I have enough money	Male	4.18	1.76	1.23	.27
	Female	4.42	1.70		
SO3 HUNTERS AND COLLECTORS (.62)					
10. I am really a compulsive bargain hunter	Male	4.01	1.68	5.76	.02
	Female	4.53	1.75		
11. I love the thrill of sales to get discounts and bargains	Male	4.35	1.61	3.98	.06
	Female	4.75	1.65		
12. I tend to collect and hoard things	Male	3.95	1.81	4.26	.04
	Female	3.49	1.76		
13. I feel stupid if I have to pay the full price for anything	Male	3.53	1.63	1.31	.25
	Female	3.77	1.72		
POWER SURVIVALISTS (.53)					
14. Money makes you strong and important	Male	3.73	1.53	7.70	.01
	Female	3.19	1.57		
15. Money speaks	Male	3.20	1.41	0.00	.99
	Female	3.20	1.39		
16. I look down on those who can't make money	Male	1.82	1.18	0.28	.60
	Female	1.75	1.05		
PO1: COMPETITIVE MANIPULATION (.43)					
	Male	3.17	1.34	1.87	.17

17. I can usually persuade people by appealing to their greed, pride, and vanity	Female	2.94	1.31		
18. I am not sentimental about money	Male	4.82	1.46	7.20	.01
	Female	4.34	1.43		
19. To be honest, it's pretty easy to get most people to part with their money	Male	3.36	1.28	0.01	.98
	Female	3.36	1.34		
20. Money can be used to control situations to work in my benefit	Male	4.15	1.43	3.97	.05
	Female	3.78	1.62		
PO2: EMPIRE BUILDERS (.33)					
21. I take pride in the money I've earned	Male	4.78	1.49	6.90	.01
	Female	5.24	1.29		
22. Self-reliance and good decisions lead to wealth and prosperity	Male	4.68	1.25	1.28	.26
	Female	4.86	1.23		
23. Money gives you power over important and useful people	Male	4.15	1.51	1.60	.21
	Female	3.90	1.60		
PO3: CONTROL FREAK (.63)					
24. I have found that at home and work, money is the best source of reward and punishment	Male	3.53	1.47	0.00	.93
	Female	3.55	1.46		
25. I believe having money can really bring me respect	Male	3.33	1.53	0.48	.49
	Female	3.20	1.55		
26. You only have real influence if you have money	Male	3.98	1.76	5.63	.02
	Female	3.45	1.72		
27. I sometimes look down on those who can't make money	Male	1.90	1.21	0.23	.63
	Female	1.98	1.16		
LOVE AND ROMANCE (.70)					
28. Love and money are intertwined	Male	2.75	1.53	1.48	.23
	Female	2.53	1.36		
29. You really can buy love	Male	2.42	1.49	6.87	.01
	Female	1.96	1.30		
30. You are more lovable and desirable the more money you have	Male	3.07	1.72	4.68	.03
	Female	2.62	1.62		
LO1: LOVE BUYERS (.71)					
31. I am a generous tipper, charity, and present giver	Male	4.15	1.32	0.05	.83
	Female	4.12	1.53		
32. I try not to, but I do spoil my family and friends	Male	3.82	1.30	3.04	.08
	Female	4.12	1.54		
33. I love giving expensive presents to those dear to me	Male	4.33	1.32	1.06	.30
	Female	4.14	1.64		
34. I spend money freely and foolishly on those I love	Male	3.51	1.51	2.21	.14
	Female	3.22	1.64		
LO2: LOVE SELLERS (.53)					
35. I often have to pretend to like people I do business with	Male	3.92	1.64	0.00	.91
	Female	3.94	1.69		
	Male	2.63	1.33	1.58	.21

36. I have always found it pays to lavishly flatter your boss, clients, and friends	Female	2.95	1.46		
37. I admit to occasionally buying acceptance and love from others	Male	2.45	1.30	0.06	.80
	Female	2.40	1.45		
LO3: LOVE DEALERS (.32)					
38. I express my love through gifts	Male	3.32	1.31	5.73	.02
	Female	3.77	1.71		
39. I am sure my money makes me more attractive to others	Male	3.07	1.66	3.95	.05
	Female	2.67	1.52		
40. I find it easier to spend money on others than myself	Male	4.43	1.57	4.43	.04
	Female	4.86	1.67		
FREEDOM AND AUTONOMY (.32)					
41. Having money is the best passport to freedom	Male	5.01	1.46	0.25	.62
	Female	5.11	1.49		
42. The less time spent devoted to working for money the more time for spending and enjoying it	Male	4.65	1.33	1.17	.28
	Female	4.46	1.40		
43. I reject the slavery of work for a good, alternative life	Male	3.98	1.39	0.24	.63
	Female	4.07	1.52		
FO1: FREEDOM BUYERS (.27)					
44. Money gives me real independence to do as I like	Male	5.14	1.08	4.02	.05
	Female	5.41	1.10		
45. The real reason to get money is to have real choice	Male	5.02	1.34	1.49	.22
	Female	5.22	1.29		
46. People sometimes say I am irresponsible with my money	Male	2.91	1.75	2.30	.13
	Female	2.58	1.76		
FO2: FREEDOM FIGHTERS- (.52)					
47. Money worship and acquisition is a trap: it is the root of all evil	Male	4.62	1.46	1.43	.23
	Female	4.40	1.38		
48. I scorn the rich, money-obsessed people and all they represent	Male	4.17	1.63	0.61	.44
	Female	4.01	1.66		
49. To be is much more important than to have	Male	5.38	1.15	1.06	.30
	Female	5.53	1.25		
FO3: FREEDOM FANACISTS (.64)					
50. By and large money really can solve most of my problems	Male	4.32	1.65	0.00	.99
	Female	4.31	1.56		
51. I often dream of what I could and would do if I won the lottery	Male	4.77	1.81	9.50	.01
	Female	5.43	1.59		
52. There is precious little you can't have if you have enough money	Male	4.42	1.76	0.47	.50
	Female	4.27	1.66		

Note: The number in brackets after the subtype refers to the internal reliability (alpha)

Table 3: Gender Differences in Financial Interests and Literacy

Item	Gender	<i>M</i>	<i>SD</i>	<i>F</i>	<i>p</i>
1. I really don't understand financial talk and jargon	Male	3.29	1.56	11.51	.00
	Female	3.97	1.61		
2. I feel foolish and embarrassed talking about money issues	Male	3.13	1.45	1.65	.20
	Female	3.38	1.73		
3. I enjoy reading about personal finance	Male	3.71	1.69	0.03	.86
	Female	3.74	1.81		
4. I think I am pretty money-savvy	Male	4.65	1.37	2.51	.12
	Female	4.93	1.37		
5. I am pretty good at budgeting	Male	5.01	1.53	5.25	.02
	Female	5.43	1.41		
6. I keep a close track of my money affairs	Male	5.25	1.52	6.69	.01
	Female	5.71	1.31		
7. I pay bills immediately to avoid interest and penalties	Male	5.54	1.61	1.69	.20
	Female	5.79	1.54		
8. I know exactly how much money I have and where it is	Male	5.57	1.39	3.69	.06
	Female	5.89	1.26		
9. I believe I have very little control over my financial situation	Male	3.00	1.46	1.15	.28
	Female	2.80	1.50		
10. I prefer to let trusted family and friends deal with my financial affairs	Male	2.08	1.39	0.49	.49
	Female	2.21	1.50		
11. I wished I understood financial affairs better than I do	Male	3.97	1.71	2.04	.16
	Female	4.27	1.67		

Table 4. Factor Analysis of the 12 Facets Showing Factor Loadings

	1	2	3	4
SO1	.20	.06	.81	-.06
SO2	-.02	.17	.82	.12
SO3	.46	.32	-.05	.11
PO1	.55	.54	.16	.00
PO2	.06	.80	.06	.01
PO3	.63	-.27	.08	.02
LO1	.70	.09	.14	.01
LO2	.79	.13	.00	.07
LO3	.63	.45	.06	-.08
FO1	.08	.66	.21	.27
FO2	.02	.13	-.15	.77
FO3	.07	.03	.23	.81
Eigenvalue	3.33	1.62	1.23	1.08
Variance	27.36	12.73	10.35	8.98

Table 5. Cronbach's Alpha of the Four Scales, Their Inter-Correlations, and Their Correlation with Gender.

	α	1	2	3	4
1.Security	.74				
2. Power	.79	.36**			
3. Love	.74	.36**	.53**		
4. Freedom	.62	.25**	.45**	.25**	
5. Sex		-.17*	.10	.03	-.03

** p<.01, *p<.05

Table 6. Factor Analysis of the Financial Literacy Scales Showing Factor Loadings

	1	2
F1	-.08	.85
F2	-.25	.75
F3	.23	-.61
F4	.70	-.42
F5	.81	-.25
F6	.86	-.14
F7	.74	.05
F8	.83	-.05
F9	-.58	.37
F10	-.42	.30
F11	-.00	.68
Eigenvalue	4.49	1.58
Variance	40.89	14.39

Table 7. Multiple Regressions of Money factors and facets onto Financial Positivity

	<i>B (95% CI)</i>	<i>SE</i>	<i>p</i>	<i>B</i>	<i>SE</i>	<i>p</i>
Sex	1.234 (.274, 2.198)	.4903	.014	.1270(.208, 2.306)	.518	.010
Age	-.0541 (-.093, -.016)	.0200	.009	-.053(-.093, -.012)	.021	.005
Security	.0199 (-.033, .074)	.0268	.475			
Power	.1154 (.051, .182)	.0312	.001			
Love	-.1136 (-.168, -.058)	.0299	.001			
Freedom	-.1922 (-.269, -.108)	.0350	.001			
Security 0				-.152(-.350, .031)	.096	.118
Security 1				.255(.049, .462)	.107	.021
Security 2				.036(-.130, .206)	.086	.175
Security 3				-.078(-.196, .026)	.058	.175
Power 0				.183(-.066, .437)	.127	.155
Power 1				.259(.093, .414)	.084	.002
Power 2				.364(.126, .597)	.119	.006
Power 3				-.113(-.297, .072)	.092	.202
Love 0				-1.318(-6.388, 3.088)	2.324	.540
Love 1				.019(-.125, 1.57)	.070	.755
Love 2				-.281(-.470, -.073)	.098	.002
Love 3				-.163(-.386, .082)	.121	.182
Freedom 0				-.061(-.271, .139)	.105	.555
Freedom 1				-.289(-.498, -.071)	.111	.011
Freedom 2				-.286(-.502, -.065)	.114	.011
Freedom 3				-.037(-.197, .130)	.083	.659
Double Adj. R^2	0.1126			0.1148		
F	12.55			5.708		
p	.000			.000		
$\Delta\rho^2$.0022			

**p<.01 *p<.05

Table 8. Multiple Regressions of Money factors and facets onto Financial Negativity

For Financial Negativity; using adjusted Olkin-Pratt regression models and 1000 bootstrap samples

	<i>B (95% CI)</i>	<i>SE</i>	<i>p</i>	<i>B</i>	<i>SE</i>	<i>t</i>
Sex	-.616 (-.1654, .477)	.532	.244	-.607(-1.616, .432)	.522	.254
Age	.036 (-.010, .084)	.024	.133	.038(-.008, .086)	.024	.131
Security	-.241 (-.308, -.174)	.033	.001			
Power	-.169 (-.243, -.096)	.037	.001			
Love	.197 (.122, .267)	.036	.001			
Freedom	.241 (.148, .342)	.050	.001			
Security 0				-.089(-.286, .166)	.110	.414
Security 1				-.660(-.892, -.427)	.120	.001
Security 2				-.203(-.379, -.027)	.089	.021
Security 3				.059(-.069, .192)	.066	.357
Power 0				-.167(-.427, .096)	.131	.186
Power 1				-.163(-.335, .013)	.091	.071
Power 2				-.487(-.760, -.231)	.133	.001
Power 3				.044(-.181, .291)	.120	.739
Love 0				.731(-5.684, 6.760)	3.103	.785
Love 1				.108 (-.060, .272)	.082	.175
Love 2				.219(-.004, .420)	.109	.046
Love 3				.122(-.123, .362)	.123	.337
Freedom 0				-.058(-.307, .173)	.121	.662
Freedom 1				.756(.487, 1.022)	.133	.001

Freedom 2		.269(.051, .519)	.117	.025
Freedom 3		-.035(.216, .159)	.094	.701
<hr/>				
Double Adj. R^2	0.2021		0.2641	
F	23.012		12.217	
p	.000		.000	
$\Delta\rho^2$		0.0620		
<hr/>				

Table 9: Multiple Regression Using Money Domain Variables as Predictors and Financial Knowledge as the Criterion.

	Financial Pos.			Financial Neg.		
	<i>B</i>	<i>SE</i>	<i>t</i>	<i>B</i>	<i>SE</i>	<i>t</i>
Sex	1.27	.50	2.56*	-.67	.55	-1.21
Age	-.06	.02	-2.80**	.04	.02	1.78
Security 1	.23	.10	2.33*	-.68	.11	-6.26**
Security 2	.02	.08	0.19	-.19	.09	-2.08*
Security 3	-.08	.06	-1.28	.05	.07	0.81
Power 1	.26	.02	3.10**	.17	.09	-1.86
Power 2	.36	.11	3.24**	-.54	.12	-4.37**
Power 3	-.07	.08	-0.80	-.03	.09	-0.29
Love 1	.00	.07	0.09	.14	.08	1.78
Love 2	-.26	.09	-2.87**	.18	.10	1.81
Love 3	-.16	.11	-1.48	.10	.12	0.87
Freedom 1	-.31	.11	-2.85**	.72	.12	6.06**
Freedom 2	-.31	.10	-3.02**	.25	.12	2.19*
Freedom 3	-.04	.09	-0.43	-.06	.10	-0.68
Adj. <i>R</i> ²	.14			.29		
<i>F</i>	6.97			15.53		
<i>p</i>	.00			.00		

***p*<.01 **p*<.05

Standardised regression coefficients are reported in the table

Appendix: Empirical Studies: Methodological Characteristics and Demographic and Personality Factors that Influence Money Attitudes

<i>Studies</i>	<i>Scale</i>	<i>n</i>	<i>Sample</i>	<i>Location</i>	<i>Factors that Influence Money Attitudes</i>
Wernimont & Fitzpatrick (1972)	Modified Semantic Differential (MSD)	533	College students, engineers, religious sisters, etc.	Large USA. Midwestern City	Work experience, socioeconomic level, and gender
Yamanchi & Templar (1982)	Money Attitude Scale (MAS)	300	Adults from different professions	Los Angeles and Fresno, CA	
Furnham (1984)	Money Beliefs and Behaviour Scale (MBBS)	256	College students	England, Scotland, and Wales	Income, gender, age, and education
Bailey & Gustafson (1986)	Money Beliefs and Behaviour Scale	NA	College students	USA Southwestern City	Gender

Gresham & Fontenot (1989)	Modified Money Attitude Scale	557	College students and their parents	USA Southwestern Cities	Gender
Bailey & Gustafson (1991)	Modified Money Beliefs and Behaviour Scale	472	College students	USA Southwestern City	Sensitivity and emotional stability
Hanley & Wilhelm (1992)	Money Beliefs and Behaviour Scale	143	NA	Phoenix, Tucson, Denver, and Detroit	Compulsive behaviour
Tang (1992)	Money Ethic Scale (MES)	769	College students, faculty, managers, etc.	Middle Tennessee City	Age, income, work ethic, social, political, and religious values
Bailey & Lown (1993)	Money in the Past and Future Scale	654	College students, their relatives, and other professionals	The western U.S. States	Age
Tang (1993)	Money Ethic Scale (MES)	68 and 249	College students	Taiwan	
Wilhelm, Varesse & Friedrich (1993)	MBBS	559	Adult Americans	USA	Gender, financial progress
Bailey, Johnson, Adams, Lawson, Williams & Lown (1994)	MBBS	344, 291, & 328	Employed adults related to college students	USA Australia Canada	Geographical location
Lim & Teo (1997)	MBBS MAS	200	Students	Singapore	Gender differences
Roberts & Sepulveda (1999)	MAS	273	Adults	Mexican	Compulsive buying
Ozgen & Bayoglu (2005)	Money in the Past and Future Scale	300	Turkish students	Ankara, Turkey	Gender, age, family type
Burgess (2005)	Modified Money Attitude Scale	221	Urban South Africans	Major Metropolitan Cities	Values & culture
Engelberg & Sjoberg (2006)	MAS	212	Swedish students	Sweden	Emotional Intelligence
Christopher, Marek & Carroll (2010)	MPPS	204	Students	USA	Materialism
Klontz, Britt, Mentser & Klontz (2011)	KMSI	422	Adults	USA	Sex, age, race Education, gross income

Tatarko & Schmidt (2012)	MPPS	634	Adults	Russia	Social Capital
Furnham, Wilson & Telford (2012)	Short Money Type Measure (SMTM)	400	Adults	UK	Age Ethnicity Salary Education Politics
Von Stumm, Fenton O'Creevy & Furnham (2013)	SMTM	109472	Adults	UK	Education Income Financial Habits
Taylor, Klontz & Britt (2015)	KMSI-R	326	Students	USA	Sex, Age, Education, etc.
Lay & Furnham, (2019)	NMAQ	268	Adults	UK	Sex, Age, Ideology, work success
Furnham & Murphy (2019)	Money Mindset	3285	Adults	Australian	Sex, Age, Wealth
Furnham & Grover (2020)	NMBQ	402	Adults	UK	Spender-Saver Sex, Age, Wealth
