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Reliability and Convergent Validity of the Klontz Money Script Inventory-Revised (KMSI-R)

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Few contemporary, empirically-based instruments exist to assess attitudes and beliefs about money despite a large research base linking mental health outcomes to financial beliefs. An abbreviated form of the Klontz Money Script Inventory (KMSI), the Klontz Money Script Inventory-Revised (KMSI-R), has been developed to inform mental health practitioners and financial advisors about the money attitudes and beliefs of their clients using an empirically-based instrument. This study examined the technical adequacy of the KMSI-R among a sample of college students ($n = 326$). Results indicate high reliability for the KMSI-R as well as weak-to-moderate positive correlations when compared to the Money Attitude Scales.

Keywords: money scripts; money beliefs; money attitudes; money avoidance; money worship; money status; money vigilance

INTRODUCTION

Research has found that beliefs about money influence mental health (American Psychological Association, 2015), are contributing factors in relationship conflicts and divorce (Dew, Britt, & Huston, 2012; Oggins, 2003), and are linked to depression and suicide (Gerson, 2008). Beliefs about money have been found to relate to self-esteem and self-worth (Hira & Mugenda, 1999) and money is strongly associated with happiness in many cultures worldwide (Diener & Oishi, 2000). A growing body of research has found that beliefs about money are associated with income, net worth, financial health, choice of profession, and a range of healthy and disordered financial behaviors (Britt, Klontz, Tibbetts, & Leitz, 2015; Klontz & Britt, 2012; Klontz, Britt, Mentzer, & Klontz, 2011; Klontz, Seay, Sullivan, & Canale, 2014; Klontz, Sullivan, Seay, & Canale, 2015). While the impact of

financial beliefs on behaviors and financial outcomes cannot be overstated, relatively few empirically-based scales exist to assess money beliefs.

Perhaps the most well-known empirically-based scale aimed at assessing money beliefs is the Money Attitude Scale (MAS; Yamauchi & Templer, 1982). The MAS was developed after its authors noted that people tend to associate net worth with self-worth and that money provokes anxiety in some people, while relieving anxiety in others. The MAS divides money beliefs into four factors: power-prestige, retention-time, distrust, and anxiety. Interestingly, Yamauchi and Templer failed to find a connection between money attitudes and income. While the MAS was described as a measure to assess money attitudes, approximately one-third of the items were worded to reflect money behaviors (e.g., "I keep track of my money" & "I follow a careful financial budget"). As such, it is more accurate to describe the MAS as a measure of money beliefs and behaviors. Two-years after the MAS was created, Furnham (1984) adapted items from the scale and other measures to construct the Money Beliefs and Behavior Scale. The Money Beliefs and Behavior Scale divides money beliefs and behaviors into six factors: obsession, power, retention, security, inadequacy, and effort/ability. The Money Ethic Scale (MES; Tang, 1992) expanded assessment of money beliefs to include affective, cognitive, and behavioral dimensions. The MES consists of six factors: money is good, money is evil, money represents achievement, money is a sign of respect, budgeting is important, and money is power. The items for these instruments were created by the authors and were not developed from clinical observations from actual clients.

The Klontz Money Scripts Inventory (KMSI; Klontz, Britt, Mentzer, & Klontz, 2011) was designed to assess money beliefs among members of the general population. The four subscales of the KMSI (Money Avoidance, Money Worship, Money Status, and Money Vigilance) were developed to be applicable to anyone engaging in some level of financial decision making, regardless of whether or not they exhibit problematic financial behaviors. Individual items were created based on the authors' work with clients over 10 years in a financial therapy treatment program (see Klontz, Bivens, Klontz, Wada, & Kahler, 2008). It was developed using a clinical approach to item creation, which was hypothesized to have increased clinical utility. The KMSI-R is a shortened form of its more comprehensive predecessor and has been used in three studies to date (Britt, Klontz, Tibbetts, & Leitz, 2015; Klontz, Seay, Sullivan, & Canale, 2014; Klontz, Sullivan, Seay, & Canale, 2015). Instead of having items constructed by experts, the items on the KMSI and KMSI-R were generated and gathered directly from financial therapy clients using a variety of techniques, including Money Script Word Associations (Lawson, Klontz, & Britt, 2015). In contrast to the MAS (Yamauchi & Templer, 1982), the KMSI was found to be significantly associated with income, net worth, and other financial health indicators (Klontz et al., 2011).

Central to item development of the KMSI, and by extension the KMSI-R, is the concept of *money scripts*. A money script is essentially a belief that an individual holds about money (Klontz & Klontz, 2009). Money scripts are hypothesized to have been "developed in childhood, often passed down from generation to generation in family systems, typically unconscious, contextually-bound, and are a factor that drives much of one's money behaviors" (Klontz et al., 2011, p. 2). Money scripts, and the KMSI-R as a

whole, are influenced by Bandura's (1977) social learning theory, which posits that social learning occurs through the interaction of personal factors, environmental factors, and behavior. Money scripts take into account personal factors, as they are based on an individual's beliefs, environmental factors, as they are contextually bound and often modeled in a family system, and behavior, which both drives and is driven by money beliefs.

General Structure of the KMSI-R

A shorter form of the KMSI, the Klontz Money Script Inventory-Revised (KMSI-R) was recently developed and consists of 32 items as a streamlined alternative to the more comprehensive 51-item KMSI. Items were removed from the KMSI that had factor loadings of less than .40 and that did not significantly contribute to the subscales' Cronbach's alpha. The KMSI-R has demonstrated strong reliability in several large-sample studies (Britt et al., 2015; Klontz et al., 2014; Klontz et al., 2015). The KMSI-R consists of the same four subscales as the KMSI (i.e., Money Avoidance, Money Worship, Money Status, and Money Vigilance) and the KMSI-R consists entirely of select items from the original measure. The Money Avoidance subscale of the KMSI-R consists of 10 items. The Money Worship and Money Status subscales of the KMSI-R both consist of 7 items. The Money Vigilance subscale of the KMSI-R consists of 8 items. All items ask respondents to what extent they endorse statements/beliefs about money (money scripts) on a six-point Likert scale (strongly disagree, disagree, disagree a little, agree a little, agree, strongly agree).

Money Avoidance

The KMSI-R defines money avoidance as the belief that money is bad, anxiety-provoking, fear-inducing, and associated with feelings of disgust. Money avoiders often feel as if they do not deserve money (Klontz et al., 2011). It has been hypothesized that money avoidance can lead to disordered money behaviors such as financial denial, financial rejection, underspending, and excessive risk-aversion (Klontz & Klontz, 2009). Money avoiders may also engage in financial self-sabotage, avoid spending money on reasonable or necessary purchases, and worry about over-drafting their checking accounts or abusing their credit cards (Klontz et al., 2011). Klontz et al. (2011) found that money avoiders tend to have lower or unknown levels of net worth and tend to be young and single, and that people become less likely to endorse money avoidant beliefs as they age. Research has also found that money avoidance beliefs predict workaholism, financial dependence, and financial denial behaviors, such as trying to forget about one's financial situation, financial enabling, and difficulty sticking to a budget (Klontz & Britt, 2012). Money avoidance has also been linked to one's chosen profession, with mental health practitioners demonstrating higher levels of money avoidance than some other professions (Britt et al., 2015; Klontz & Britt, 2012).

Money Worship

Money worship is the belief that more money will make things better (Klontz, Kahler, & Klontz, 2008). Despite the high prevalence of this belief in today's society, limited

empirical evidence exists to suggest that money solves life problems, and it has been reported that there is no significant correlation between happiness and money after household incomes reach \$75,000 per year (Kahneman & Deaton, 2010). Money worship can lead to disordered money behaviors such as compulsive hoarding, unreasonable risk-taking, pathological gambling, workaholism, overspending, and compulsive buying disorder (Klontz & Klontz, 2009). Klontz et al. (2011) found that money avoiders tend to be young, single, and White and have lower or unknown levels of net worth. Similar to money avoidance, younger respondents tend to endorse higher levels of money worship than older respondents. Research has found that money worship beliefs predict compulsive buying behaviors, hoarding, workaholism, financial dependence, financial enabling, and financial denial (Klontz & Britt, 2012), and are associated with less engagement in risk planning (Britt et al., 2015). Money avoiders also tend to carry revolving credit card debt (Klontz et al., 2011).

Money Status

Money status equates net worth with self-worth and espouses a materialistic, competitive worldview (Klontz et al., 2011). Money status is associated with accruing more possessions than others, and those endorsing high levels of money status see clear distinctions between socio-economic classes. Klontz et al. (2011) found that individuals scoring high on the Money Status subscale tend to be young, single, less educated, and less wealthy. However, money status is not as highly associated with age and marital status as money avoidance and money worship. Klontz and Klontz (2009) hypothesized that less wealthy and less educated individuals endorse higher levels of money status beliefs because these individuals compare themselves to more educated people who hold more prestigious jobs, leading to lower levels of self-esteem. These individuals then become engaged in more risk-taking behaviors as they seek to rapidly attain wealth in order to raise their perceived social status. Excessive concern about financial success and materialism is associated with lower levels of well-being (Tatzel, 2002) and higher levels of anxiety, physical symptoms, and unhappiness (Kasser & Ahuvia, 2002). Money status can lead to disordered money behaviors such as overspending and excessive risk-taking (Klontz & Klontz, 2009). Research has found that money status beliefs predict compulsive buying behaviors, gambling disorder, financial dependence, and financial infidelity (Klontz & Britt, 2012).

Money Vigilance

Regardless of one's net worth, people endorsing high levels of money vigilance see money as a source of shame and secrecy and tend to view money with alertness, watchfulness, concern, and with an attitude of pending trouble or danger (Klontz & Klontz, 2009; Klontz et al., 2011). Some degree of money vigilance is common in today's society, as nearly half of households consider discussion of money a sensitive topic (Medintz, 2004). Money vigilance is associated with disordered money behaviors that may result in insufficient preparation for retirement, and people with money vigilant beliefs may not fully enjoy the benefits and security that money can provide (Klontz et al., 2011). Klontz et al. (2011) found that non-White individuals of lower income tend to score lowest on the

Money Vigilance subscale. Individuals endorsing high levels of money vigilance tend to not have revolving credit card debt (Klontz et al., 2011) and are more likely to have planned for financial risks (Britt et al., 2015). Research has found that money vigilance beliefs serve as a protective factor. Specifically, the money vigilant are significantly less likely to exhibit compulsive buying, gambling disorder, financial enabling, financial dependence, and financial infidelity (Klontz & Britt, 2012).

METHODS

Purpose

Over recent decades, a plethora of “money tests” purporting to measure money attitudes and behaviors have arisen on the internet and in consumer magazines. However, many of these money tests have not been empirically scrutinized and lack psychometric research. As the KMSI-R is a recently developed instrument, the present study seeks to examine the technical adequacy of the assessment and to test associations with the MAS, a well-established assessment of money beliefs/attitudes. Therefore, the purpose of this study was twofold: (a) to examine the reliability KMSI-R among a sample of college students through comparing internal consistency correlations with those demonstrated in recent previous studies and (b) to examine convergent validity of KMSI-R subscales through comparison to the MAS.

Data and Sample

A sample consisting of 326 students enrolled at a four-year university in the Midwest region of the United States was recruited for participation in this study. Research has found that young adults are more likely to exhibit a range of problematic money beliefs and financial behaviors (Klontz, Britt, Archuleta, & Klontz, 2012; Klontz, Britt, Mentzer, & Klontz, 2011), and as such, were thought to be a good population from which to draw participants. Students were recruited from lecture classes and posters displayed in public locations on the campus, inviting students to participate in an online survey. At the end of the survey, respondents were invited to send an email to the researchers indicating that they completed the survey to participate in a drawing for 1 of 5 \$20 gift cards. About half of the sample was 20 years of age or younger, and 14 participants were age 30 years of age or older. The sample was majority female ($n = 264$), Caucasian ($n = 266$), and single ($n = 265$). For full demographic data, please see Table 1.

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Table 1

Demographic Data

Variable	Percent of Sample (<i>n</i> = 326)
<i>Gender</i>	
Male	18.4%
Female	81.0%
<i>Race/Ethnicity</i>	
Hispanic	4.6%
African-American	3.4%
Caucasian	81.6%
Asian-American	8.0%
Pacific Islander	4.3%
Native American	1.5%
Other	4.0%
<i>Marital Status</i>	
Married	6.1%
Never Married	82.0%
Not Married but Living with a Significant Other	8.3%
Separated	0.0%
Divorced	1.2%
Widowed	0.0%
<i>Year in School</i>	
Freshman	19.6%
Sophomore	20.6%
Junior	24.8%
Fourth Year Senior	21.5%
Fifth Year Senior or Beyond	10.4%
Master's Student	2.5%
Doctoral Student	0.0%
<i>Current Work Status</i>	
Full-Time Job	6.4%
Part-Time Job	57.7%
Seasonal Job	12.6%
No Job	22.7%
<i>How Many Other People Rely on Income</i>	
0	87.1%
1	7.7%
2	1.5%
3	1.2%
4	1.2%
5	0.0%
6 or more	0.0%
<i>Childhood Socioeconomic Status (SES)</i>	
Lower Class	4.6%
Lower-Middle Class	18.4%
Middle Class	48.2%
Upper-Middle Class	25.2%
Upper Class	2.8%

Prior to analysis, data were screened for distributional properties (Table 2). Skewness and kurtosis values for composite scores of all scales were within acceptable limits (i.e., less than |2.0|; Tabachnick & Fidell, 2012).

Table 2

Means and Standard Deviations of the KMSI-R Subscales

Subtest	KMSI-R	
	M	SD
Money Avoidance	26.01	6.99
Money Worship	22.14	6.57
Money Status	13.39	4.57
Money Vigilance	31.87	5.14

Comparison Measure

Money Attitude Scale (MAS; Yamauchi & Templer, 1982). The MAS is a 29-item assessment used to measure money attitudes. The MAS is divided into four subscales: Power-Prestige, Retention-Time, Distrust, and Anxiety. The Power-Prestige subscale consists of 9 items, the Retention-Time and Distrust subscales each consist of 7 items, and the Anxiety subscale consists of 6 items. This four-factor structure was supported by factor analytic research (Yamauchi & Templer, 1982), and each of the four subscales exhibits adequate reliability, as demonstrated through acceptable internal consistency values (Power-Prestige $\alpha = .80$; Retention-Time $\alpha = .78$; Distrust $\alpha = .73$; Anxiety $\alpha = .69$). Each subscale has also demonstrated partial convergent validity with measures of analogous psychological traits. Every item of the MAS item is presented on a 7-point Likert scale. The MAS was chosen as a comparison measure over the Money Beliefs and Behavior Scale and the Money Ethics Scale, as it is a more widely used and researched scale.

RESULTS**Reliability**

To examine the reliability of the KMSI-R, internal consistency (α) was calculated for each subscale (Table 3). These internal consistency values, obtained from a sample of college students, could then be compared to the internal consistency values obtained in previous research. All of the subscales from the KMSI-R demonstrated good or acceptable internal consistency using the suggestions for interpreting internal consistency values set forth by George and Mallory (2003), with the exception of the Money Vigilance subscale, whose reliability is in the questionable range. Internal consistency values obtained in the present study are commensurate with those obtained in previous studies. Additionally, relations between subscales of the KMSI-R were examined. Significant, positive correlations existed between some of the subscales of the KMSI-R. This indicates that certain subscales, such as Money Worship and Money Status, are related to one another,

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while others, such as Money Worship and Money Avoidance, are not significantly related to one another (Table 4).

Table 3

Internal Consistency of the KMSI-R

KMSI-R	Klontz et al., 2014 (n = 351)	Britt et al., 2015 (n = 264)	Klontz et al., 2015 (n = 1090)	Present Study (n = 326)
Money Avoidance	.84	.80	.82	.82
Money Worship	.69	.77	.68	.82
Money Status	.75	.71	.73	.76
Money Vigilance	.66	.55	.58	.66

Table 4

Correlations between KMSI-R Subscales

	Money Avoidance	Money Worship	Money Status	Money Vigilance
Money Avoidance	---	.11	.37**	.10
Money Worship		---	.49**	.21**
Money Status			---	.16*
Money Vigilance				---

** p < .001. * p < .05. Df = 248.

Validity

Scores from the KMSI-R were compared to scores from the Money Attitude Scale (Table 5). Significant, positive relations were found between the Power-Prestige subscale of the MAS and all four subscales of the KMSI-R, with the exception of the Money Vigilance subscale. Correlations between the Power-Prestige and Money Worship and Money Status subscales were greatest in strength. Significant, positive relations were found between the Retention-Time subscale of the MAS and the Money Status and Money Vigilance subscale of the KMSI-R, with the Money Vigilance subscale exhibiting strong-to-moderate convergence. Significant, positive correlations were observed between the Distrust subscale of the MAS and all subscales of the KMSI-R, with the exception of the Money Status subscale of the KMSI-R. Moderate convergence was observed for the Money Vigilance subscale. Similarly, significant, positive correlations were observed between the Anxiety subscale of the MAS and all subscales of the KMSI-R, with the exception of the Money Status subscale. This convergence was generally weak, with the exception of moderate convergence for the Money Worship subscale.

Table 5

Convergent Validity of the KMSI-R with the MAS

KMSI-R Subscale	MAS Subscale	Correlation	df
Money Avoidance	Power-Prestige	.19**	240
Money Worship		.42**	
Money Status		.53**	
Money Vigilance		.10	
Money Avoidance	Retention-Time	-.03	237
Money Worship		.08	
Money Status		.14*	
Money Vigilance		.41**	
Money Avoidance	Distrust	.18**	237
Money Worship		.17**	
Money Status		.10	
Money Vigilance		.35**	
Money Avoidance	Anxiety	.16*	241
Money Worship		.25**	
Money Status		.11	
Money Vigilance		.18**	

** $p < .001$. * $p < .05$

DISCUSSION

The KMSI-R addresses the need for a contemporary, empirically-based assessment that can measure people's beliefs about money through a shorter, more streamlined alternative to its predecessor, the KMSI. Unlike the MAS, which assesses money beliefs and behaviors, the KMSI and KMSI-R were designed to measure money beliefs exclusively. Assessments, such as the MAS and KMSI-R, offer people insight into their own financial beliefs, which often lie outside of conscious awareness (Klontz & Klontz, 2009) and offer valuable information to financial planners and mental health professionals that can aid in service provision. The KMSI-R is theoretically grounded in social learning theory, was developed based on clinical work, was created using factor analysis (Klontz et al., 2011), and, including the present study, has demonstrated strong reliability on five separate occasions. As reliability is a necessary but insufficient requirement for validity (Elasy & Gaddy, 1998), the present study sought to establish convergent validity through comparison to a similar measure, the MAS.

The MAS is perhaps the most well-researched measure of money attitudes and behaviors, and the two-decade old measure consists of four subscales: Power-Prestige, Retention-Time, Distrust, and Anxiety. The Power-Prestige subscale of the MAS, which is defined as the use of money to influence others or show status (Yamauchi & Templer, 1982), aligns theoretically most closely with the Money Worship and Money Status

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subscales of the KMSI. This theoretical alignment was supported through convergent validity analysis, as these subscales exhibited the strongest correlations with one another. The Retention-Time subscale of the MAS, which is defined as being prepared for one's financial future, aligns theoretically most closely with the Money Vigilance subscale of the KMSI-R. Again, this theoretical alignment was supported through convergent validity analysis. The Distrust subscale of the MAS, which is defined as the state of not wanting to spend money, theoretically aligns most closely with the Money Avoidance and Money Vigilance subscales of the KMSI-R. Empirically, convergent validity analysis showed the highest correlations between these subscales, though interestingly, Money Status was also shown to be related to Distrust. The Anxiety subscale of the MAS, which is defined as a state of worry about money and the desire to spend money, seems to be theoretically involved in all subscales of the KMSI-R. Empirically, all subscales of the KMSI-R, with the exception of the Money Status, were correlated with the Anxiety subscale, and the Money Worship subscale exhibiting the strongest convergence. Essentially convergent validity analysis supports relations between theoretically analogous scales of the MAS and the KMSI-R, which seems to indicate that the two measures are assessing similar, but not completely overlapping, areas of beliefs about money.

Limitations and Future Directions

The chief limitation of this study is that a sample of college students was used rather than the population at-large. Although previous research has demonstrated adequate reliability for the KMSI-R drawn from the general population (e.g., Klontz et al., 2015), validity results from the present study may not generalize to a sample not exclusively consisting of college students. Another limitation is that the present study only examined convergent validity between the MAS and the KMSI-R. Future studies may seek to examine convergent validity of both the MAS and the KMSI-R with other instruments (e.g., the Money Beliefs and Behavior Scale or the Money Ethic Scale).

It should be noted that one or more of the authors of the present study were involved in the creation of the KMSI-R and have some financial interest in the measure. Currently, the KMSI-R is not a public domain instrument, but can be accessed for research and non-commercial use with permission from Dr. Brad Klontz.

Conclusion

The MAS and the KMSI-R are both assessments that allow people to gain insight into their own money attitudes and can assist financial planners and mental health professionals in service provision. Both instruments are similar in length, as the MAS contains 29-items and the KMSI-R contains 32-items. Both instruments boast similar reliability, as the mean reliability of the MAS composites is .75 and the mean reliability of the KMSI-R composites is .77. Each assessment has one composite area that has lower-than-adequate internal consistency values (the Anxiety subscale from the MAS and the Money Vigilance subscale from the KMSI-R). Both instruments offer empirically-supported alternatives to "money scales" published on the internet and in consumer magazines that commonly lack psychometric support. Given that the length and technical adequacy of the

MAS and KMSI-R are similar, prospective users may consider other factors (e.g., availability, contemporariness, familiarity, ease of scoring, personal preference) when selecting which assessment best meets their needs.

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