EXPLORING A NEW CONCEPT OF EMBEDDING GOLD DINAR AS MECHANISM FOR HAJJ TRAVELLING

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ABSTRACT

Oftentimes consumers are complaining if they have (own) gold dinar, how they can use it to buy things or services. This study is intended to address this issue by introducing a new concept of embedding gold dinar as mechanism for Hajj travelling. It is foreseen that those who keep their money in a form of gold would be able to travel faster (i.e. earlier) than those who keep it in the form of paper money. Therefore, this research is intended to explore whether consumers would be willing to adopt the new concept of using gold dinar as mechanism for travelling. The research framework will be based on Innovation Diffusion Theory (IDT) with two new variables added, namely anxiety, and attitude toward using. It will measure the user acceptance from this theoretical framework i.e. intention to use, relative advantage, compatibility, complexity, trialability, observability, anxiety, and attitude toward using. Questionnaire surveys and interviews will be used for data collection. Structural equation modelling (SEM) will be used to analyse the data. The results will be useful for Hajj travellers, frequent (air) travellers, Tabung Haji, travel agents, local banks, and the public who may be travelling in the future.

Keywords: Inflation, gold dinar, Hajj (pilgrimage), Innovation Diffusion Theory

1. INTRODUCTION

Since its first inception in 1971, it has already been a known fact and being reported in many literatures that paper money is highly inflationary in nature (Barisheff, 2006; Lewis, 2007; Turk and Rubino, 2004). Barisheff (2006) has reported that US dollar has lost 82% of its purchasing power, as measured by the Consumer Price Index (CPI) since 1971. Mathematics calculation would reveal even more startling figures about paper money's inflation. Back then in 1971 the price of gold was $35 per ounce (Lewis, 2007). At its highest price (05 September 2011), one needs to fork out $1,896 (Kitco Inc., 2011) to buy exactly the same one ounce of gold. Thus, from 1971 to 2011 (in 40 years), in terms of US dollars, the inflation has gone up by 5317% i.e. (1896-35)/35 x 100%. Or equivalently, for the duration of 40 years, the US dollar has lost 5317% of its purchasing power.

Due to the ability of central banks to print paper money practically with "no limit", the existing (paper) money would therefore be subjected to continuous and boundless price inflation. According to Merriam-Webster dictionary (Merriam-Webster, 2012), inflation is defined as "a continuing rise in the general price level usually attributed to an increase in the volume of money and credit relative to available goods and services". The highly inflationary nature of paper money was strongly insisted by Paarlberg (1993) whom had claimed that inflation is the world's greatest robber. He stated that inflation steals from widows, orphans, bondholders, retirees, annuitants, beneficiaries of life insurance, and those on fixed salaries by decreasing the value of their incomes. Furthermore, he had analyzed 15 major inflations throughout the history. He recorded historical prices of important commodities for 30 countries, from year 1937 to 1988, in order to illustrate the disastrous effect of paper money inflation. Jastram (2009) reported that in the last third of the twentieth century, United

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States had experienced increase in price levels by more than five-fold and the U.K. had it by more than eleven-fold. Table 1 below illustrates this point further. For an instance, in the year 2007, U.S. prices were almost 25 times greater than that in the year 1900 (base year) while for the U.K., the prices were almost 90 times greater than that in the year 1900.

Table 1: Consumer price levels in the twentieth century

Indices, 1900 = 100

	1900	1935	1965	2000	2007
USA	100	164	378	2,063	2,484
UK	100	173	635	7,302	8,859

Adapted from Jastram (2009).

Most of the times ordinary people are complaining if they have (own) gold or dinar; how they could use it to buy things or services. This study is intended to address this issue by introducing a new concept of embedding gold dinar as mechanism for Hajj travelling. It is foreseen that if people can keep their money in a form of gold rather than in paper money, they would be able to buy things or services with greater appreciating value (Muhayiddin et al., 2011). As in the case of travelling activities, it is expected that consumers who save their money in gold or dinar would be able to travel faster (i.e. earlier) compared to those who save it in the form of paper money. The research objectives for this proposed study are as follows:

1) To explore the perception of consumers with regards to the new concept of gold dinar for travelling.
2) To investigate various factors that influence consumers to adopt gold dinar for travelling.
3) To investigate the effect of two new added variables on the original Innovation Diffusion Theory.
4) To develop a new concept of gold dinar as mechanism for travelling.

2. REAL PRICES BASED ON SECONDARY DATA

In order to be as close to a practical situation as possible, this study uses actual data (from real Malaysian market) to show the superior performance of gold's purchasing power when compared to that of Ringgit Malaysia (RM). Prices of a few inflationary items are shown in RM as well as their corresponding prices in dinar (gold). In this case, the price performance (purchasing power) between these two competing currencies can be compared side by side. The readers can therefore make a straight-forward comparison on the performance of purchasing power between fiat currency and that of sound money (dinar).

Tables 2 to 4 below illustrate the performance of dinar as compared to the performance of fiat currency (i.e. RM) for various critical consumer items and services. It is to be noted that dinar is to be used for high-priced items whereas dirham is used for low-priced items. Table 5 shows salary comparison -- paid in dinar versus that paid in Ringgit Malaysia (RM).

Table 2: Fuel price comparison (in RM and Dinar)

Petrol (50 liter)	RM	Dinar
2000	60.00	0.428
2011	95.00	0.146
Price increase/decrease	**+ 58%**	**- 66%**

Diesel (50 liter)	RM	Dinar
2000	35.50	0.253
2011	90.00	0.138
Price increase/decrease	**+ 154%**	**- 46%**

Note:
- ❖ Prices of gold are USD270 and USD1592.50 respectively per ounce in Oct. 2000 and July 2011 (London fix spot price).
- ❖ Prices of petrol are RM1.20 and RM1.90 respectively per liter in 2000 and 2011.
- ❖ Prices of diesel are RM0.71 and RM1.80 respectively per liter in 2000 and 2011.

Table 3: Electricity price comparison (in RM and Dinar)

Electricity (Domestic, 400kWh)	RM	Dinar
2000	92.52	0.660
2011	160.00	0.245
Price increase/decrease	**+ 73%**	**- 63%**

Electricity (Commercial, 1000kWh)	RM	Dinar
2000	288.00	2.054
2011	430.00	0.659
Price increase/decrease	**+ 49%**	**- 68%**

Note:
- ❖ Prices of gold are USD270 and USD1592.50 respectively per ounce in Oct. 2000 and July 2011 (London fix spot price).
- ❖ Please refer to http://www.tnb.com.my for electricity tariff.

Table 4: Construction-related items price comparison (in RM and Dinar)

Cement (4 bags=200 kg)	RM	Dinar
2000	39.60	0.282
2011	74.00	0.113
Price increase/decrease	**+ 87%**	**- 60%**

Steel (25 mm, 1 ton)	RM	Dinar
2000	1085.00	7.740
2011	2400.00	3.676
Price increase/decrease	**+ 121%**	**- 53%**

Note:
- ❖ Prices of gold are USD270 and USD1592.50 respectively per ounce in Oct. 2000 and July 2011 (London fix spot price).

Table 5: Salary comparison in RM and Dinar

Salary Paid (Malaysia)	Dinar	RM
Jan 1992	**15.50**	**1,800***
Jan 2007	15.50	4,968
Feb 2009	15.50	6,975
Oct 2009	15.50	7,838
Jun 2010	15.50	8,560
July 2011 (1 dinar=RM652)	15.50	10,119

Note:

- Price of gold in Jan. 1992 is USD340 per ounce.
- Price of gold in Jan. 2007 is USD690 per ounce.
- Price of gold in Feb. 2009 is USD915 per ounce.
- Price of gold in Oct. 2009 is USD1050 per ounce.
- Price of gold in Jun. 2010 is USD1241 per ounce
- Price of gold in July 2011 is USD1592.50 per ounce.
- *RM1800 is an average starting salary for a fresh engineer in Malaysia in 1992.

(All gold prices are based on London fix spot price)

It is to be noted that oil and electricity prices are two inflationary items whereby any price increase in these two items will subsequently give rise to prices of other daily food items (Barisheff, 2006; Leeb and Strathy, 2006). Similarly, construction items will give subsequent price rise to construction-related markets such as commercial (office) and residential (house) buildings. As for the case of salary, Table 5 clearly shows that dinar preserve the value of salaries over time. Apparently, salaries paid in dinar appreciate over time automatically, even without annual increments.

It should be noticed from the tables above that the performance of dinar is much superior as compared to that of RM (or other fiat money). Apparently in all tables, what appears to be a "price increase (inflation)" in RM is simply a "price decrease" in dinar. It becomes obvious from the above tables that dinar (gold) is able to preserve their "intrinsic value"; whereas the paper (fiat) money just could not do that. All of the tables above (Table 1 to 5), shows the price inflations based on secondary data in Malaysia. Other countries had also experienced very similar situation with price inflations albeit much worst case scenario compared to Malaysia. Paarlberg (1993) had analyzed a total of 15 major inflations throughout history. He had recorded historical prices of important commodities from 1937 to 1988 for 30 countries. Table 6 below depicts the 15 inflations as per reported by Paarlberg (1993).

Table 6: The Fifteen Inflations

		Dates of inflation	Commodity Price Index at End of Upsurge (beginning date = 1)	Annual Percentage Rate of Increase
1.	Ancient Rome	150-301	200.0	5.6
2.	Black Death (most of Europe)	1348-1351	2.4	5.8
3.	Spain	1501-1600	4.2	1.5
4.	John Law (France)	1717-1720	2.0	26.0
5.	American Revolution	1775-1780	32.0	100.0
6.	French Revolution	1790-1796	285.0	157.0
7.	U.S. Civil War, North	1861-1864	2.1	28.0
8.	U.S. Civil War, South	1861-1865	91.0	209.0

9.	Germany	1910-1923	$143x10^{10}$	1174.0
10.	Russia	1913-1924	$171x10^{8}$	752.0
11.	Hungary	1945-1946	$400x10^{25}$	$3x10^{27}$
12.	China	1937-1949	$126x10^{13}$	1451.0
13.	Bolivia	1972-1985	$103x10^{3}$	143.0
14.	Brazil	1937-1988	$800x10^{7}$	56.0
15.	United States	1933-1987	7.7	3.8

Adapted from Paarlberg (1993)

Based on the presented tables above that the paper money has obvious weaknesses in preserving the true value of money itself. Therefore this study is proposing a new concept to counter that effect of price inflations; by focusing on embedding gold dinar as mechanism for Hajj travelling. Historical prices for cost of Hajj for Muassasah and for lowest Package are shown in Table 7 and Table 8 respectively. In Table 7, the price increase in cost of Hajj for Muassasah is not so significant considering a portion of the prices are subsidized by the Malaysian government. However Table 8 reflects the true prices of cost for performing Hajj. From 1989 to 2009 (20 years), the price of performing Hajj had increased by exorbitant rate of 216.8% i.e. (19,990-6,309)/6,309 x 100%. In order to counter this disastrous effect of inflation in paper money, this study is proposing the saving for performing Hajj be kept in gold dinar instead of in paper money. Based on the performance of gold dinar in Table 1 to 5 above -- it is forseen that the price of performing Hajj in terms of gold dinar -- will at least remain constant. Or gold dinar may give even better result i.e. cost of Hajj in terms of gold dinar will be decreasing. This is due to the appreciation of gold dinar's value compared to the value of paper money. Table 9 clearly depicts this superior performance of gold dinar compared to paper money. Referring to Table 9, from 2002 to 2011 (9 years), the cost of Hajj in Ringgit Malaysia has increased by +52%. Ironically, the same cost of Hajj in gold dinar for the same years has decreased by -66%. So no inflation in gold dinar in this particular case.

Table 7: Historical Cost of Hajj* in RM (Muassasah)

Cost of Hajj (Wang Naik Haji)	**RM**
1987-1989	5,000
1993-1994	5,930
1995	5,630
1996-1997	6,000
2000-2001	8,585
2002-2003	9,445
2004-2008	8,973
2009-2012	9,980
2013 (first time)	9,980
2013 (second time onwards)	15,555

Source: Tabung Haji (TH) Annual Report.

Note:
In general, the cost to perform Hajj is very similar to the cost of travelling (by air).

Table 8: Historical Cost of Hajj in RM (Package)

Cost of Hajj (Lowest Package)	RM
1989	6,309
1994	8,990
2002	13,500
2007	14,990
2008	16,490
2009	19,990
2010	19,490
2011	20,490
2012	23,490

Source: Tabung Haji (TH) Annual Report.

Note:
All prices are based on the lowest THTS package, except for year 1989 which is operated by Al-Hussam (THTS: TH Travel & Services)

Table 9: Cost of Hajj in RM and Dinar

Cost of Hajj (lowest package THTS)	RM	Dinar
2002	13,500	93.53
2011	20,490	31.39
Price increase/decrease	**+ 52%**	**- 66%**

Source: Tabung Haji (TH) Annual Report.

Note:
Prices of gold are USD278 and USD1592.50 respectively per ounce in 2002 and 2011 (based on London fix spot price).

3. THEORETICAL FRAMEWORK

An understanding of user acceptance models is very important in order to fully appreciate why one model is chosen over the other. Researchers are always confronted with choosing the most appropriate model for their particular researches. Most of the times, they must "pick and choose" constructs among the various models available. Alternatively, they may choose one "favored model" and largely ignore the possible contributions from other models. Since 1960s, IDT (Rogers, 1995) has been used to study various innovation elements in several fields of studies. Rogers (1995) insisted that each innovation is unique in a sense that some new technologies require only a few years to be successfully adopted whereas others may require much longer time. The element of attributes as perceived by an individual may explain why different innovations require different rate of adoption. Several factors have been identified to have influence over adoption of innovations (Rogers, 1995). Those factors are:

(1) Relative advantage;
(2) Complexity;
(3) Compatibility;
(4) Triability; and
(5) Observability

The research framework for this work is adapted from IDT with two additional variables added. This study intends to find out the consumer acceptance of using gold dinar for Hajj travelling based on the

five original constructs of IDT model. Those constructs are relative advantage, complexity, compatibility, trialability, and observability. The two additional variables, anxiety, and attitude toward using, are hypothesized to be very relevant to this study and therefore their influence is expected to be significant in the proposed model. Anxiety is adapted from Compeau and Higgins (1995) as well as Venkatesh et al. (2003). Attitude toward using technology is adapted from Davis et al. (1989), as well as Taylor and Todd (1995). The constructs used in this research framework are explained in Table 10 below.

Table 10: IDT core constructs

Core Constructs	Definitions
Relative Advantage	"the degree of which an innovation is perceived as being better that its precursor" (Moore and Benbasat, 1991, p. 195).
Complexity	"the degree of which an innovation is perceived as being difficult to use" (Moore and Benbasat, 1991, p. 195).
Compatibility	"the degree of which an innovation is perceived as being consistent with the existing values, needs, and past experiences of potential adopters" (Moore and Benbasat, 1991, p. 195).
Trialability	"the tangibility of the results of using the innovation, including their observability and communicability" (Moore and Benbasat, 1991, p. 203).
Observability	The degree of which usage of the system in the organization can be visibly observed by others (Moore and Benbasat, 1991).
Anxiety	"Evoking anxious or emotional reactions when it comes to performing a behavior (e.g., using a computer)" (Venkatesh et al., 2003, p. 432).
Attitude Toward Using	"defined as an individual's overall affective reaction to using a system" (Venkatesh et al., 2003, p. 455).

Therefore, the research framework will be based on IDT with two new variables added, namely anxiety, and attitude toward using. There shall be 8 variables involved, namely intention to use, relative advantage, complexity, compatibility, trialability, observability, anxiety, and attitude toward using. The hypotheses of the study are as follows:

No.	Hypothesis	References
H1	Relative advantage would have positive influence on consumers' intention to adopt gold dinar for Hajj travelling.	Tan & Teo (2000); Venkatesh et al. (2003)
H2	Compatibility would have positive influence on consumers' intention to adopt gold dinar for Hajj travelling.	Tonatzky & Klein (1982)
H3	Complexity would have negative influence on consumers' intention to adopt gold dinar for Hajj travelling.	Thompson et al. (1991)
H4	Trialability would have positive influence on consumers' intention to adopt gold dinar for Hajj travelling.	Agarwal & Prasad (1997); Tan & Teo (2000)
H5	Observability would have positive influence on consumers'	Moore & Benbasat (1991)

	intention to adopt gold dinar for Hajj travelling.	
H6	Anxiety would have negative influence on consumers' intention to adopt gold dinar for Hajj travelling.	Compeau & Higgins (1995)
H7	Attitude toward using would have positive influence on consumers' intention to adopt gold dinar for Hajj travelling.	Davis et al. (1989); Taylor and Todd (1995)

4. METHODOLOGY

This research focuses on quantitative results whereby an analysis and classification of numerical data will be collected from survey questionnaires. The questionnaires will be developed based on various literature reviews and based on IDT with two new variables added namely anxiety and attitude toward using. All surveys consist of a closed-ended question. Respondents will only choose answers already provided with the questions. Initially, the survey will be distributed to 30 respondents as a form of pilot study. Eventually, after considering various feedbacks from the pilot study, final survey questionnaires will then be developed and distributed to 400 respondents in Klang Valley and Kelantan areas. Klang Valley is chosen because it is expected that the highest number of Hajj travelers are coming from this area. Whereas Kelantan is selected to represent a sample of a rural-state area. 400 samples is decided based on Dillman et al. (2009) which shows that for a population of 1,000,000,000 in number, only 384 sample is needed to represent the population (with ±5% sampling error). It is to be noted that since this research is still at exploring stage, the convenience sampling method will thus be applied. Section A of the survey consists of questions related to respondents' information such as gender, race, age, monthly income, educational attainment, marital status, employment status, e-commerce usage experience, and average use of e-commerce applications. Other sections contain questions related to 5 variables coming from IDT namely, relative advantage, compatibility, complexity, trialability, and observability. As well as sections which contains questions coming from the anxiety, and attitude toward using variables. Lastly, there will be questions which measure behavioral intention to use gold dinar for travelling.

Qualitatively, an interview questionnaire will be developed (based on IDT) to be used for interviewing Tabung Haji and several travel agents personnel. Their perception on this new concept of gold dinar for travelling would be very important for this research. The questions will include the feasibility of implementing such system, the acceptance of the consumers and other related issues. SPSS Statistical Software Package will be used to carry out descriptive analysis of the collected survey data. AMOS and PLS would be employed to investigate multiple regression analysis.

5. CONCLUSION AND LIMITATIONS

This research will propose a new research framework for user acceptance study of gold dinar payment concept in Malaysia, with specific application of using gold dinar for Hajj travelling. The framework for this research is adapted from IDT model with an addition of two new constructs; to suitably explore an 'intention to use' gold dinar for Hajj travelling. The results of descriptive analysis and hypothesis testing will be taken up later in future publications. There appears to be some limitations on this study. Firstly the survey is based on convenience sampling thereby limiting its generalization to the whole population of Malaysian people. Secondly, the choice of physical gold dinar denominations has to be correctly selected such that it shall give the highest returns upon selling it later on for the purpose of Hajj travelling. The more the return of investment (ROI) it accumulates upon the point of sale/purchase; the more significant would be the effect of this concept of embedding gold dinar as mechanism for Hajj travelling.

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