


“Examining factors influencing investment in Digital Gold and Gold ETF using the PCA technique”

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EXAMINING FACTORS INFLUENCING INVESTMENT IN DIGITAL GOLD AND GOLD ETF USING THE PCA TECHNIQUE

Abstract

Digital Gold and Gold Exchange Traded Fund have emerged as an electronic option for investment in gold in India. The purpose of this study is to determine influential factors forming the perception and level of awareness of individuals toward investing in Digital Gold and Gold Exchange Traded Fund, and also analyze the relationship among these influential factors. Data for this quantitative analysis were obtained from a self-administered 5-point Likert questionnaire of 158 respondents who are individual investors investing in either Digital Gold or Gold Exchange Traded Fund to achieve the objectives of the study. Principal Component Analysis has been adapted as a dimension reduction technique to identify the factors impacting the decision of investing in Gold Exchange Traded Fund and Digital Gold. The factors that induce investors to invest in Digital Gold and Gold Exchange Traded Fund as identified in this study are conduciveness, security, and ease of accessibility. The factors that compel investors not to invest in Digital Gold and Gold ETFs are lack of contentment, operational challenges, lack of awareness, brokerage expenses, and infeasibility. The results disclosed that variables such as lack of satisfaction and lack of knowledge have higher factor loadings of 0.997, which indicates that investors are required to be more educated about the Digital Gold and Gold Exchange Traded Fund. Securities and Exchange Board of India, Reserve Bank of India and other regulatory authorities in India may consider regulation of Digital Gold so that it can be accepted as a trustworthy source of investment.

Keywords

Digital Gold, Gold ETF, investment behavior, Principal Component Analysis, India

JEL Classification

C19, D14, E62, G11

INTRODUCTION

Investors' preferences for various investment opportunities vary depending on their perspectives on requirements, advantages, returns, etc. According to a study by Colin Lawrence (2003), gold has consistently delivered outstanding returns over a long period of time, supporting the notion that gold happens to be a powerful portfolio diversifier. One of the safest investment alternatives in Indian culture has always been gold. Gold jewelry is regarded by retail investors in India as a secure and important kind of investment. However, in today's time, there are other choices for investing in gold, including Gold bars, Gold Exchange Traded Funds (ETF), Digital Gold, Sovereign Gold Bonds (SGB), and Gold coins. Investment in gold can also be done in the commodity market as futures and options.

In recent times, an option to invest in gold in electronic form is available to retail investors through Digital Gold and Gold ETF in India, which gives investors a feel of possessing gold without having any problem keeping/storing it in physical form. Gold ETF can be elec-

tronically traded via the stock exchange in India either on National Stock Exchange or Bombay Stock Exchange which provides retail investors a medium of engaging in the gold bullion market keeping aside the obligation of enduring tangible delivery of gold. Digital Gold is another option available for investment in gold where gold can be purchased electronically and protected in safe vaults by the seller on the customer's behalf. As the investor has different options to choose from, it is important to understand which factors drive him to choose a particular investment option.

The Gold (Control) Act, 1968 is an Act of India, which was enacted in 1968 to control sale and holding of gold in personal possession. This Act was brought in for foreign exchange management and economic liberalization of the Indian economy back then. After 1990, Government of India wanted to include the gold deposits with the citizens into the mainstream finance through various gold schemes. Thus, in September 1999, a Gold Deposit Scheme was launched which was further revised in 2015 to utilize the gold held by Indian citizens, but in Indian culture the trading of gold ornaments/jewelry is not so popular. Hence the government came up with Gold ETFs in March 2007. At the time of inflation, the adjusted gold value is more in comparison to the US Dollar or Crude oil price. Thus, gold is also termed as super commodity with characters of international currency and Indian Government or Reserve Bank of India can overcome the economic crisis by effectively managing/hedging the gold reserves. The regulatory authorities for gold as commodity in India are Securities and Exchange Board of India, Reserve Bank of India, Bureau of Indian Standards.

With the evolution of lucrative investment options in gold and increasing demand for gold, it is crucial to study the variables influencing individual investor's decisions towards investment in these options. As Digital Gold is a new investment avenue, there is lack of awareness among investors and also there is no regulatory authority in India backing the circulation of Digital Gold. Therefore, this study is relevant from the point of view of individual investors, regulatory authorities and economy as a whole.

1. LITERATURE REVIEW

Indians perceive gold as a safe investment, and research has found that gold has maintained its value over the long term for decades (Hundal, 2013). Even though gold is significant in India from an industrial and trade-off viewpoint, most of it is used to make jewelry (World Gold Council Report 2009-10 to 2016-17). In India, several studies have been published to explore from a retail consumer's outlook the contribution of savings, the price of gold, the quest for real income, the impact of lifestyle, and herd behavior on gold demand.

The economic survey done by GOI in Jan 2023 shows an increase in investor preferences towards Gold ETF investment. This surge in gold investment can be understood by the usage according to demand for gold in India, which is 52% in the form of jewelry, 27% in the mode of bars and coins, 9% for technology purposes, and 3% for ETFs and similar products (gold.org). According to RBI, "The average Indian household holds 84% of its wealth in real estate and other physical goods, 11%

in gold and the residual 5% in financial assets". The increases in international gold price and crude oil prices also have a negative effect on the stock market (Thakolsri, 2021).

Due to the importance of 'Gold as an investment' option for investors in India, the literature review has been studied under three heads: Gold ETF, Digital Gold, Influential factors, and PCA analysis.

ETFs were introduced around 1990 on the Toronto Stock Exchange in Canada. In their early days, ETFs were used to replicate baskets of stocks (World Gold Council). The first Gold ETF was started in March 2003 on the Australian Stock Exchange under Gold Bullion Securities (Athma & Suchitra, 2011). In 2004, GLD became the first physically backed gold ETF launched in the US. It was soon followed by others. The largest gold-backed ETFs reside in the US and Europe (World Gold Council). Gold Exchange Traded Funds (ETFs) are bought and sold in India since March 2007. Benchmark Asset Management Company Private Ltd. had offered the proposition first for

gold ETF with the Securities and Exchange Board of India (SEBI) (Latha & Deepa, 2017).

Haria (2022) stated that gold ETF is fundamentally an open-ended mutual fund that is invested in regular and approved bullion as its elemental asset. Investing in gold through Gold ETFs is easier because it represents tangible gold in the mode of paper or dematerialized form. Gold ETFs are denoted to record closely the price of physical gold. Nevertheless, the accomplishment and efficiency of the Gold ETF system possibly vary from the domestic price of gold because of expenses and additional associated factors (Eswara, 2015). Prasanta Athma (2011) stated that among the various alternatives available to investors, Gold ETF is an emerging option. Allotment of a negligible fraction of investment in Gold ETF might spread out the portfolio uncertainty. Despite the fact that having Gold ETFs has many advantages, less money is invested in them, since investors do not comprehend them and are emotionally attached to owning gold in physical form.

According to Joy (2020), gold ETFs are among the most favorable ways to invest money in gold. These benefits include wealth tax exemption, income tax benefit, investing in small denominations, ease of hedging, and superior holdings of ETFs compared to real gold holdings. An account in dematerialized form and enrolment with the broker (member of NSE/ BSE) are compulsory for investors desiring to invest in Gold ETFs (Venkatachalam, 2015). It is also observed that Gold ETFs generate more outcomes than physical gold. So, investors can prefer investments in Gold ETFs (Kumar & Raj, 2019). Gold ETFs, when possessed for a period of higher than 36 months, are subject to Long-Term Capital Gain at the rate of 20% (with indexation). If not held for more than 36 months, then they are subject to Short-Term Capital Gain, and the rate of tax is applicable as per slab rates (AMFI, 2022).

In 2019, worldwide investment in gold ETF was fueled due to low-interest rates and geopolitical uncertainty. A 10-year low in bar and coin demand owed much too extreme declination in India and China (World Gold Council). In India, assets under management for gold ETFs on March 31, 2008 were Rs. 483 Crores and as of September 30, 2022, they were Rs. 19,861.33 Crores (AMFI,

2022). There has been a 40% increase in the amount of Assets under Management in Gold ETF category in last 14 years. In India, infiltration degree of Gold ETFs is limited to only big cities and metros, resulting in restricting the influence barely urban customers. All the Gold ETF funds invest part of their resources in the mining and minerals category. This approach may result in higher benefits for fund (Anand, 2017).

Investment in Gold ETF is increasing in India (Economic Survey GOI Jan, 2023) hence there is a need for a study to understand the different factors affecting investor behavior toward investment in Gold ETF and Digital Gold by using factor analysis.

Investors who prefer real gold have the option of investing in digital gold. In India, Augmont Enterprises Private Limited, state-owned Metals and Minerals Trading Corporation of India (MMTC), Produits Artistiques Métaux Précieux, Switzerland (PAMP) and Digital Gold India Pvt. Ltd. with its SafeGold brand issues digital gold (Chaluvadi (2022b)). MMTC-PAMP is a joint venture, established in 2008 between the Switzerland based global leader in branding bullion PAMP SA, and MMTC Ltd, a Government of India Undertaking (MMTC Limited). This JV is the first and only LBMA (London Bullion Market Association) Good Delivery Refinery in India to receive Accreditation for Gold and Silver. MMTC Pamp India is setting new global standards of product excellence, customer service, environmental management, and safety (MMTC Limited). Currently, three companies offer digital gold. They are Augmont Gold; MMTC-PAMP India Pvt. Ltd; and Digital Gold India Pvt. Ltd with its SafeGold brand. Different platforms and wallets such as Paytm, Amazon Pay and investment platforms such as Kuvera, Groww and stockbrokers are the means of offering digital gold to investors (Mint, 2020).

Digital Gold is the most effective and economical method of purchasing gold (Scripbox, 2021). The state-owned Metals and Minerals Trading Corporation of India (MMTC) issues digital gold under the SafeGold brand through Produits Artistiques Métaux Précieux, Switzerland PAMP (Scripbox, 2021). Paytm, the leading mobile payment and commerce platform in India, collaborated with MMTC-PAMP, a division of the MKS PAMP GROUP, to launch Digital Gold (MKS

PAMP Group, 2017). By investing in digital gold, one can purchase 24K 99.9% pure gold digitally. Whenever the digital gold is bought, the producer buys gold of the similar price in the buyer's name. The vaults where this gold is held are either those of a third party or, in the case of MMTC-PAMP, those of the agency. In normal circumstances, a trustee is assigned to check if the volume and authenticity of gold are preserved in alignment with the gold bought by the investor. Nonetheless, there is no regulatory authority to supervise if the trustee is performing the job correctly. 3% Goods and Service Tax (GST) is levied on purchase of digital gold just like that of physical gold (Mint, 2020). PhonePe has emerged to be the largest platform for buying 'digital gold' with over 35 per cent market share. So far, customers from over 18,500 pin codes across India have bought gold on PhonePe, mainly from small towns and cities. Paytm claimed that over 73 million people have bought Paytm Gold on the platform till December 2020, out of which 40 percent belong from small towns and cities (Moneycontrol, 2020).

A set of regulations for digital gold have been framed by the World Gold Council, which includes standards for investors as well as service providers. Measures are outlined to defend investors and build up excellent discipline, emphasizing the matter that there is a requirement to equip investors' security when they purchase gold electronically, particularly in India. The council needs to bump the government to release administrative rules for purchasing and selling digital gold in the nation (Standard, 2019). Previously, stock brokers registered with SEBI and digital payment applications both provided digital gold as a product. As per Rule 8 (3) (f) of the Securities Contracts (Regulation) Rules, 1957 (SCRR) (SEBI, 2021), members of the stock exchange are prohibited from engaging in any activity other than trading in securities or commodities derivatives, unless they are acting as a broker or agent with no risk to their personal finances. Under Securities Contracts (Regulation) Act, 1956 digital gold has not been declared security but is operating outside of the framework of the gold exchange. Customers can purchase this merchandise using payment applications and these applications allow users to buy gold for small sums of money without offering a delivery option (Kothari, 2022).

One of the major factors which influence the investment decision of a retail investor is financial knowledge. The ability to comprehend key financial ideas is referred to as financial knowledge (Robb & Sharpe, 2009). According to Hamza and Arif's (2019) findings, having a solid financial foundation is crucial when making investing decisions. The capacity of the investor to apply their financial knowledge to make the optimal option is impacted by perceived risks. Risk perception is the process through which a person interprets information and creates a mental picture utilizing that knowledge. This frequently diverges from perceptions, beliefs, and estimates (Ainia & Lutfi 2019).

According to behavior finance, making decisions about investments is both objective and subjective and is affected by cognitive biases and emotions (Shefrin & Statman, 1994), and social interactions (Ricciardi, 2008) such as loss aversion, framing, herding behavior, self-attribution, emotional gap, anchoring bias, and mental accounting.

Gold ETF has been the fourth-largest preference of investment after bank deposits, gold jewelry, and life insurance policies among all income groups. It is also observed that most of the investors go for secure and balanced choices, and they favour Gold ETF because it maintains a blend of security, balance, and serenity of buying and selling via the stock market. Returns of Gold ETF are dependent on gold prices, so investors eventually receive the advantages of gold jewelry with a characteristic of equity stock. People with private sector jobs and government sector jobs have prime concerns like safety and stability of returns, and prefer investment in Gold ETFs (Verma et al., 2020). The various factors that impact the investment decision for gold are taken into consideration in this study.

Factor analysis is done using Principal Components Analysis (PCA). It is a method for reducing the number of variables by maximizing the variation in the observed variables that can be explained by a smaller set of variables known as components. Garg (2020) determined the significance of components using the PCA framework. The study examined the variables that affect investor attitudes about gold as a desirable investment option. Elhaik (2022) also employed PCA in his study to examine a number of variables since this statistical meth-

od aids in identifying the most trustworthy, durable, and important variables. The study concludes that PCA is useful in genetic research. Gazley et al. (2015) cleaned and altered the study's data in order to perform PCA to analyze variance. Cluster analysis was used to organize samples after PCA (or another ordination) in order to draw the helpful and geologically significant conclusions that these techniques may generate.

Previous studies have examined investor behavior in India and these studies have been conducted to explore investment behavior of investors with regards to stock market, mutual funds, and investment in gold. But these studies have not focused on the area of digital gold, and this area is yet to be examined. Studies that have already been conducted focusing on the accomplishment of Gold ETF in India, price discovery of gold ETF, impact of ETFs on gold market, investment in Indian Gold ETFs, investment preference towards Gold ETF and comparison between gold ETF, e-gold and physical gold. However, not much attention has been paid to the behavior of individual investors towards investment in gold ETF and digital gold and the awareness about these options.

With reference to the studies conducted, it can be inferred that gold has always been in demand as an investment instrument. Investors are required to be more aware of these two options of investment and their benefits. It is important to understand the factors which influence their investment decision with regard to Gold ETF and Digital Gold.

Considering the purpose of the study, the paper attempts to address the following questions: Are investors aware of investment options such as Digital Gold and Gold ETF? Which are the factors influencing investors to invest in digital gold and Gold ETF? Whether the individual investors are able to differentiate between these two investment options? What are the issues faced by investors while investing in these investment avenues? Are the investors being of opinion that investment in Digital Gold should be regulated by SEBI? Considering the above questions, a prospective study is designed to determine the factors influencing investment decisions in Gold ETF and Digital Gold. The study also aims to examine the reasons for not investing in Digital Gold and Gold ETF. To ascertain this,

Principal Component Analysis is conducted and components influencing the decision are extracted using SPSS 26.

2. AIMS

The aim of the study is to investigate the influential factors for investment decisions in Digital Gold and Gold ETF and determine the relationship among these factors.

3. METHODS

The study categorizes the factors imposing an impact on investment in Digital Gold and Gold ETF. For conducting the survey, primary data were collected from 158 different responders through a well-designed questionnaire. An organized closed-ended questionnaire with 200 respondents was distributed, out of which 158 questionnaires were found to have complete information to be included for research. A convenient sampling method was used for data collection. Respondents from a variety of age groups, occupations, and genders are included in the sample. Statements in the questionnaire were scored on a 5-point Likert scale, with 5 representing strong disagreement and 1 representing strong agreement. The perspective of respondents regarding the reasons for investment in digital gold and Gold ETF as an investment avenue was ascertained using factor analysis. PCA, a technique for reducing the number of dimensions in big data sets information has been used for analyzing the factors. This is done by condensing a large collection of variables into a smaller set that nevertheless retains the majority of the information in the larger set. Principal components are brand-new variables created by linearly combining or mixing the initial variables. To determine the principal components, the Eigenvectors and Eigenvalues of the covariance matrix were calculated. The factor analysis was done using SPSS 26.

4. RESULTS

To confirm that the data were appropriate and to gauge the degree of measurement error, reliability was first examined. The value of stand-

ardized alpha, which is based on correlation, is 0.9094, whereas the alpha reliability, which is based on covariance, is 0.9087. Therefore, the reliability test yields a Cronbach's Alpha value of 0.90, which is significant for all the research variables. Additionally, after computing the correlation matrix, it was discovered that there were sufficient correlations to support component analysis. Bartlett's test of sphericity and the Kaiser-Meyer-Olkin measure of sampling adequacy to determine if the data were appropriate for factor analysis or not were performed. Data are suitable for factor analysis, according to KMO, a measure of sampling adequacy (KMO= 0.90). The data for factor analysis appears to be significantly correlated, according to Bartlett's test of sphericity ($\chi^2(91) = 4128.11, p < 0.01$).

The relevance of the components was determined using principal component analysis, and three more elements were then extracted using Varimax rotation to determine the reasons for investing in Digital Gold and Gold ETF. When factor loadings were evaluated using Hair's criterion (Hair, 1995), a factor loading of 0.5 or more was deemed significant. Again, clearly indicating which items make up each component, the Rotated Component Matrix shows the loadings for each item on each rotated component.

It is discovered that the eigenvalues for the three elements were more than 1, which is regarded as significant. In the first set of analysis the reasons for investing in Digital Gold and Gold ETF were explored. Table 1 displays the proportion of variation that each unique component explains. Table 2 provides a summary of the factor loadings.

In the second set of analysis, the reasons for not investing in Digital Gold and Gold ETF were explored. After investigating several parameters, a very obvious structure, as shown in Table 3 was obtained. Table 4 provides a summary of the factor loadings. Tables 5 and 6 outline the factors and related items in more depth.

The seven major factors (Components) are analyzed using PCA Extraction Method to find the percentage variation as shown in Table 1. It displays the proportion of variation that each unique component explains. The PCA analysis then groups the seven components into three major components and also shows the percentage variation of each. The rotation sums of squared loadings column of the table indicating the percentage of variance shows that the first factor accounts for 29% of the variation, the second factor for 18%, and the third factor for 14%. 63% of the overall variance is explained by the current analysis.

Table 2. Rotated component matrix^a for investment in Digital Gold and Gold ETF

Source: Author's calculation.

| Reasons for Investment | Component | | |
|------------------------|-----------|-------|-------|
| | 1 | 2 | 3 |
| GETF 1 | 0.947 | | |
| GETF 2 | 0.947 | | |
| GETF 3 | 0.503 | | |
| DG 1 | | 0.663 | |
| GETF 4 | | 0.556 | |
| DG 2 | | | 0.792 |
| DG 3 | | | 0.640 |

Note: Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization^a.

Table 1. Total variance explained for investment in Digital Gold and Gold ETF

Source: Author's calculation.

| Component | Initial Eigenvalues | | | Extraction Sums of Squared Loadings | | | Rotation Sums of Squared Loadings | | |
|-----------|---------------------|---------------|--------------|-------------------------------------|---------------|--------------|-----------------------------------|---------------|--------------|
| | Total | % of Variance | Cumulative % | Total | % of Variance | Cumulative % | Total | % of Variance | Cumulative % |
| 1 | 2.156 | 30.807 | 30.807 | 2.156 | 30.807 | 30.807 | 2.071 | 29.592 | 29.592 |
| 2 | 1.232 | 17.596 | 48.402 | 1.232 | 17.596 | 48.402 | 1.310 | 18.719 | 48.311 |
| 3 | 1.043 | 14.897 | 63.299 | 1.043 | 14.897 | 63.299 | 1.049 | 14.988 | 63.299 |
| 4 | 0.985 | 14.069 | 77.368 | | | | | | |
| 5 | 0.829 | 11.849 | 89.218 | | | | | | |
| 6 | 0.755 | 10.782 | 100.000 | | | | | | |
| 7 | 7.876E-16 | 1.125E-14 | 100.000 | | | | | | |

Note: Extraction Method: Principal Component Analysis.

Table 3. Total variance explained for not investing in Digital Gold and Gold ETF

Source: Author's calculation

| Component | Initial Eigenvalues | | | Extraction Sums of Squared Loadings | | | Rotation Sums of Squared Loadings | | |
|-----------|---------------------|---------------|--------------|-------------------------------------|---------------|--------------|-----------------------------------|---------------|--------------|
| | Total | % of Variance | Cumulative % | Total | % of Variance | Cumulative % | Total | % of Variance | Cumulative % |
| 1 | 4.168 | 29.769 | 29.769 | 4.168 | 29.769 | 29.769 | 4.007 | 28.619 | 28.619 |
| 2 | 3.524 | 25.171 | 54.940 | 3.524 | 25.171 | 54.940 | 3.047 | 21.765 | 50.384 |
| 3 | 2.085 | 14.894 | 69.834 | 2.085 | 14.894 | 69.834 | 2.106 | 15.044 | 65.428 |
| 4 | 1.479 | 10.566 | 80.400 | 1.479 | 10.566 | 80.400 | 2.042 | 14.582 | 80.011 |
| 5 | 1.290 | 9.211 | 89.611 | 1.290 | 9.211 | 89.611 | 1.344 | 9.600 | 89.611 |
| 6 | 0.791 | 5.651 | 95.262 | | | | | | |
| 7 | 0.663 | 4.738 | 100.000 | | | | | | |
| 8 | 3.649E-16 | 2.606E-15 | 100.000 | | | | | | |
| 9 | 1.464E-16 | 1.046E-15 | 100.000 | | | | | | |
| 10 | 3.051E-17 | 2.179E-16 | 100.000 | | | | | | |
| 11 | 2.332E-32 | 1.666E-31 | 100.000 | | | | | | |
| 12 | -8.651E-17 | -6.179E-16 | 100.000 | | | | | | |
| 13 | -3.309E-16 | -2.363E-15 | 100.000 | | | | | | |
| 14 | -1.075E-15 | -7.677E-15 | 100.000 | | | | | | |

Note: Extraction Method: Principal Component Analysis.

In Table 2, the reasons for investment in Gold ETF and Digital Gold are analyzed using PCA to extract the components. These components are further rotated using Varimax with Kaiser Normalization method. The results of the factor loadings are shown in Table 2. The first factor is loaded with the first three factors, the second factor with the next two factors, and the third factor with the last two factors.

Table 3 shows an analysis of the reasons for not investing in Digital Gold and Gold ETF, which are

explored using PCA. The PCA analysis then groups the 14 components into 5 major components and also shows the percentage variation of each. The first component accounts for 29% of the variation, the second factor for 25%, the third factor for 14%, the fourth factor for 10%, and the fifth factor for 9% of the variance. 89 percent of the overall variance is explained by the current analysis.

In Table 4, the reasons for not investing in Gold ETF and Digital Gold are analyzed using PCA to extract the components. These components

Table 4. Rotated component matrix^a for not investing in Digital Gold and Gold ETF

| Reasons for not investing | Component | | | | |
|---------------------------|-----------|-------|-------|-------|-------|
| | 1 | 2 | 3 | 4 | 5 |
| NDG 1 | 0.997 | | | | |
| NGETF 1 | 0.997 | | | | |
| NGETF 2 | 0.997 | | | | |
| NGETF 3 | 0.997 | | | | |
| NGETF 4 | | 0.986 | | | |
| NDG 2 | | 0.986 | | | |
| NGETF 5 | | 0.986 | | | |
| NDG 3 | | | 0.980 | | |
| NDG 4 | | | 0.980 | | |
| NDG 5 | | | | 0.969 | |
| NGETF 6 | | | | 0.969 | |
| NDG 6 | | | | | 0.707 |
| NDG 7 | | | | | 0.696 |
| NGETF 7 | | | | | 0.588 |

Note: Extraction Method: Principal Component Analysis. ^a Rotation Method: Varimax with Kaiser Normalization.

are further rotated using Varimax with Kaiser Normalization method. Table 4 provides a summary of the factor loadings. It shows that the first factor is loaded with the first four factors, the second factor with the next three factors, the third factor with the next two factors, the fourth factor with the following two factors, and the fifth factor with the final three factors.

The purpose of this study was to investigate the variables that affect investor perceptions of Digital Gold and Gold ETF as viable investment options. The description of results obtained in Tables 1, 2, 3 and 4 are summarized in Tables 5 and 6. These Tables also outline variance and factors loadings.

5. DISCUSSION

The primary purpose of this study is to identify the factors influencing investment decisions in Digital Gold and Gold ETF. To ascertain that a well-structured questionnaire was distributed among retail investors in India. Previously, research has been conducted in the area of Gold ETF with respect to certain states in India. But, there is no study available on the identification of factors involved in decision making whether to invest in Gold ETF or not. There is also no research done in the area of Digital Gold to date. Responses were collected from 158 respondents. Principal Component Analysis was performed in order to determine the influential factors. The findings display influential

Table 5. Factors and related items for investment in Digital Gold and Gold ETF

Source: Author's calculation.

| Factor Number | Factor name and Variance explained | Variables | Factor loadings |
|---------------|------------------------------------|--|-----------------|
| 1 | Conduciveness | GETF 1 – Reasons for investment in Gold ETF [Convenient Trading] | 0.947 |
| | | GETF 2 – Reasons for investment in Gold ETF [No storage required] | 0.947 |
| | | GETF 3 – Reasons for investment in Gold ETF [Highly Liquid] | 0.503 |
| 2 | Security | DG 1 – Reasons for investment in Digital Gold [Traded Electronically] | 0.663 |
| | | GETF 4 – Reasons for investment in Gold ETF [Regulated by AMFI] | 0.556 |
| 3 | Accessibility | DG 2 – Reasons for investment in Digital Gold [Convenient to buy or sell] | 0.792 |
| | | DG 3 – Reasons for investment in Digital Gold [Gold worth Rs. 100 can be bought] | 0.640 |

Table 6. Factors and related items for not investing in Digital Gold and Gold ETF

Source: Author's calculation.

| Factor Number | Factor name and Variance explained | Variables | Factor loadings |
|---------------|------------------------------------|--|-----------------|
| 1 | Contentment | NDG 1 – Reasons for not investing in Digital Gold [It does not provide satisfaction of physical gold] | 0.997 |
| | | NGETF 1 – Reasons for not investing in Gold ETF [It does not provide satisfaction of physical gold] | 0.997 |
| | | NGETF 2 – Reasons for not investing in Gold ETF [Too many similar funds are confusing] | 0.997 |
| | | NGETF 3 – Reasons for not investing in Gold ETF [Lack of knowledge about the concept of Gold ETF] | 0.997 |
| 2 | Challenging | NGETF 4 – Reasons for not investing in Gold ETF [It cannot be converted easily into physical gold] | 0.986 |
| | | NDG 2 – Reasons for not investing in Digital Gold [Operating the apps like PhonePe, Google Pay is difficult] | 0.986 |
| | | NGETF 5 – Reasons for not investing in Gold ETF [Investment in Gold ETF is risky] | 0.986 |
| 3 | Awareness | NDG 3 – Reasons for not investing in Digital Gold [It cannot be trusted.] | 0.980 |
| | | NDG 4 – Reasons for not investing in Digital Gold [Financial Literacy] | 0.980 |
| 4 | Cost Benefit | NDG 5 – Reasons for not investing in Digital Gold [Investment Risk] | 0.969 |
| 5 | Infeasibility | NGETF 6 – Reasons for not investing in Gold ETF [Its trading involves expenses like brokerage] | 0.969 |
| | | NDG 6 – Reasons for not investing in Digital Gold [No regulatory authority for digital gold] | 0.707 |
| | | NDG 7 – Reasons for not investing in Digital Gold [Concept of digital gold is confusing] | 0.696 |
| | | NGETF 7 – Reasons for not investing in Gold ETF [It is not reliable] | 0.588 |

factors that are divided into numerous categories. A reliability test was conducted to confirm the relevance of the data and to ascertain the degree of measurement error. Cronbach Alpha value appeared to be significant for all research variables. It was found that there were enough correlations to conduct component analysis after constructing the correlation matrix.

The findings of the study revealed that major factors that affect the decision to invest in Digital Gold were contentment or satisfaction with investment, challenges faced, level of awareness among investors, the cost involved in investment, and feasibility. Factors that affect the decision to invest in Gold ETF are conduciveness, security, and accessibility. The conduciveness category includes variables such as convenience in trading, no storage required, high liquidity of highest factor loadings of 0.947. The security category includes variables such as electronic form of investment, regulated by AMFI, with factors loading of 0.663. The last category, including variables such as accessibility, has a factor loading of 0.640.

The second set of analysis determines the reasons for not investing in digital gold and Gold ETF. The results obtained disclosed that variables like lack of satisfaction, ambiguity in options, and lack of knowledge have higher factor loadings of 0.997. As a result of similar loadings, these factors were identified under one category. The second category of variables such as conversion to physical gold,

difficulty in operating apps, and risk element involved have a factor loading 0.986. Other categories of variables identified for non-investment in digital gold and Gold ETF are level of awareness, cost benefits, and lack of feasibility with factor loadings 0.980, 0.967, and 0.707 respectively. These results are obtained as the respondents are investors in either Digital Gold or Gold ETF and influential factors for investment in both these options tend to coincide.

The results obtained align with previous studies such as the study conducted by Haria in 2011 in which it was proved that investment in Gold ETF is convenient and feasible. This study also revealed that the price of Gold ETF is directly influenced by the price movement of gold. Prasanta Athma in 2011 also discovered that though Gold ETF is an emerging option of investment, it is not comprehended by investors as there is no satisfaction in owning physical form of gold.

Hence, various factors impacting the decision-making of investors have been identified. Among these factors, the factors having the highest weightage are awareness level and regulation by authorities. This implies that there is a requirement to educate investors and channel these investment options with proper regulations. The study can benefit individual investors and regulatory authorities, and further studies can be conducted to compare Digital Gold and Gold ETF with other investment options in Gold.

CONCLUSION

The purpose of the study is to determine factors that affect the perception of investors toward investment in Digital Gold and Gold Exchange Traded Fund, for which Component Factor Analysis was performed on the primary data collected from individual investors in India. The results of the analysis show that conduciveness, security, and accessibility are the three major factors that affect investor behavior toward investing in Digital Gold and Gold Exchange Traded Fund. These factors were categorized based on the factor loading. These factors successfully accounted for 63% of the study's overall variation. Also, the five major factors that affect the decision not to invest in Digital Gold and Gold Exchange Traded Fund are lack of contentment, challenges faced, lack of awareness, cost-benefit aspect, and infeasibility. These categorized factors are further subdivided into variables such as no satisfaction of holding physical gold, uncertainty of funds, lack of awareness, ease of conversion to physical gold, operating different applications, risk element, no regulation in case of digital gold, and involvement of brokerage expenses.

From the results obtained, it can be concluded that investors feel that gold is one of the safest options for investment and they are willing to invest in electronic forms of gold via Gold Exchange Traded

Fund and Digital Gold. Although the investors still need to be educated regarding the concepts of Gold Exchange Traded Fund and digital gold and they conceive the concept of investment in digital gold to be risky as it is not regulated by regulatory authorities like Securities Exchange Board of India or Association of Mutual Funds in India. The study has also encountered the fact that SEBI is looking into providing education to investors about the same. The study has observed that the Securities Exchange Board of India is negotiating to regulate trading in digital gold in a legalized manner, similar to the stock market. It will be helpful for Indian investors as the Securities Exchange Board of India registered dealers, and dealers on the National Stock Exchange platform can promote buying and selling digital gold. Investors may use the findings of the study to get acquainted to the concept of Digital Gold and Gold Exchange Traded Fund. However, regulators may decide to educate investors in this regard and develop investment policies for these investment avenues.

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