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Savings in Gold by Low-income Households

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Summary:

Investment in gold by Indian households is motivated by social, economic, and cultural factors. One out of every ten households buy gold annually or more frequently; usually in the form of jewellery, followed by coins and bars and an average Indian household allocates 11% of their wealth in gold bullion. Gold or gold backed products are used to mobilize savings, hedge against inflation, collateral for borrowing loans as well as an instrument for liquidity management by households. The objective of this research brief is to explore gold as a financial instrument, particularly for low-income households in India. To understand this better we conducted a brief overview of the literature on the retail gold sector, households' gold consumption behaviour and policies or schemes rolled out by the government in India to formalize the informal gold sector. We also analyzed the transaction behavior of remote rural households into a gold based micro-savings products using administrative data from Dvara SmartGold.

About Household Finance Research Initiative:

Dvara Research's Household Finance Research initiative aims to rigorously understand the financial choices and decisions of low-income or excluded individuals and households, and their relation to achieving households' objectives. It has been our consistent endeavour to study financial inclusion as a gateway to a suite of appropriate financial services eventually enabling well-rounded household balance sheets and consumer financial well-being.

We believe that careful research and a comprehensive body of evidence can powerfully inform market practices and the design of financial sector policy to deliver comprehensive financial services for all individuals, households, and enterprises, and eventually serve to create a safe environment in which formerly excluded populations may fully experience the benefits of financial inclusion. This research initiative seeks to significantly expand the scope of India-specific and policy-focused household finance research that is timely and relevant to current financial sector development.

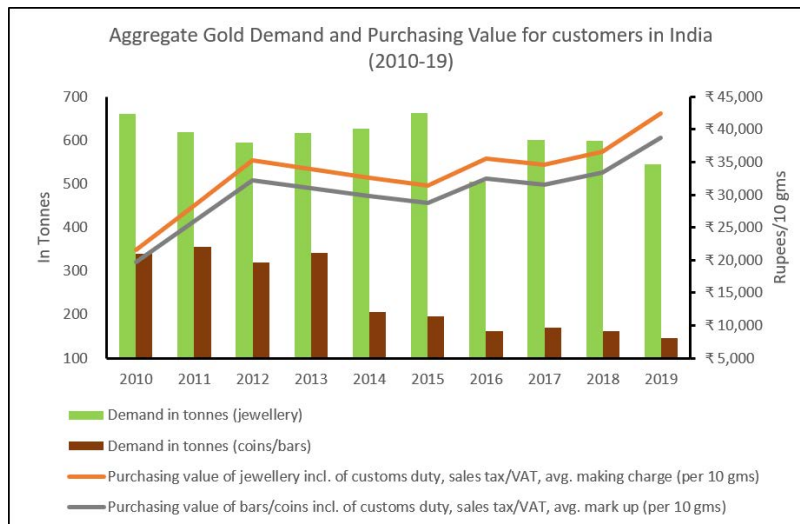
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1. Introduction

In several parts of south-east Asia, including India, gold is an important physical asset that has social, economic and cultural significance. India is the second largest consumer of gold in the world only behind China. Between 2010-19 the aggregate demand for jewellery, coins and bars has reduced however, in the same time period the purchasing value of gold jewellery² almost doubled from approximately Rs. 20,000 to Rs. 39,000 (refer to graph 1) and so did the price for gold coins/bars. We observe an interesting purchasing behavior wherein a decrease in price of gold leads to an increase in demand for jewellery and vice-versa.

Collectively, Indian households possess 24,000-25,000 tonnes of gold used solely for consumption³. Investment in gold as a physical asset in India is motivated by various social, economic, and cultural reasons. As a physical yet liquid asset, gold can be bought in tiny amounts that holds significant value over long periods of time, and is divisible into smaller units which can be liquidated as needed. In India, one in ten households buy gold annually or more frequently, and is usually purchased in the form of jewellery, followed by coins/bars⁴. Gold as an asset undergoes intergenerational transfer among families through inheritance or during festivals, thus creating socio-cultural and economic significance for the households. This asset is widely used as an instrument to hedge against inflation as the value tends to appreciate over years. Mobilizing savings through accumulation of physical gold bullion, borrowing loans by pledging or collateralizing gold jewellery/coins, and using gold for liquidity management for consumption purpose are various ways in which households use gold as a financial asset.

Graph 1: Gold Demand and Prices in India



Source - World Gold Council, Dvara Research

The objective of this research brief is to explore gold as a financial instrument, particularly in the context of low-income households in India. To understand this better we conducted a brief overview of the literature on retail gold sector in India, the participation and allocation of gold by low-income households with and their preference to use the liquid asset as a hedge against inflation. We also explore the various policies and schemes rolled out by the government to formalize and financialize the largely informal sector which has

²Purchasing value of gold is calculated by adjusting gold price per 10 gms with relevant sales tax, customs duty rates and average making charge rates. Between 2010 to 2019, the customs duty rate has increased from 1.4% to 13.5%, sales tax rate has been largely constant at 3%, average making charge/ mark-up on jewellery, coins/ bars have been 0.15 to 0.05 per cent of total cost of product.

³Transforming India's Gold Market, Niti Aayog Report, 2018

⁴Based on ICE 360 survey from People Research on India's Consumer Economy (PRICE) (October 2014).

mostly restricted gold to a physical asset, through both public and private sector formal institutions. Although multiple datasets can provide some useful insights about gold transaction patterns, most of them do not exclusively concentrate on low- and middle-income households. In our research, we had access to the administrative dataset of Dvara SmartGold that helped us gain insights into how remote rural customers with varied households characteristics transact into a gold-based micro savings product.

1.1. Household participation and allocation in gold market

The financial balance sheet of Indian households is dominated by the presence of non-financial assets, with relatively high composition of gold. An average Indian household holds 84 per cent of its wealth in physical asset, 11 per cent in gold bullion and the residual 5 per cent in financial assets⁵. Across the states of India, there is evidence of cross-sectional variation in gold holding as part of the total household balance sheet. Although the variation of gold holding is not extremely stark between rural and urban households, it does vary widely with value of assets held by the households. Households with total wealth (including physical and financial assets) less than ₹1,79,000 hold 24 per cent of their wealth in gold whereas the wealthiest segment of households with total wealth above ₹1.48 million hold only 2 per cent of their total wealth in gold. Some of the cross-variations among households as well as among states can be attributed to household characteristics. For instance, the share of gold in household portfolio reduces as the head of household grows older. Similarly, gold holding increases in households with 0 – 2 children but marginally decreases for households with more than two children (Badarinza et. al, 2016)^{6,7}.

Table 1: Regional variation of household balance sheets in the southern states of India⁸

State	Portfolio allocation across asset categories				Allocation of debt across product types			
	Real Estate	Gold	Financial assets	Retirement accounts	Mortgage debt	Gold loans	Unsecured debt	Non-institutional Debt
Tamil Nadu	59.4%	28.3%	3.1%	3.2%	11.3%	41.3%	11.3%	42.1%
Andhra Pradesh	62.8%	21.6%	3.8%	3.1%	9.5%	9.5%	55.3%	48.9%
Karnataka	67.1%	16.1%	5.0%	4.4%	24.8%	3.4%	53.8%	49.2%
Kerala	78.9%	13.1%	2.8%	1.8%	38.3%	17.2%	31.6%	20.0%

There is significant regional variation in household wealth allocation in each asset type, which is also reflected in gold holding. Southern states in India display higher demand for gold compared to other states due to cultural and traditional factors (Table 1). Among the southern states, Tamil Nadu households hold the highest share of gold bullion (28%), followed closely by Andhra Pradesh (22%) and Karnataka (16%). In fact, households in Tamil Nadu hold 40% of their debt in the form of gold loans.

⁵All India Debt and Investment Survey, NSSO (2012)

⁶In India gold is often given saved for gifting daughter during marriage

⁷Badarinza, C., Balasubramaniam, V., & Ramadorai, T. (2016). The Indian Household Savings Landscape. Available at SSRN 2797680.

⁸The table is an excerpt from Household Finance Committee report by RBI which is based on NSSO AIDIS (2012) data, during which Telangana was a part of undivided Andhra Pradesh

1.2. Leveraging gold to save and borrow

Among low-income households in India and particularly in the southern states, buying gold, Rotating Savings and Credit Associations (ROSCAs), and private lending remain dominant forms of savings⁹. The average monthly per capita expenditure in India on gold and jewellery is ₹494 in urban households and ₹233 in rural households, and accounts for 23 per cent of households' durables purchases¹⁰. The per capita demand for gold is 0.7 grams¹¹ and for an average Indian family of four persons, the total consumption demand would be 2.8 grams. Although gold is a much sought-after asset, consumers often face hurdles in the process of buying and selling the product. Some of these issues are costly retailer mark-up in the range of 6-8 per cent of gold value¹², impure gold particularly in case of jewellery and 22K coins and asymmetry of prices between purchase and resale of gold products for customers.

Gold is used both as a savings instrument and as a collateral against borrowing in India and in South Asia. Households that have accumulated gold over several years tend to use it to borrow gold backed loans which can be quick and expensive but with comparatively better terms of contract than non-institutional credit. They tend to borrow against gold from both institutional and non-institutional sources mostly for social occasions, medical emergencies, to repay back outstanding loans and for business investments¹³. Non-institutional lenders comprising of moneylenders and local pawn shops often offer gold backed loans of above 75 per cent of the loan-to-value (LTV) ratio but charge usurious rate of interest. Formal lending institutions offer slightly cheaper gold-backed loans for less than 75 per cent of LTV ratio (discussed in detail in the next section).

As a financial instrument, gold remains to be a preferred form of investment because it serves as a protection against cashflow volatility, and hedge against inflation due to historically increasing prices. Among Indian households, the ownership of the asset in jewellery form is typical with the woman creating a personal safety net for her and her family as well as establishing a sense of ownership, status and dignity within the family and society (Goedecke et. al, 2018).

Most of the gold-based products and policies designed and offered to households by RBI, financial institutions and jewellers require lumpsum and regular contribution with long term lock-in periods (a detailed list of products/policies is discussed in the next section). These products are not entirely suitable for low-income households for multiple reasons like unstable cashflows hampering consistent contribution towards a standardised product, seasonal need to buy and sell gold during festivals and marriages, and ease of liquidity during periods of shock.

In the basket of financial products available and accessible to low-income households in India, there is scope for product innovation at the intersection of savings and gold investment. In this research brief, we look at a recently launched gold-based microfinance product called Dvara SmartGold¹⁴. The Dvara SmartGold

⁹Goedecke, J., Guérin, I., D'espallier, B., & Venkatasubramanian, G. (2018). Why do financial inclusion policies fail in mobilizing savings from the poor? Lessons from rural South India. *Development Policy Review*, 36, O201-O219.

¹⁰Survey of Household Expenditure on Services and Durable Goods, NSSO (2014-15)

¹¹World Gold Council, India Report (2019)

¹²Retailer mark-up includes local market gold rate, making charges and other costs as charged by the seller.

¹³Based on ICE 360 survey from People Research on India's Consumer Economy (PRICE) (October 2014).

¹⁴Dvara SmartGold is a gold-based digital microfinance product which allows customers to purchase and sell digital gold as though it were a savings account. It also allows customers to use the digital gold in their account to be used as a collateral against procuring loans. More details about the product is found in subsequent sections.

product is designed to tap into the gold-based savings behaviour of households and is used to mobilise these savings through the formal financial market. The product provides an easy, safe and systematic way for households to save in gold through small-ticket investments and diversify their finance portfolio.

In subsequent sections, we will review existing financial policies, schemes and products pertaining to consumer facing gold market products, and explore various aspects of Dvara SmartGold customers as well their investment behaviour analysis using the company's administrative dataset.

2. Review of Existing Policies, Schemes and Products

Over the past few decades, the retail and regulatory environment for gold backed products have changed. Various formal institutions have begun catering to low-income households, with small-ticket gold-based products with quick and convenient processing arrangements. While the organized sector provides various gold-based products such as deposits, loans, coins, bonds and savings, the unorganized sector mainly provides loan and savings products. We review these products in this section, with special focus on loan and savings schemes since these two products are of importance for low-income households. We also examine the several factors that make the unorganized sector their preferred choice, by examining the products provided by the unorganized sector and comparing them with those provided by their organised sector counterparts.

The organized sector consists of financial institutions such as public sector banks, private banks, specialized gold loan NBFCs, SFBs, peer-to-peer lending platforms, Nidhi companies¹⁵ and various jewelers, all of them regulated by different regulatory authorities. They offer products such as deposits, loans, coins, bonds and savings. There has been a sustained push by the government and the Reserve Bank of India (RBI) towards introducing products for monetizing the gold held by Indian households. In 2015-16, government introduced the Gold Monetization Scheme with revamped gold deposit, loan and bond schemes. While the intention of the Scheme was laudable, it has so far met with limited success. NITI Aayog Committee, which was setup to review the scheme, has critically analyzed the existing schemes and given its recommendations on what can make gold a viable and robust financial asset.

The following table summarises the existing schemes and some of the issues with them, as reviewed by the Committee:

¹⁵Nidhi Companies are companies registered under the Companies Act and regulated by the Finance Ministry. Their role is to facilitate borrowing and lending of money among their members.

Table 2: Existing gold-based schemes provided by the organized sector in India

V	u	Eligibility criteria	7	k	u O	@
8) o 8) o	V	<ul style="list-style-type: none"> - Individual or jointly owned - Hindu undivided families - Trusts and companies 	<ul style="list-style-type: none"> - Deposit gold held in terms of jewellery, bars or coins (minimum quantity of 30g) - Get back returns in terms of physical gold or INR 	<ul style="list-style-type: none"> - Interest - Security - Tax exemptions 	<ul style="list-style-type: none"> - Short term: 1-3 years - Medium term: 5-7 years - Long term: 12-15 years 	<ul style="list-style-type: none"> - Negligible deposits made relative to total gold holding - Very few banks and branches offering the service - Very high minimum permissible deposit (30g) - Low participation from religious institutions - Complications on gold transport in GST regime
Gold Metal Loan Scheme (GMA)	November 2015	Indian jewellers catering to both domestic consumers and exports	<ul style="list-style-type: none"> - To lend gold procured from GDS to jewellers in order to help them raise capital and fulfil their inventory needs - Low interest rate loan given to jewellers in the form of gold which can be repaid in INR 	-	<ul style="list-style-type: none"> - 180 days for domestic jewellers - 270 days for exports 	<ul style="list-style-type: none"> - Very few banks and branches offering the service - Lack of demand from borrowers - Natural hedge offered by GML to the borrower neutralised by banks' insistence on forward cover - Lack of clarity on account treatment by banks

Indian Gold Coin (IGC)	V	Citizens of India	<ul style="list-style-type: none"> - Gold coins in 5g, 10g and 20g denominations - Anti-counterfeit features and tamper-proof packaging - 24-carat 999 fineness gold 	-	No tenure / lock-in period	<ul style="list-style-type: none"> - Higher cost than other gold coins - Only MMTC repurchases coins - 999 fineness coin makes it costlier for buyers - Available only in 5g, 10g and 20g denominations
Sovereign Gold Bond Scheme (SGB)	V	Residents of India	<ul style="list-style-type: none"> - Buying gold in digital format and trade on exchanges and use as collateral - Minimum holding: 1g; Maximum holding: 4kg - Can be purchased through physical certificate or demat account 	<ul style="list-style-type: none"> - Interest of 2.5% - Exemption from capital gains tax 	8 years, with an option to withdraw after 5 years	<ul style="list-style-type: none"> - Lack of demand for gold bonds - Price higher than market value of gold, making it unattractive to investors - Limited availability of bonds - tranche releases - Government bears the risk entirely
Gold Savings Account (GSA)	Not launched yet	Citizens of India	<ul style="list-style-type: none"> - Deposit in INR to accumulate virtual gold - Can be linked to demat account - Can withdraw either gold or INR - Interest credited in terms of gold weight - Gold can be transferred to another GSA account 	<ul style="list-style-type: none"> - Interest - Exemption from capital gains tax 	No minimum/ maximum tenure	Not implemented yet

While these schemes together form a comprehensive gold asset class, the products which assume importance from the point of view of low-income households however are the loan and savings schemes.

2.1. Gold Loans

The organized sector holds nearly 35 per cent share in the gold-loan market. In recent times, NBFCs have tried to bridge the gap with the unorganized sector by increasing their geographical presence, building quicker loan-processing capabilities, making gold valuation more accurate, accounting more efficient and safekeeping more secure. Other financial institutions like SFBs and Nidhi companies have joined this bandwagon¹⁶. Gold loans are offered for different duration with varying rates of interest¹⁷ and flexible repayment plans. Factors that pose a challenge for the organized sector are gold price volatility, high cost, risk incurred for safekeeping of gold items, and strong competition from the unorganized sector.

The unorganized loan sector consists of all entities operating outside the purview of regulatory authorities. They are easily accessible and offer immediate liquidity at steep rates of interest. The unorganized sector occupies the other 65 per cent share in the gold loan market¹⁸. The reasons why low-income households prefer the unorganized sector are because of some of its intrinsic features: high loan-to-value ratio (LTV), quick turnaround time, requirement of few documents, cash-based transactions, easy accessibility, absence of a maximum loan limit and processing fee, flexible repayment arrangements, freedom to use the borrowed amount for any purpose and the personal rapport with the lenders. These loans are used for consumption-smoothing purposes followed by unexpected expenses like medical emergencies^{19,20}.

The following table summarizes the features and characteristics of players in the organized and unorganized gold loan sector:

¹⁶Return of gold financiers in India's organised lending market, KPMG India Report, 2020

¹⁷Gold loan providers charge a high rate of interest to protect against gold price volatility, to hedge against default risks, and to make up for all the costs incurred - transactional costs, administrative costs and gold safeguarding costs. The short duration loans have lower rates of interest than long duration loans, since gold price volatility affects the latter more than the former. Providers also charge higher interest from those who fail to pay interest amount regularly, thus incentivising regularity and penalising irregularity.

¹⁸Return of gold financiers in India's organised lending market, KPMG India Report, 2020

¹⁹Expensive but worthwhile: Resolute informal financier markets, Nikita Taniparti, 2016

²⁰Study of gold loan market as an alternative source of credit for low income households, Misha Sharma, 2013

Table 3: Features of Gold Loan products offered by various sources of credit

Parameters	Gold Loan NBFCs	SFBs	Banks	Nidhi Companies	Pawn brokers and lenders
LTV ratio	<75%	No information	<75%	<80%	>75%
Processing fee	Nil/minimal	Nil	Nil - small loans Nominal - big loans	Nil	Nil
Interest rate	11-24% PA	11-12% PA	7-15% PA	12-21% PA	25-50% PA
Minimum loan amount	Rs. 1,000/-	Rs. 5,000/-	Rs. 1,000/-	Rs. 1,000/-	No limit
Maximum loan amount	No limit	1 lakh	3 Lakhs for agri loans	< 2 lakhs for companies with < 2 crore deposits	No limit
Penetration	High	High	Low	Low	Very High
Mode of loan disbursal	Cash up to Rs. 20,000/- Account transfer beyond Rs. 20,000/-	Cash Account transfer	Account transfer	Cash Account transfer	Cash
Regulator	RBI	RBI	RBI	Ministry of Corporate Affairs	Unregulated
Turnaround time	5-10 minutes	< 30 minutes	1 hour	-	> 10 minutes - 1 hour
Repayment Plans	Monthly interest, end of tenure lump sum, EMIs	Quarterly, Semi-annual and annual	Monthly interest, end of tenure lump sum	Any time loan closure permitted	Flexible options

2.2. Gold Savings

Many jewellers, both from the organized and the unorganized sector, offer jewellery advance purchase schemes to customers. With features similar to savings schemes, customers have the choice to choose the tenure and the months for which instalments are required to be invested. Jewellers either contribute the full amount or offer a substantial discount on the last instalment, and any jewellery of equivalent value of the total money accumulated at the end of the tenure (based on the gold rate on the day of completion of tenure) is given to the customers (Dhawan 2019). However, there are several regulatory concerns with these schemes, most jewellers in the unorganized sector run as single or joint proprietorship ventures and hence beyond the ambit of regulatory authorities, leading to a few instances of people being hoodwinked after investing in such schemes (Chakraborty 2019). The government sought to tackle this through the Banning of Unregulated Deposit Schemes Act, banning jewellers from running such purchase advance schemes without prior regulatory approval. Only those jewellers from the organized sector who have acquired regulatory clearances have been allowed to offer such schemes²¹.

The structural changes brought about by successive governments and tightening of compliance and lending norms have all aided the rapid growth of the organized jewellery sector, helping it increase its share from a meagre 5 per cent in 2005 to 30 per cent in 2016. It is pegged to hold a 45 per cent share by 2020, continuing its growth trajectory (GST Station 2019). On the other hand, these developments have hurt the unorganized sector, resulting in many of the jewelers shutting shop (Ghosal 2019). If the unorganized sector continues to be adversely affected, low-income households will have to increasingly depend on the organised jewelry sector to opt for such gold-based savings schemes. There is a paucity of literature on whether the unorganized sector has continued to provide such schemes despite the ban, and on other institutions providing similar schemes.

3. Investment in Gold-based Savings Product by Low-income Households

As discussed previously, gold holds significant financial and economic value for average as well as low-income households in India. Indian households regularly transact, save and borrow by using gold as the backend asset. Gold is also a unique financial instrument that plays the dual role of savings and collateral. From a low-income household's perspective, the objective of this research is to situate the gold investment behaviour of remote rural households while being cognizant of their existing household finance and the network they are embedded within. One way to conduct this research is by generating empirical evidence through analysis of administrative data from an entity that offers small-ticket flexible gold investment product.

On a broader level, we were interested to explore the following research areas:

- a. Capture the nature of interaction between low-income households and gold-based savings product
- b. Explore the relationship between households' financial cashflow and market participation with their investment into gold-based savings product
- c. Explore the relationship between households' demographic characteristics with their investment into gold-based savings product
- d. Investigate the utility of gold-based savings product for low-income households

²¹Organized jewellery companies may gain from ban on risky deposit schemes, The Economic Times

To substantiate the research in these areas we used administrative data from the [Dvara SmartGold](#)²². Dvara SmartGold offers a gold-based micro-savings product offered to help low- and middle-income households, and particularly women, to financially plan for their short, medium- and long-term goals while simultaneously capitalizing their preference for gold. This digital gold savings product facilitates the financialization of investment in gold that the government has been trying to achieve through various own policies like the Gold Monetization Scheme, as we have seen in the previous chapter. It provides a simple solution for middle- and low-income households to safely and systematically save through gold, while providing them enough flexibility as per their convenience and guarantees them immediate liquidity in times of need or any unexpected emergencies. A brief summary of the product can be found in the Appendix.

A Dvara SmartGold Customer can choose to invest into the product at either daily/weekly/monthly/ ad-hoc frequency. The customer has the option to invest ₹250, ₹500, ₹1000, ₹1500, ₹1317, ₹1660, ₹1817, ₹2160, ₹2161, ₹2590; ₹2661; ₹3090 – as monthly instalments in rupee which is converted into equivalent bullions and transferred to the account of the customer. The product operates like a savings out where in:

- a. The customer can withdraw part or entire balance anytime any time
- b. Can redeem the balance (part or full) into coins or jewellery
- c. She can also borrow a loan against the gold balance in the customers locker

The Dvara SmartGold product was launched in October 2019 and is now operational in more than 350 branches across the states of Tamil Nadu, Karnataka and Chhattisgarh. The product was initially offered to the customers of Dvara KGFS who have previously taken up various loans such as joint liability group loans. The features of the gold-based savings product is presented in the appendix.

3.1. Description of the dataset

To conduct this research, we used transaction data from two administrative datasets – Dvara SmartGold dataset and Dvara KGFS datasets. We had access to Dvara SmartGold Dataset from the product launch month in October 2019 to February 2020, comprising of 1,962 customers from Tamil Nadu. We wanted to understand the demographic and overall financial profile (assets and liabilities) of these customers for which we used the Dvara KGFS dataset from 2016-17. Combining both the datasets we draw our insights on low-income households' interaction with a gold-based savings product.

While this is a small subset of the administrative dataset, and the product itself is very new, it would be difficult to clearly establish any statistically significant trends or forecasts. However a preliminary statistical analysis of the demographic and financial profiles of these households and how these interplay with the product usage can form a useful starting point from where further analysis can be carried out once the product has a higher market and more data is available.

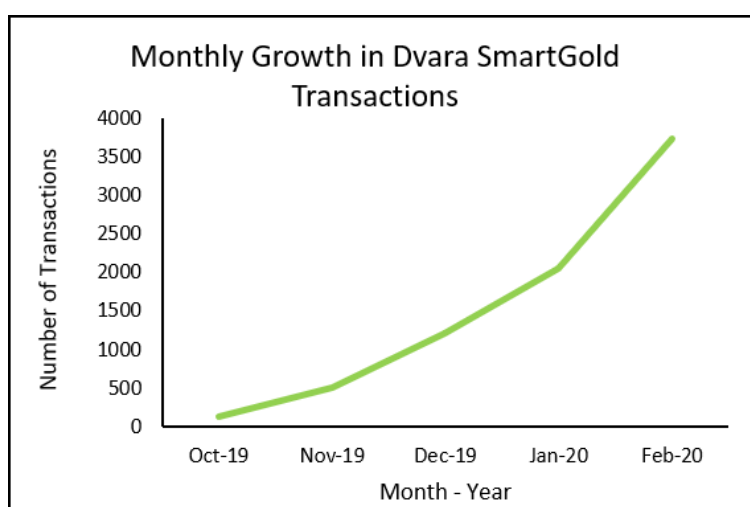
In the following parts of the section, we discuss the insights gained from our preliminary data analysis which was mostly exploratory and descriptive in nature.

²²Dvara SmartGold is a company registered under Dvara Trust

3.1.1. Participation in gold-based micro savings product

We started the analysis by looking at the summary of investments into the product using the administrative dataset of Dvara SmartGold. We found out that all the transactions that have happened so far vis-à-vis the product have been purchase transactions (transactions can either be purchase or sale, but so far, there have only been purchases. Therefore, all subsequent usages of ‘transactions’ in the section refer to purchases only). The product has been growing both in terms of number of customers and transactions every month. Graph 2 shows the month on month growth in the number of transactions.

Graph 2: Month wise number of transactions in Dvara SmartGold



We selected a subset of Dvara SmartGold customers for whom we have prior information from the Dvara KGFS administrative dataset, for all further analysis. This subset comprised of 1,962 customers only from Tamil Nadu. The average amount invested into Dvara SmartGold by the subset of customers is ₹665. Most of the customers invest ₹250 per transaction, with the other higher denominations invested by considerably fewer customers²³. We looked at the number of transactions and found that almost 40 per cent of the customers have invested only once in the product so far. The table below shows the break-up of the number of customers who have made different number of transactions.

Table 4: Households and Number of Transactions

Number of transactions	Number of Households
1	782
2	489
3	328
6	2

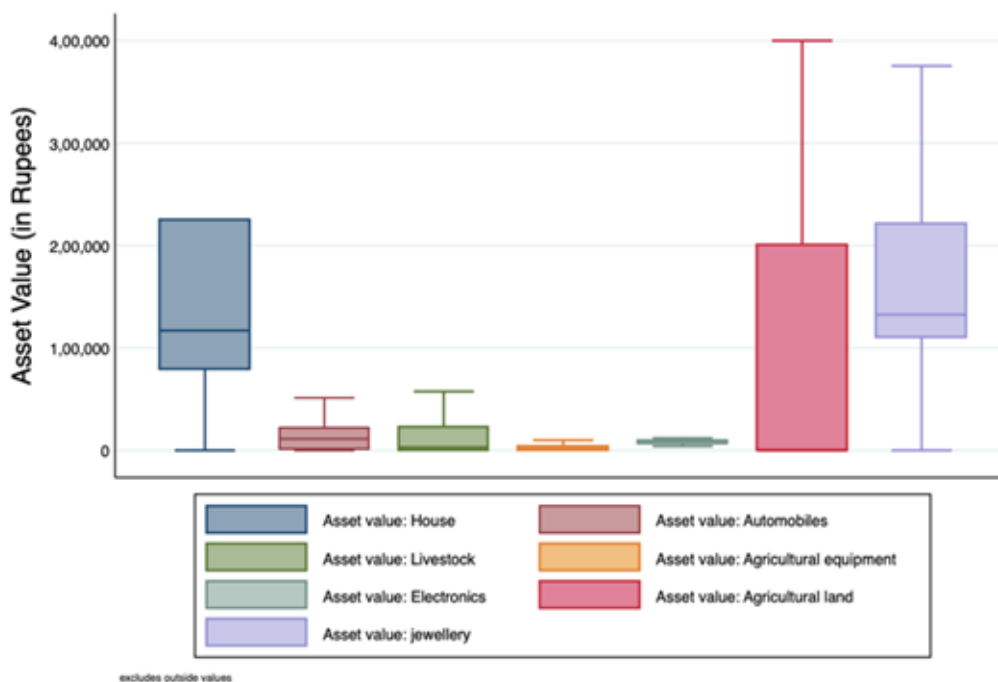
²³Dvara SmartGold Customers are given an option of choosing from fixed denominations to invest. These are ₹250, ₹500, ₹750, ₹1,000, etc.

3.1.2. Asset profile of Dvara SmartGold Households

We looked at the asset portfolio of the households of Dvara SmartGold customers. The average value of their asset holdings is ₹5,27,500, out of which agricultural land, jewellery and residential property form significant shares. Other assets like livestock, durable electronics and agricultural equipments make up small portions. Graphs 3 and 4 show the asset portfolio of households. It is important to note that assets held are mostly physical in nature and financial assets like savings accounts, insurance etc. are almost negligible (less than 1 per cent).

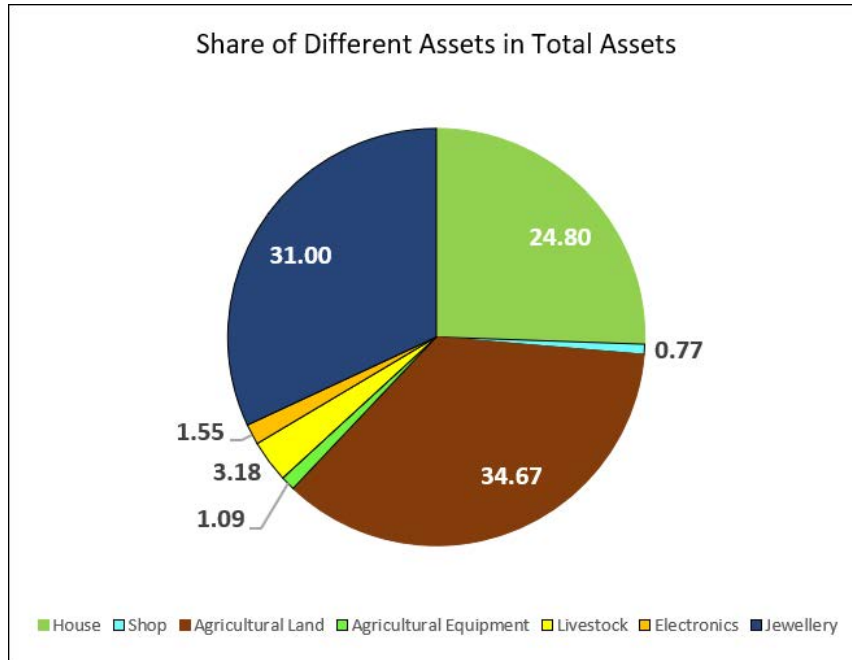
Jewellery makes up the second largest portion of the household asset portfolio at around 31 per cent, with a household having jewellery worth ₹1,65,000 on an average. Only agricultural land takes up a higher share in household asset portfolio (35 per cent) than jewellery. This goes on to show the importance given to jewellery in general and gold for low-income households.

Graph 3: Asset profile of Dvara SmartGold Households



excludes outside values

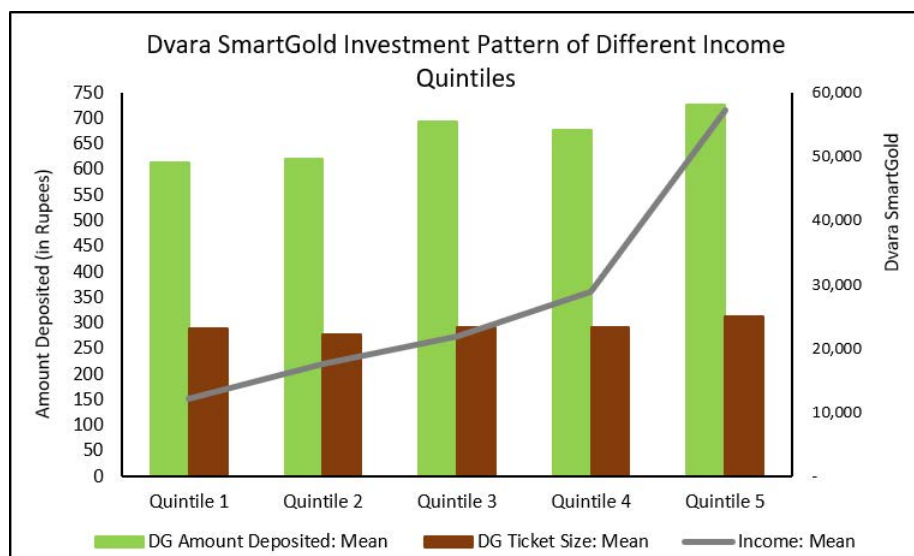
Graph 4: Share of each asset class in household asset portfolio



3.1.3. Participation in gold-based savings product by different income quintiles

We looked at how households belonging to different income quintiles invest in the product. While there are small differences across quintiles, with households from higher income quintiles having deposited more than those from lower income quintiles, these differences do not seem to be considerable.

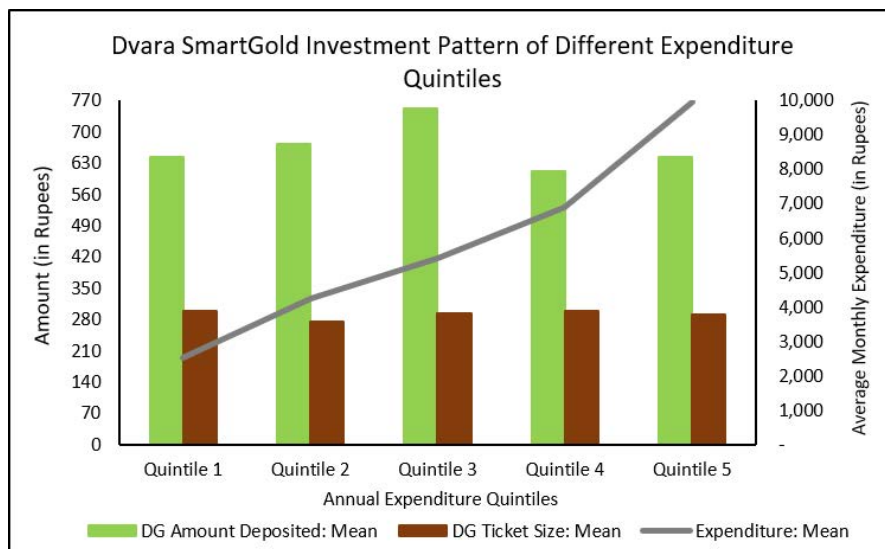
Graph 5: Income Quintiles and Dvara SmartGold Investment



3.1.4. Participation in gold-based savings product by different expenditure quintiles

We looked at how investment in the product varies with total annual household expenses. We found that investments are not changing uniformly with expenditure. However, we see that households in lower expenditure quintiles invest slightly more than households in higher expenditure quintiles.

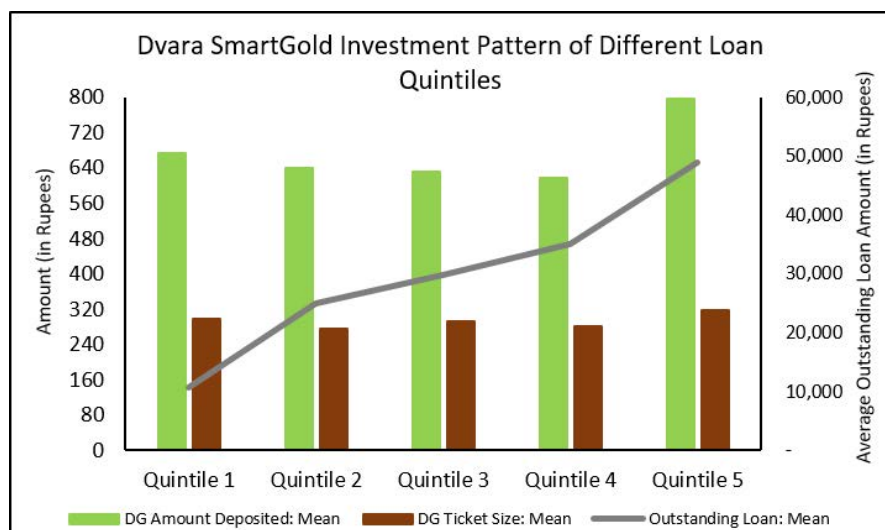
Graph 6: Expenditure Quintiles and Dvara SmartGold Investment



3.1.5. Participation in gold-based savings product by different loan quintiles

We looked at the loan portfolio of households in order to find out if households with different levels of outstanding loans invest differently. While the households in the topmost outstanding loan quintile are an anomaly to the trend, investing more in the product than all other quintiles, the trend seems to be that households in lower quintiles tend to invest more than households in higher quintiles.

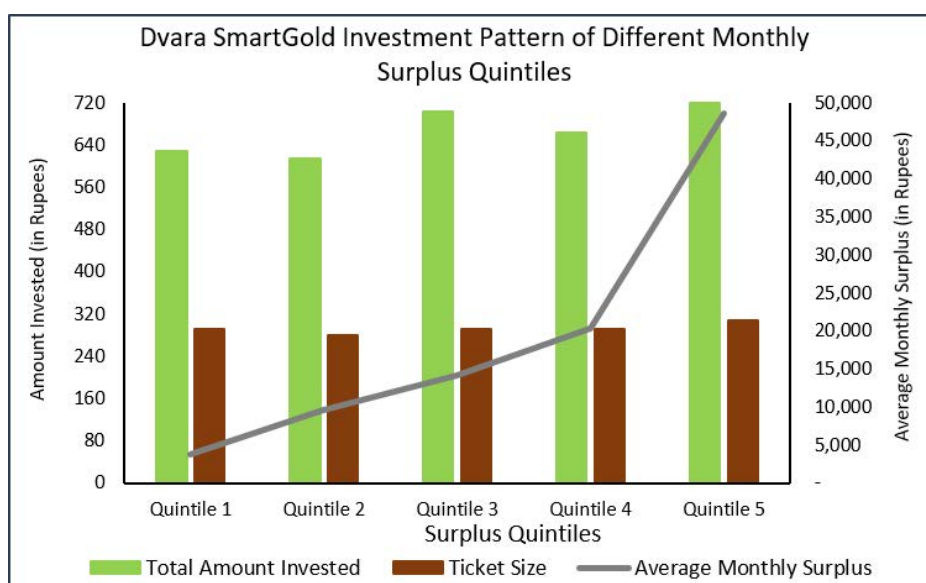
Graph 7: Outstanding Loan Quintiles and Dvara SmartGold Investment



3.1.6. Participation in gold-based savings product by different surplus quintiles

We computed the average monthly surplus held by households by approximating their income, expenditure, and loan payment, and segregated them into different surplus quintiles. While there is no substantial difference, higher surplus quintiles invest slightly more into the product. However broadly the demand for Dvara SmartGold have been relatively inelastic to surplus income.

Graph 8: Surplus Quintiles and Dvara SmartGold Investment

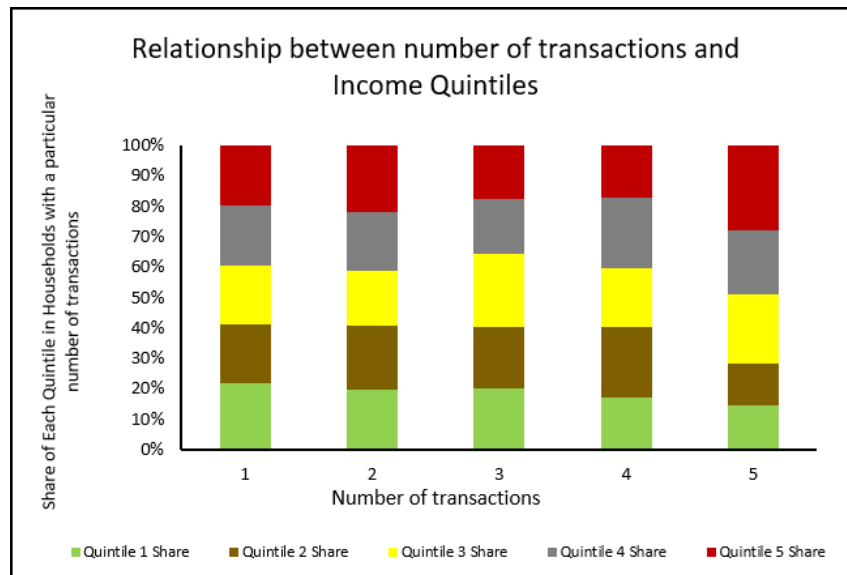


3.1.7. Number of transactions made by Dvara SmartGold households

Based on the customer’s household income and expenditure quintiles, we tried to find out the volume of Dvara SmartGold transactions made by all the customers. We attempted to identify categories of customers who have invested into Dvara SmartGold based on two criteria – their income/ expenditure quintile and their frequency of investment.

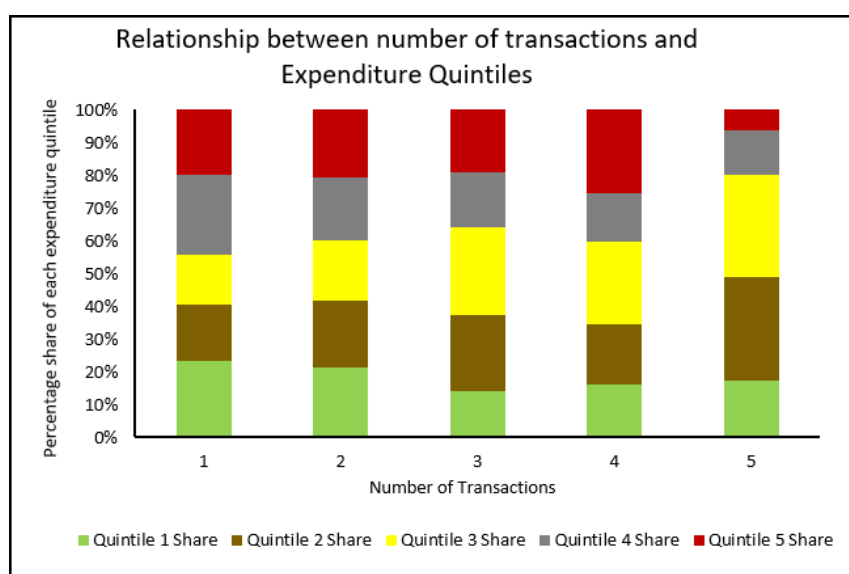
- i. *Number of transactions done by various income quintiles* - As can be seen in Graph 8, the share of households belonging to top three income quintiles keeps increasing as the number of transactions increases, while the share of the bottom two quintiles keeps reducing. This could be interpreted as households with greater income tend to invest more regularly on the product than those belonging to lower income quintile. The graph on the right shows the average annual income of households in different income quintiles.

Graph 9: Number of transactions and Income Quintiles



ii. *Number of transactions done by various expenditure quintiles* - The trend with expenditure quintiles looks to be the opposite of what we found vis-à-vis income quintiles. As can be seen in Graph 9, the share of households belonging to top two expenditure quintiles keeps decreasing as the number of transactions increases, while the share of the bottom three quintiles keeps increasing. This essentially means that households that tend to spend more have invested less frequently than households that spend less. The graph on the right shows the average annual expenditure of households in different expenditure quintiles.

Graph 10: Number of transactions and Expenditure Quintiles

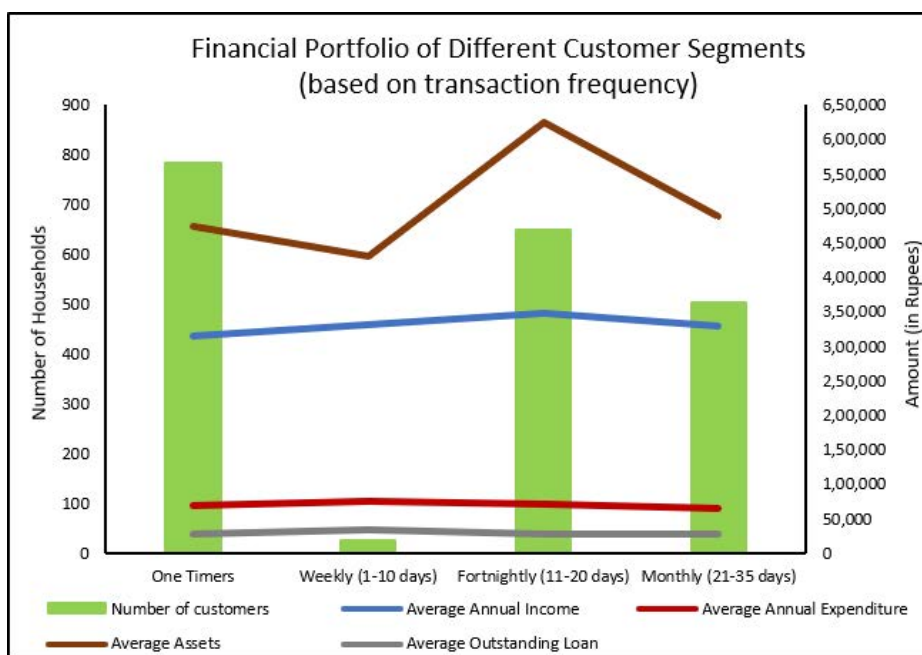


3.1.8. Frequency of Transactions by Dvara SmartGold Customers

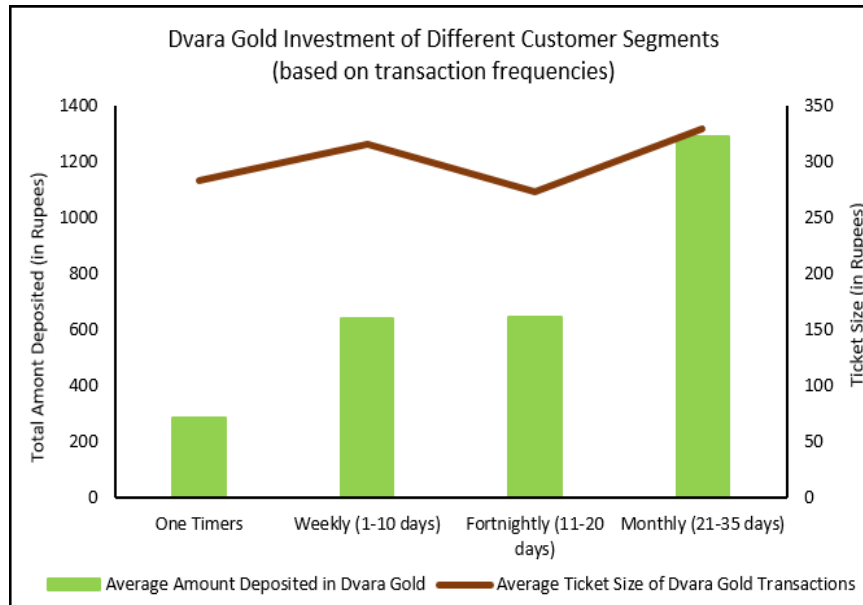
We categorised the Dvara SmartGold customers into different segments based on their frequency of transactions on the product in order to find out how the segments vary in terms of their financial portfolio and amount invested in the product. The segments are one-timers- people who have invested only once, weekly customers- customers whose transaction frequency is between 1-10 days, fortnightly customers- customers whose transaction frequency is between 11-20 days, and monthly customers- customers whose transaction frequency is between 20-35 days. Graph 11A displays the financial portfolio of each segment, while Graph 11B displays the amount invested into the product by them.

We see that fortnightly customers have the highest value of assets and income, while having low expenditure and outstanding liabilities. However, it is the customers who deposit at a monthly frequency who have deposited the most amount on the product so far. There are very few customers who have invested at a weekly frequency (25). Interestingly, the ticket size of weekly customers is comparable with that of monthly customers, and higher than that of fortnightly customers. There are 782 customers who have invested only once in the product and almost all of them have invested the lowest allowed denomination of ₹250.

Graph 11A: Financial Portfolio of Different Customer Segments (based on transaction frequency)



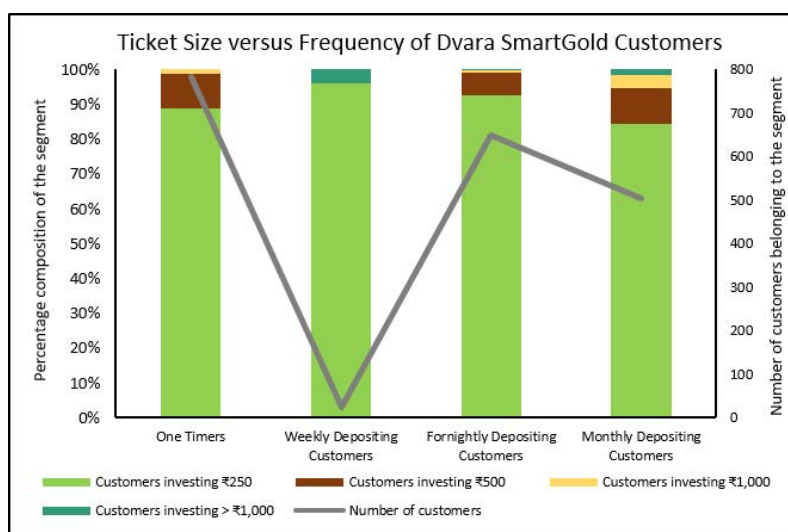
Graph 11B: Investment in Dvara SmartGold by different Customer Segments (based on transaction frequency)



3.1.9. Frequency versus ticket size of transactions

We looked at the intersection of two categories of customer segmentation (segmentation based on ticket size and on transaction frequency) to look at the interplay between the two, accounting for the number of customers comprising each segment based on frequency on the secondary Y axis. As can be seen in Graph 11, a significant portion of customers across all the customer segments, invests ₹250. A sizeable portion of customers that invest fortnightly tend to invest ₹500 whereas customers that invest ₹1,000 and above are the ones that invest on monthly basis.

Graph 12: Ticket Size versus Frequency of Dvara SmartGold customers

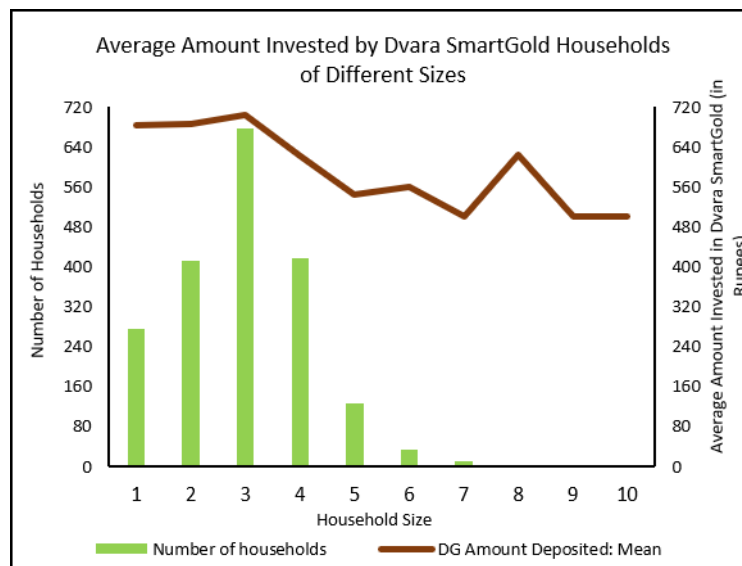


3.1.10. Demographic characteristics of the household

We looked at how various demographic characteristics such as household size, number of female dependents and the primary occupation of the household influence the customers' investment into the product.

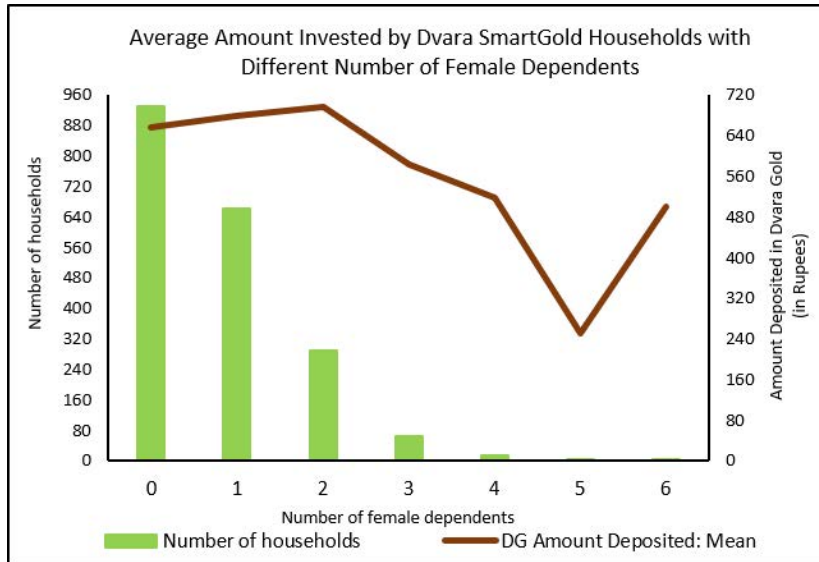
- i. *Household size* - We checked how households of different sizes (in terms of family members) have invested in Dvara SmartGold. As we can see from the below graph, most households have one to four members, while households with more than four members are fewer in number. As we can see from the below graph, the average investment in Dvara SmartGold is higher for smaller households, peaking for households with three members, and drops as the number of people in the household increases from thereon.

Graph 13: Household Size and Dvara SmartGold Investment



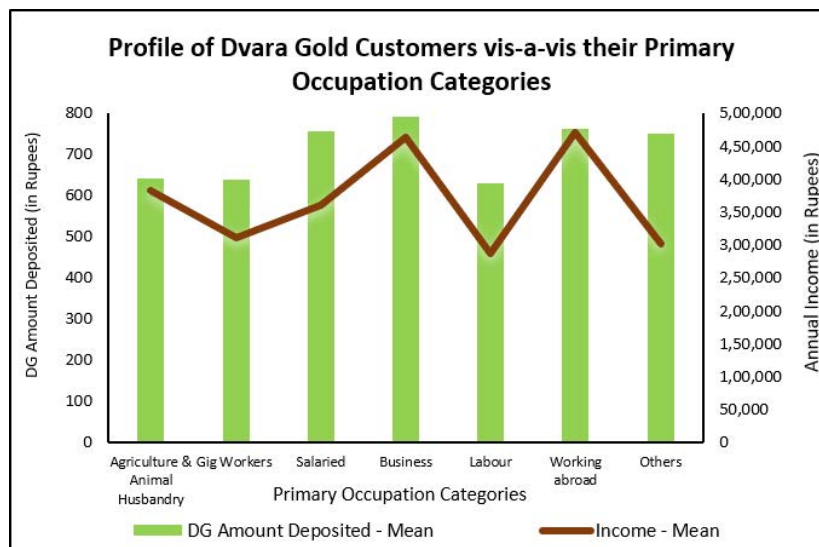
- ii. *Number of female dependents* - We checked if the number of female dependents in the household influence their investment pattern. We observe that on average investments are higher for households with up to two female dependents, peaking for those with two dependents, and dropping from thereon. It is interesting to note that households with one or two female dependents tend to invest more than households with no female dependents. We also find that investment into Dvara SmartGold is made aggressively by households with no female dependents which explains the multiple roles of gold investment – for marriage, as an instrument for precautionary savings as well as a conveniently collateralisable asset. These findings are in line with research undertaken by Badarinza et. Al (2016).

Graph 14: Female dependents and Dvara SmartGold investment



iii. *Primary Occupation of the household* - We attempted to find out how households with different primary occupations invest into product, wherein we compared the average annual income of each categories mapped against the average investment into Dvara SmartGold. We find that households with regular salaried members or members involved in business or members working abroad invested more into the Dvara SmartGold product than households involved in agricultural activities, labour work or gig economy workers²⁴.

Graph 15: Dvara SmartGold Investment by Different Occupation Categories



²⁴Gig economy workers are people who have reported their primary occupation as driver, performing arts and professional work

4. Conclusion

Dvara SmartGold as a gold based micro-savings product is unique product that encourages low-income households to invest systematically towards their future gold consumption and provides safety and flexibility as per their needs. The product has seen strong uptake in Tamil Nadu, Karnataka and Chhattisgarh, with majority share of its customers from Tamil Nadu. Within six months more than 7,500 transactions have been recorded so far by more than 3,500 customers across three states.

Our data analysis of around 2,000 households show that a few households have already invested as much as ₹9,000 in the product and invested around six times in a span of five months. The number of transactions on the product has also steadily risen month on month consistently since the launch of the product. While this shows the potential of the product in realising the gold savings goals of low- and middle-income households, a majority of customers investing only once and choosing the lowest available denomination of ₹250 shows that there is a need to encourage households to invest more and regularly in the product.

Our analysis has also shown that households from higher income quintiles, lower expenditure (and higher surplus) and liability quintiles, and smaller families have tended to invest more in the product, both in terms of amount invested and the regularity of transactions. The presence of up to two female dependents in the household has also shown to increase the customers' investment in the product but we also observe households with no female dependents to invest considerably into the product. Customers with primary household occupations as salaried jobs, members working abroad and business have invested more in the product than those from other primary occupations. Most of the customers who invest in higher ticket sizes (₹1,000 or more) are those who invest at a monthly frequency.

The caveat to be kept in mind while reading all these findings is that both the product and the data are in its nascent stages and it is too soon to establish any statistical significance to these findings, or read too much into them. We shall be able to establish relationships and trends only with time and availability of more data. However, these provide a good starting point for carrying out further analysis on the usage of the product in the coming days.

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Appendix: Features of Dvara SmartGold Product

Features of the scheme	Benefits of the Scheme	Registration to the Product	Purchasing Gold (Credit to Account)	Selling Gold (Debit from account)	Exchanging with Coins / Jewellery
<ul style="list-style-type: none"> - Operates like a savings account - Flexibility of investment – daily, weekly, monthly, ad-hoc - Fixed denominations (₹250, ₹500, ₹1,000, ₹1,500, ₹2,000 etc.) - Any time withdrawal from the account or redemption of balance held into coins / jewellery - Option to take a loan against the account balance 	<ul style="list-style-type: none"> - The customer gets up to 10 per cent extra gold by investing small amounts repeatedly in this savings product, instead of buying at once on festival days from the bank or from any other jeweller. - This is because of price averaging over the time period. 	<ul style="list-style-type: none"> - The customer can register for the product by reaching out to the nearest touchpoint - The customer has to submit their ID proof, address proof and mobile number and verify the same with an OTP - The account will be activated soon after the verification 	<ul style="list-style-type: none"> - The customer can buy the gold in grams or rupees at the rate suggested by the partner bullion bank - The purchase records of the customer are recorded in the passbook 	<ul style="list-style-type: none"> - The customer can sell gold in terms of grams or rupees - The equivalent amount will be credited into the corresponding bank account from which they have made the investment payments 	<ul style="list-style-type: none"> - Coins: The customer can ask balance to be converted to coins in multiples of 1 gram. The making and delivery charges can be deducted from the account or transferred separately - Jewellery: The customer can request for a list of jewellers. The customer can give instructions to credit the jeweller's account with the grams of value of gold for which the jewellery will give a credit.