Understanding the roles of locus of control, self-efficacy and fatalism on consumer redress for women in rural India

PRE-ANALYSIS PLAN

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1. INTRODUCTION

1.1 Summary

Interventions have been instrumental in increasing women's access and engagement with digital financial services (DFS) in LMICs. However, notably absent from both academic and practitioner research is a focus on gender and consumer redress. Despite the severity of the societal and individual barriers that limit women's ability to raise complaints and resolve disputes, empirical evidence is thin and fragmented. Situating our research in India - a leading DFS market - our survey examines the role of intrinsic factors of locus of control, self-efficacy and fatalism in determining how women perceive and manage consumer redress behaviors, such as raising complaints, seeking alternative complaints channels, or inaction. The results from this survey will lay the groundwork for experiments that test behaviourally informed interventions to improve the consumer redress experience for women.

The research aims to answer the following question: *"What is the role of individual belief systems (i.e. locus of control, fatalism, and self efficacy) in determining women's consumer redress perceptions, attitudes, and key redressal behaviors?"* We hypothesize that fatalism, external locus of control and low self-efficacy will explain inaction, low uptake, and engagement with consumer redress mechanisms.

Through this survey, we aim to:
- Understand the relationship between three individual-specific psychological factors (locus of control, self-efficacy, and fatalism) and self-reported DFS consumer redress knowledge, attitudes and behaviors.

- Test additional factors explaining grievance redressal identified in a qualitative interview phase: hassle aversion, trust (in DFS), and social norms around DFS usage and redressal.

- Control for factors surfaced in the literature review such as gender, age, education, employment status, and household income.

- Control for variables identified in the qualitative research phase, including previous experience with complaints across different victimhood contexts, and household division of labor.

- Compare the results of these tests between male and female subjects.

We aim to use these findings to improve consumer redress uptake and action for women in rural India, potentially through strengthened control and self-efficacy.

Table 1: Change in explanatory variables linked to expected increase/improvement in redress knowledge, behaviors, and attitudes

Explanatory Variable	Change direction associated with improvement in redressal
Locus of control	- Internality *increases* - Powerful others *decreases* - Chance *decreases*
Self-Efficacy	Self-efficacy *increases*
Fatalism	Fatalism *decreases*
Hassle aversion	Hassle aversion *decreases*
Trust in DFS	Trust in DFS *increases*
Social norms around DFS	- Women preferring DFS over cash in HH *increases* - Awareness among women in the community about redressal *increases* - Respect towards redressal seekers in the community *increases* - Backlash towards redressal seekers from family *decreases* - Backlash from family for money related issues *decrease*

2. METHODS

2.1 Survey Design

Data will be collected through surveys. Potential respondents will be contacted via surveyors.

Overall, the survey measures:
- Self-reported challenges with DFS (e.g., type of challenge, time taken, type recourse)
- Types of action in response to challenges (e.g., contact provider, contact agent, alternative methods such as customer inaction)
- Willingness to voice complaints
- Standardized measures of locus of control, self-efficacy, and fatalism
- Perceived knowledge vs. actual knowledge around consumer redress practices

2.2 Sample Identification

The survey will include 450 women and men:
- Located in rural UP or Bihar
- Who have used DFS at any point
- Between the ages of 18-55 years

3. EMPIRICAL ANALYSIS

3.1 Variables

3.1.1 Outcome variables

Our instruments include the following outcome measures:
1. DFS redressal knowledge (perceived knowledge vs. actual knowledge around consumer redress practices)
2. DFS redressal attitudes (pro-redressal seeking attitude or not)
3. Stated DFS redressal behavior (types of action in response to challenges: self redressal, seek redressal or inaction)

Table 2: Outcome variables

Construct	Variable Name	Question	Possible Answers and Variable Construction
DFS redressal behavior: Types of action in response to challenges (e.g., contact provider, contact agent, alternative methods, inaction)	challenge_response_1	For each of the following DFS-related challenge, please select your preferred response to the issue: 1. If I send money to the wrong person on DFS, I:	1. Contact the DFS' formal customer care 2. Raise a complaint with government-provided redressal mechanism 3. Do nothing to solve this issue 4. Contact my bank's representatives 5. Contact CSP/DFS agent 6. Contact the recipient 7. Ask for help from a family member 8. Ask for help from a friend 9. I have not faced such an issue ever 10. Other: _____
	challenge_response_2	2. If I experience UPI-based fraud, I:	
	challenge_response_3	3. If my money gets stuck during a DFS transaction, I:	Self redressal = if challenge_response_x = 1, 2, 4, 5, 6 Seek redressal = if challenge_response_x = 7, 8 Inaction = if challenge_response_x = 3
	challenge_response_4	4. If my DFS' formal customer care experience was poor, I:	
	challenge_response_5	5. If I can't reach DFS' formal customer care, I:	**Create a score for self redressal, seek redressal and inaction e.g., total *self* redressals divided by the number of challenges faced. Thus, we will end up with a comparable score between 0-1 for all participants.** Create a combined score for seek redressal or inaction as well. DATA TYPE: Interval - binomial
DFS Redressal attitudes	redressal_attitude_1	If someone is ordering something small online or sending money through an app and there is confusion about whether the transaction went	1. Much better to report 2. A little better to report 3. No clear better thing to do

Construct	Variable Name	Question	Possible Answers and Variable Construction
		through, is it better to report the problem or let it go?	4. A little better to let it go 5. Much better to let it go **Pro-redressal seeking-attitude = 1** if redressal_attitude_1 = 1 or 2 Otherwise = 0 DATA TYPE: Nominal - binary
	redressal_attitude_2	If you're ordering something small online or sending money through an app and there is confusion about whether the transaction went through, you feel a sense of unfairness and want to right the wrong done to you.	1. Completely disagree 2. Somewhat disagree 3. Neither agree nor disagree 4. Somewhat agree 5. Completely agree **Pro-redressal seeking attitude = 1** if redressal_attitude_2 = 4 or 5 Otherwise = 0 DATA TYPE: Nominal - binary
	redressal_attitude_3	How important is it for you to get a problem like money getting stuck during online transactions fixed?	1. Not important at all 2. Unimportant 3. Not important but not unimportant 4. Important 5. Very important **Pro-redressal seeking attitude = 1** if redressal_attitude_3 = 4 or 5

Construct	Variable Name	Question	Possible Answers and Variable Construction
			Otherwise = 0 DATA TYPE: Nominal - binary
	redressal_attitude_4	How distracted would you be from your other work/activities if your money gets stuck during online transactions?	1. Not distracted at all 2. Somewhat Distracted 3. Very distracted **Pro-redressal seeking attitude = 1** if redressal_attitude_4 = 2 or 3 Otherwise = 0 DATA TYPE: Nominal - binary
DFS redressal perceived knowledge: Perceived knowledge around consumer redressal	perceived_knowledge	1. On a scale of 1 to 10, where 1 is not at all and 10 is extremely high, how would you rate your understanding and knowledge of your DFS apps' customer services and other formal complaints mechanisms?	No manipulation needed, use ordinal variable as dependent variable DATA TYPE: Ordinal
DFS redressal knowledge: Actual knowledge and	knowledge_q1	If you wish to file a complaint as a consumer against any goods or services provider, can you do so online using a government-run website? 1. Yes 2. No 3. Don't Know	**For actual knowledge variables:** Count variable of the number of actual knowledge questions that were answered correctly - 0, 1, 2, 3 or 4 DATA TYPE: Ratio **For confidence variables:**
	confidence_q1	How confident are you that your answer is correct?	**Bias (over/under confidence) =** score measured according to average subjective confidence estimates and objective accuracy

Construct	Variable Name	Question	Possible Answers and Variable Construction
confidence in knowledge around consumer redressal		Scale of 1-9: 1: 20% 9: 100%	$$bias = \frac{\sum c}{n} - \frac{\sum a}{n}$$ $$abs.\ bias = \frac{\sum(c-a)^2}{n}$$ • c is the confidence ratings summed across all trials • a is the accuracy summed across all trials • n is the total number of trials
	knowledge _q2	If you want to escalate your complaint to the RBI ombudsman, will you have to pay to file a complaint or can you do so free of cost? 1. Will need to pay 2. Free of cost 3. Don't Know	
	confidence_q2	How confident are you that your answer is correct? Scale of 1-9: 1: 20% 9: 100%	*From +1 to -1. High (> zero) and low (< zero) scores, indicative of poor confidence calibration, are described as over and under confidence respectively. 0 is realistic performance.*
	knowledge _q3	"If your DFS provider doesn't resolve your complaint to your satisfaction after X days, you can approach RBI's ombudsman for redress." 1. Text entry: X number of days 3. Don't Know	**Discrimination (ability to distinguish correct and incorrect judgements) =** score measured according to the difference between average confidence assigned to correct and incorrect items
	confidence_q3	How confident are you that your answer is correct? Scale of 1-9: 1: 20% 9: 100%	$$D = \frac{\frac{\sum c_{correct}}{p} - \frac{\sum c_{incorrect}}{q}}{\sigma}$$

Construct	Variable Name	Question	Possible Answers and Variable Construction
	knowledge _q4	Are Indian citizens guaranteed the "right to seek consumer redressal" by the Constitution? 1. Yes 2. No 3. Don't Know	$$r = \frac{\sum(c - c_{mean})(a - a_{mean})}{\sqrt{\sum(c - c_{mean})^2 (a - a_{mean})^2}}$$ $$= \frac{(n_c - n_d)}{(n_c + n_d)}$$ • correct is confidence ratings of all correct trials • incorrect is confidence ratings of all incorrect trials • p is total number of correct trials • q is total number of incorrect trials • σ is the standard deviation of all confidence ratings *From +1 to -1. Better discrimination (higher D) will predict increasing optimal and realistic decision tendencies and decreasing incompetent and hesitant tendencies.* DATA TYPE: Interval
	confidence_q4	How confident are you that your answer is correct? Scale of 1-9: 1: 20% 9: 100%	

3.1.2 Predictor variables

The three individual-level psychological factors of interest are locus of control, self-efficacy and fatalism.

For **Locus of Control**, we use the Internality, Powerful Others and Chance (IPC) Scale (Levenson, 1981), which captures three independent components of the construct of control:
1. Internality: if people see outcomes as contingent on individual behavior
2. Powerful Others: beliefs about whether other people control events in their lives
3. Chance: whether individuals think chance, luck or fate affects their outcomes

We rephrased two questions in the IPC Scale to be about malaria, instead of driving, to fit the context of rural women's lives. Thus, the locus of control score will be constructed in two ways, with and without the malaria questions.

For **Self-Efficacy**, we adapted the General Perceived Self-Efficacy Scale (Schwarzer & Jerusalem, 1995). **Fatalism** scores are based on a six-question scale taken from the Esparza et al. (2015) fatalism sub-scale.

Additional factors that we wanted to test as explanations for grievance redressal include **hassle aversion, trust,** and **social norms**.

Table 3 summarizes the questions used to measure our predictor variables.

3.1.2 Control variables

We included demographic variables to serve as covariates, as well as DFS usage, DFS redressal challenge, household division of labor and previous experience with complaints across different victimhood contexts. The variables highlighted in green will be used as secondary predictors. See Table 4 for a summary of these variables.

Table 3: Predictor variables

(Secondary predictor variables highlighted in green)

Construct	Measure	Question	Variable Construction
Locus of control	24 question scale	1. Strongly disagree 2. Disagree 3. Neither agree nor disagree 4. Agree 5. Strongly agree	Sum of the agreement to statements in this scale is used to create 3 scores. The higher the score, the greater the value of that dimension within the locus of control. Internality score: 8 to 40 Powerful others score: 8 to 40 Chance score: 8 to 40 DATA TYPE: Ordinal
Self-efficacy	10 question scale	1. Strongly disagree 2. Disagree 3. Neither agree nor disagree 4. Agree 5. Strongly agree	Self-efficacy score: 10 to 50 Sum of the agreement to statements in this scale is used to create a score. Higher the score, the higher the self-efficacy. DATA TYPE: Ordinal
Fatalism	6 question scale	1. Strongly disagree 2. Disagree 3. Neither agree nor disagree 4. Agree 5. Strongly agree	Fatalism score: 6 to 30 Sum of the agreement to statements in this scale is used to create a score. Higher the score, the higher the fatalism. DATA TYPE: Ordinal
Hassle aversion	1 question measure	Consider that you are in a hypothetical situation where you are in a different state while your family is at home. You need to send **X Rupees** to your family. You have two	9 arms: 9 combinations for a hypothetical situation where you can send money 2 different ways - either through an app or through an

		ways to send this money:	agent. A respondent will only see 1 of the 9 combinations.
		1. By sending it yourself via a smartphone app that can be used to send money to other people by entering their phone number or bank details.	We will randomize the amount of money to be sent (low, medium, high bid) and the % the agent will charge (low, medium or high bid).
		a. This **app does not charge you any % of the amount as fees** for making the transfer. The full amount will reach your family. For example, if you want your family to receive Rs. 100, you can use the app and send Rs. 100 from your account to your family's phone number and they will receive the full Rs. 100 you have sent.	We will compare responses (choosing 1. through an app or 2. through an agent) across participants from the 9 arms).

DATA TYPE: Nominal - binary |
		b. There are some **risks associated with using the app**, such as servers being down, bad internet affecting the transfer, and problems with entering the incorrect details like amount or beneficiary account number.	
		2. By approaching an agent to make the transfer for you.	
		a. **This agent will charge you A%** on top of the amount that you need to send home as a fee. For example, if the fee is 10% and you want your family to receive Rs. 100, you will have	

		to give the agent 100 + (100*0.10) = Rs. 110. The agent will keep Rs. 10 and your family will get Rs. 100. b. This agent **guarantees** you that the money will reach your family, and if there are **any issues with the transfer, the agent will solve them**. Which option would you prefer?	
Trust	trust_dfs_1	1. I find DFS better than cash to carry out my daily transactions.	1. Strongly disagree 2. Disagree 3. Neither agree nor disagree 4. Agree 5. Strongly agree Trust score: 3 to 15 Sum of the agreement to trust in DFS statements is used to create a score. The higher the score, the greater the trust in DFS. DATA TYPE: Ordinal
	trust_dfs_2	2. I feel comfortable with making transactions worth more than 2000 rupees through DFS.	
	trust_dfs_3	3. I believe formal customer service can solve our DFS-related problems well.	
Social norms surrounding DFS usage	dfs_usage_norms _1	1. The male members of my household prefer making online transactions through DFS rather than cash transactions.	1. Strongly disagree 2. Disagree 3. Neither agree nor disagree 4. Agree 5. Strongly agree Use ordinal variable as is.

			DATA TYPE: Ordinal
	dfs_usage_norms_2	2. The female members of my household prefer making online transactions through DFS rather than cash transactions.	1. Strongly disagree 2. Disagree 3. Neither agree nor disagree 4. Agree 5. Strongly agree Use ordinal variable as is. DATA TYPE: Ordinal
Social norms surrounding DFS redress	redress_norms_1	**[men awareness norms]** 1. Male members of my community are well aware of consumer redressal related processes and laws.	1. Strongly disagree 2. Disagree 3. Neither agree nor disagree 4. Agree 5. Strongly agree Use ordinal variable as is. DATA TYPE: Ordinal
	redress_norms_2	**[women awareness norms]** 2. Female members of my community are well aware of consumer redressal related processes and laws.	1. Strongly disagree 2. Disagree 3. Neither agree nor disagree 4. Agree 5. Strongly agree Use ordinal variable as is. DATA TYPE: Ordinal
	redress_norms_3	**[community outlook on redressal seeking]** 3. If I seek redress for my DFS problems myself, I will be respected within my community.	1. Strongly disagree 2. Disagree 3. Neither agree nor disagree

			4. Agree 5. Strongly agree Use ordinal variable as is. DATA TYPE: Ordinal
	redress_norms_4	**[family outlook on redressal seeking]** 4. If I seek redress for my DFS problems, I may receive backlash from my family members.	1. Strongly disagree 2. Disagree 3. Neither agree nor disagree 4. Agree 5. Strongly agree Create a sum of redress_norms_4 and redress_norms_5: 2 to 10 (8 and higher indicates backlash from family) DATA TYPE: Ordinal
	redress_norms_5	**[family outlook on redressal seeking]** 5. If I face any money-related issues while using DFS, I may receive backlash from my family members.	

Table 4: Control variables

Construct	Variable Name	Question	Possible Answers and Variable Construction
DFS Usage	screening_dfs_usage	Have you **ever** used any of these apps or services before? If yes, please select all that you have used.	1. PhonePe 2. Any government bank's app on a smartphone 3. Any private bank's app on a smartphone 4. GPay 5. BHIM 6. PayTM 7. Netbanking 8. Mobile banking 9. UPI or QR codes scan payment 10. Mobile loan 11. DFS/CSP agent: agent who charges fees for making online payments for you 12. Other related online or smartphone based financial services: _____ 13. None of the above **Mobile banking used (1)** if selected 2, 3, 7, 8 **Mobile money/wallets used (1)** if selected 4, 5, 6, 9 **Mobile loans used (1)** if selected 10 **DFS/CSP agent used (1)** if selected 11 DATA TYPE: Nominal - binary
Household division of labour	hh_labor_division_1	Which of the following members in your household is in charge of solving the problem if a cooking gas/LPG cylinder is not delivered to your house on time?	1. Husband 2. Wife 3. Mother-in-law 4. Father-in-law 5. Brother 6. Sister
	hh_labor_division	Which of the following members in your	

	_2	household are in charge of handling the household's finances?	7. Other: _____ **Division of labor favors women in the household being in charge of financial decisions (1)** - if hh_labor_division_1 & hh_labor_division_2 = 2 or 3 or 6 (multiple options can be selected) Division of labor does not favor women in the household being in charge of financial decisions (0) - if the above condition isn't met DATA TYPE: Nominal - binary
Previous experience with complaints across different victimhood contexts	prior_complaint_exp_1	1. I have had negative experiences with voicing my concerns to people in the past.	1. Strongly disagree 2. Disagree 3. Neither agree nor disagree 4. Agree 5. Strongly agree Redress challenge 1 score: 5 to 25 Sum of the agreement to statements relating to prior complaint behaviour is used to create a score. The higher the score, the more negative previous experiences. DATA TYPE: Ordinal
	prior_complaint_exp_2	2. I have had negative experiences with complaining about issues I have faced in the past.	
	prior_complaint_exp_3	3. In the past, when I have tried to complain to formal institutions regarding any issues I faced, I have received backlash/have not had my issues solved properly.	
	prior_complaint_exp_4	4. I am dissatisfied with my past interactions with bank officials.	
	prior_complaint_exp_5	5. I find bank visits unpleasant and try to avoid them if possible.	
DFS redressal experience: Self-reported challenges	redress_challenges_1	Have you ever tried calling your DFS **customer care** regarding an issue you faced? (Logic: if yes → show Qs 40, 41, 42, if no → skip to Q43)	1. Yes 2. No

around DFS redressal (ex. type of challenge, time taken, type of recourse)	redress_challenges_1a	Please rate how much you agree or disagree with the following statements on a scale of 1 to 5, where 1 is strongly disagree and 5 is strongly agree. I feel fear/apprehension when talking to the DFS' formal customer care.	1. Strongly disagree 2. Disagree 3. Neither agree nor disagree 4. Agree 5. Strongly agree Redress challenge 1 score: 3 to 15 Sum of the agreement to statements relating to redress challenge 1 is used to create a score. The higher the score, the greater the challenge. DATA TYPE: Ordinal
	redress_challenges_1b	I find it hard to explain my DFS-related issue to the customer care executive.	
	redress_challenges_1c	I find it hard to understand what the customer care executive is telling me.	
	redress_challenges_2	Have you ever tried raising your DFS-related complaints through the DFS' **chatbot**? *(Logic: if yes → show Qs 44, 45, 46, if no → skip to Q47)*	1. Yes 2. No
	redress_challenges_2a	I feel fear/apprehension when using a chatbot to raise my complaints.	1. Strongly disagree 2. Disagree 3. Neither agree nor disagree 4. Agree 5. Strongly agree Redress challenge 2 score: 3 to 15 Sum of the agreement to statements relating to redress challenge 2 is used to create a score. The higher the score, the greater the challenge. DATA TYPE: Ordinal
	redress_challenges_2b	I find it hard to explain my DFS-related issue to the chatbot.	
	redress_challenges_2c	I find it hard to understand what the chatbot is telling me.	

	redress_challenges_3	Have you ever tried raising your DFS-related complaints by **emailing the DFS/raising a ticket with DFS support?** *(Logic: if yes → show Qs 48, 49, 50, if no → skip to Q51)*	1. Yes 2. No
	redress_challenges_3a	I feel fear/apprehension when using email/raising a ticket to raise my complaints.	1. Strongly disagree 2. Disagree 3. Neither agree nor disagree 4. Agree 5. Strongly agree
	redress_challenges_3b	I find it hard to explain my DFS-related issue by email/raising tickets.	
	redress_challenges_3c	I find it hard to understand the responses I receive for my emails/tickets.	Redress challenge 3 score: 3 to 15 Sum of the agreement to statements relating to redress challenge 3 is used to create a score. The higher the score, the greater the challenge. DATA TYPE: Ordinal
DFS redressal behavior: Self-reported challenges around DFS	dfs_challenges_1	1. I face problems with entering the correct beneficiary bank/UPI/phone number/amount details in the DFS. 1. Strongly disagree 2. Disagree 3. Neither agree nor disagree 4. Agree 5. Strongly agree	High self-reported challenge (1): if dfs_challenges_1 = 4 (Somewhat agree) or 5 (Completely agree) Low challenges faced (0): If the above condition isn't met DATA TYPE: Binary
	dfs_challenges_2	2. I face problems with understanding how to use DFS.	High self-reported challenge (1): if dfs_challenges_2 = 4 (Somewhat agree) or 5 (Completely agree) Low challenges faced (0): If the above condition isn't met

			DATA TYPE: Binary
	dfs_challenges_3	3. I feel fear/apprehension when dealing with online transactions.	High self-reported challenge (1): if dfs_challenges_3 = 4 (Somewhat agree) or 5 (Completely agree) Low challenges faced (0): If the above condition isn't met DATA TYPE: Binary
	dfs_challenges_4	4. I am worried about my DFS transaction failing/my money getting stuck.	High self-reported challenge (1): if dfs_challenges_4 = 4 (Somewhat agree) or 5 (Completely agree) Low challenges faced (0): If the above condition isn't met DATA TYPE: Binary
Demographics	age	Age	No manipulation needed - continuous variable
	gender	Gender	No manipulation needed - categorical variable Use t-tests to identify differences in our main psychological predictor variables by gender
	state	State 1. Bihar 2. UP 3. Other	No manipulation needed - categorical variable
	district	District	No manipulation needed - categorical variable
	village	Village	No manipulation needed - categorical variable
	marital_status	Marital status	No manipulation needed - categorical variable
	education	Education level	**More than Primary School (1)** - If education = 2 (Secondary School - 5th Standard to 12th Standard), 3 (Undergraduate Degree - Bachelor's/Diploma), 4 (Postgraduate Degree - Masters/PhD)

			Otherwise (0) - If education = 1 (Primary school - completed till the 4th Standard), 5 (Did not go to school/ did not complete primary school), -88 (Don't know/ Can't say), -99 (Refused to answer) DATA TYPE: Nominal - binary
	employment	Employment status	**Takes care of household (1)** - If employment_status = (Unemployed) or (takes care of household) Otherwise (0) DATA TYPE: Nominal - binary

	primary_income_earner	Are you the primary income earner in your household?
		   1. Yes
		   2. No
			Primary income earner (1)
			
			Not primary income earner (0)
			DATA TYPE: Nominal - binary

	monthly_hh_income	Monthly household income	Log hh_income_per_capita = log (monthly_hh_income/hh_members) DATA TYPE: Continuous
	hh_members	Number of members in the household	No manipulation needed - continuous variable
	phone_ownership_sharing	Phone ownership (phone sharing)	1. Share with spouse 2. Own phone, do not share Own_phone =1 if answer = 2, 0 otherwise DATA TYPE: Nominal - binary
	Phone_ownership_type	Phone ownership (phone type)	1. Basic/feature phone 2. Smartphone Smart_phone =1 if answer = 2, 0 otherwise DATA TYPE: Nominal - binary

3.2 Methods of Analysis & Model Specifications

We will answer the following questions using the model specifications listed in Table 5:

1. Are our main psychological predictor variables (locus of control, self-efficacy and fatalism) correlated with grievance redressal KAPs?
    - Outcome variables
        i. DFS redressal perceived knowledge (ordinal)
        ii. DFS redressal actual knowledge (ratio)
        iii. DFS redressal knowledge - confidence bias (interval)
        iv. DFS redressal knowledge - discrimination (interval)
        v. DFS redressal attitudes (binary)
        vi. DFS redressal behaviors (interval)
    - Predictor variables
        i. Locus of control: 3 subscales (ordinal)
        ii. Self-efficacy (ordinal)
        iii. Fatalism (ordinal)

2. Are our additional predictor variables correlated with grievance redressal KAPs?
    - Secondary predictor variables
        i. Hassle aversion (binary): test for differences in the 9 randomized arms for hassle aversion as well
        ii. Trust (ordinal)
        iii. Social norms surrounding DFS usage (ordinal)
        iv. Social norms surrounding DFS redress (ordinal)

3. Are the psychological models significant with additional predictors?

4. Are these correlations significant after we add additional controls?
    - Include additional controls:
        i. DFS usage (binary)
        ii. Household labor division (binary)
        iii. Prior complaint experience (ordinal)
        iv. Redress challenges (ordinal)
        v. DFS challenges (binary)
        vi. Demographic covariates (continuous, categorical and binary)

5. Sub-group analysis for differences by gender
    - Re-run Model 3 (described in table 5) on the female subsample to check if the predictors are significant for this subsample
    - Re-run Model 3 on the male subsample for the same purpose

6. Cluster analysis to identify personas in relation to grievance redressal
    - Conduct cluster analysis if multiple significant individual predictors of seeking redressal are found through the models

○ Else, conduct an exploratory principal components analysis (e.g., if there are issues with cluster analysis due to small sample size)

Table 5: Models for psychological predictors and KAP outcomes

Outcome Variable	Model 1 (Primary predictors)	Model 2 (Secondary predictors)	Model 3 (All)
DFS redressal perceived knowledge	**Outcome:** Ordinal (scale 1-10) **Primary predictors (ordinal):** Locus of control, self-efficacy, fatalism **Controls:** DFS usage, household labour division, prior complaint experiences, redress challenges, DFS challenges, demographic covariates **Model:** Ordinal regression (ordered logit)	**Outcome:** Ordinal (scale 1-10) **Secondary predictors:** Hassle aversion, trust, DFS usage social norms, DFS redress social norms **Controls:** DFS usage, household labour division, prior complaint experiences, redress challenges, DFS challenges, demographic covariates **Model:** Ordinal regression (ordered logit)	**Outcome:** Ordinal (scale 1-10) **Primary predictors (ordinal):** Locus of control, self-efficacy, fatalism **Secondary predictors:** Hassle aversion, trust, DFS usage social norms, DFS redress social norms **Controls:** DFS usage, household labour division, prior complaint experiences, redress challenges, DFS challenges, demographic covariates **Model:** Ordinal regression (ordered logit)
DFS redressal actual knowledge	**Outcome:** Ratio (0-3) **Primary predictors (ordinal):** Locus of control, self-efficacy, fatalism **Controls:** DFS usage, household labour division, prior complaint experiences, redress challenges, DFS challenges, demographic covariates **Model:** Logistic regression	**Outcome:** Ratio (0-3) **Secondary predictors:** Hassle aversion, trust, DFS usage social norms, DFS redress social norms **Controls:** DFS usage, household labour division, prior complaint experiences, redress challenges, DFS challenges, demographic covariates **Model:** Logistic regression	**Outcome:** Ratio (0-3) **Primary predictors (ordinal):** Locus of control, self-efficacy, fatalism **Secondary predictors:** Hassle aversion, trust, DFS usage social norms, DFS redress social norms **Controls:** DFS usage, household labour division, prior complaint experiences, redress challenges, DFS challenges, demographic covariates **Model:** Logistic regression

DFS confidence bias	**Outcome:** Interval (between -1 and +1) **Primary predictors (ordinal):** Locus of control, self-efficacy, fatalism **Controls:** DFS usage, household labour division, prior complaint experiences, redress challenges, DFS challenges, demographic covariates **Model:** OLS regression	**Outcome:** Interval (between -1 and +1) **Secondary predictors:** Hassle aversion, trust, DFS usage social norms, DFS redress social norms **Controls:** DFS usage, household labour division, prior complaint experiences, redress challenges, DFS challenges, demographic covariates **Model:** OLS regression	**Outcome:** Interval (between -1 and +1) **Primary predictors (ordinal):** Locus of control, self-efficacy, fatalism **Secondary predictors:** Hassle aversion, trust, DFS usage social norms, DFS redress social norms **Controls:** DFS usage, household labour division, prior complaint experiences, redress challenges, DFS challenges, demographic covariates **Model:** OLS regression
DFS discrimination bias	**Outcome:** Interval (between -1 and +1) **Primary predictors (ordinal):** Locus of control, self-efficacy, fatalism **Controls:** DFS usage, household labour division, prior complaint experiences, redress challenges, DFS challenges, demographic covariates **Model:** OLS regression	**Outcome:** Interval (between -1 and +1) **Secondary predictors:** Hassle aversion, trust, DFS usage social norms, DFS redress social norms **Controls:** DFS usage, household labour division, prior complaint experiences, redress challenges, DFS challenges, demographic covariates **Model:** OLS regression	**Outcome:** Interval (between -1 and +1) **Primary predictors (ordinal):** Locus of control, self-efficacy, fatalism **Secondary predictors:** Hassle aversion, trust, DFS usage social norms, DFS redress social norms **Controls:** DFS usage, household labour division, prior complaint experiences, redress challenges, DFS challenges, demographic covariates **Model:** OLS regression
DFS redressal attitude	**Outcome:** 4 separate binary variables (0,1) (Check for high internal consistency in the outcome variables: if so, use 1 combined binary variable for pro-redressal seeking attitude)	**Outcome:** 4 separate binary variables (0,1) (Check for high internal consistency in the outcome variables: if so, use 1 combined binary variable for pro-redressal seeking attitude)	**Outcome:** 4 separate binary variables (0,1) (Check for high internal consistency in the outcome variables: if so, use 1 combined binary variable for pro-redressal seeking attitude)

	Primary predictors (ordinal): Locus of control, self-efficacy, fatalism **Controls:** DFS usage, household labour division, prior complaint experiences, redress challenges, DFS challenges, demographic covariates **Model:** Logistic regression	**Secondary predictors:** Hassle aversion, trust, DFS usage social norms, DFS redress social norms **Controls:** DFS usage, household labour division, prior complaint experiences, redress challenges, DFS challenges, demographic covariates **Model:** Logistic regression	**Primary predictors (ordinal):** Locus of control, self-efficacy, fatalism **Secondary predictors:** Hassle aversion, trust, DFS usage social norms, DFS redress social norms **Controls:** DFS usage, household labour division, prior complaint experiences, redress challenges, DFS challenges, demographic covariates **Model:** Logistic regression
DFS redressal behaviours	**Outcome:** Interval (between 0 and 1 e.g., 0.2) **Primary predictors (ordinal):** Locus of control, self-efficacy, fatalism **Controls:** DFS usage, household labour division, prior complaint experiences, redress challenges, DFS challenges, demographic covariates **Model:** OLS regression	**Outcome:** Interval (between 0 and 1) **Secondary predictors:** Hassle aversion, trust, DFS usage social norms, DFS redress social norms **Controls:** DFS usage, household labour division, prior complaint experiences, redress challenges, DFS challenges, demographic covariates **Model:** OLS regression	**Outcome:** Interval (between 0 and 1) **Primary predictors (ordinal):** Locus of control, self-efficacy, fatalism **Secondary predictors:** Hassle aversion, trust, DFS usage social norms, DFS redress social norms **Controls:** DFS usage, household labour division, prior complaint experiences, redress challenges, DFS challenges, demographic covariates **Model:** OLS regression