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Abstract

This paper documents novel evidence of positive assortative matching in African marriage markets along cognitive and socio-emotional skills, time and risk preferences,

and education, using data from rural Mozambique, Côte d'Ivoire, and Malawi.

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Assortative Matching in Africa: Evidence from Rural Mozambique, Côte d'Ivoire, and Malawi*

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JEL Codes: D1, I2, J1.

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[Some] ... say we love those who are like ourselves. – Aristotle 1934, p. 1155.

1. Introduction

Marital sorting based on human capital has important implications for the creation, distribution, and inter-generational transmission of welfare. While the literature finds evidence of this assortative matching – the tendency of men and women who marry to have similar human capital levels – most of this research has been conducted in rich country settings and has largely focused on sorting along educational attainment [e.g. Greenwood et al. 2014]. This is despite the growing literature emphasizing the economic importance of multiple human capital dimensions in both rich and poor contexts [e.g. Heckman et al. 2006, Liu 2013, Abay et al. 2017], as well as recent work on matching and marriage markets showing that sorting is multidimensional [e.g. Dupuy and Galichon 2014, Chiappori et al. 2018].

We present novel evidence of positive assortative matching along cognitive and socio-emotional skills, time and risk preferences, and education using unique data from rural Mozambique, Côte d’Ivoire, and Malawi. In each country, the observed sorting patterns are robust to accounting for simultaneous sorting along the multiple, potentially correlated human capital dimensions. While assortative matching could in part be caused by frictions constraining the search for dissimilar partners, we find strong spousal similarity both overall and within villages. Moreover, against the notion that spouses grow alike over time, we find that sorting is equally strong when we restrict our analysis to younger couples. Taken together, the evidence thus suggests that assortative matching is the outcome of a marriage market equilibrium shaped by spouse preferences. To the best of our knowledge, we are the first to provide systematic evidence of assortative matching on multiple human capital dimensions in Africa.

2. Data

2.1. Data Sources

We exploit three data sources. First, we use data from a survey conducted in April and June 2016 across 150 randomly selected rural communities in the Tsangano, Angónia, Macanga, and

Chifunde districts of Mozambique. Within each community, a random sample of 20 female farmers were surveyed along with their husbands. The survey is the baseline of an ongoing randomized controlled trial to assess the effectiveness of a human capital program targeting female farmers. The survey elicited information on both spouses' cognitive and socio-emotional skills, as well as their time and risk preferences. The spouses were asked these modules separately and privately.

Second, we use data from a survey conducted in June-July 2016 across 180 villages in the Bas-Sassandra, Comoé, Lacs and Lagunes districts of Côte d'Ivoire. The survey is the baseline of an ongoing randomized controlled trial to assess the impact of improving rubber farmers' access to technologies and markets. The survey elicited information on the socio-emotional skills, and time and risk preferences of the farmers that applied to the program, as well as of their spouses. The spouses were asked these modules separately and privately.

Third, we use data from the second wave of the Malawi Third Integrated Household Panel Survey (IHPS), conducted in 2013. This is a publicly available longitudinal survey that is representative of the Malawian population. For the rural sub-sample, the survey elicited information on the cognitive and socio-emotional skills of up to two plot managers. These are typically the husband and the wife, which are the focus of our analysis.

In each country, we restrict the sample to couples for whom we observe the corresponding skills and preferences of both spouses, as well as the other covariates used in the analysis. This results in working samples of 2,280 couples in Mozambique, 1,407 couples in Côte d'Ivoire, and 531 couples in Malawi.

2.2. Measuring Skills and Preferences

Socio-emotional skills were measured in the three countries by asking respondents to rate their level of agreement with different attitudinal statements (see Appendix A1). In Mozambique and Malawi, these items elicit abilities commonly associated with an entrepreneurial mindset, such as perseverance, locus of control, and optimism: some of the items are identical or similar between the two countries, but not all of them. In Côte d'Ivoire, these items focus on self-esteem

and agricultural self-efficacy. For each country, we construct a composite socio-emotional ability index that is the normalized z-score of the first principal component of the different items (correcting for acquiescence-bias and reversing negatively-coded items).¹

Cognitive skills were measured in Mozambique and Malawi using Digit Span Tasks (see Appendix A2). Respondents were asked to repeat in the same order as many digits as they could from a list of digits read by the enumerator. This task captures short-term memory and is commonly thought to be an important dimension of IQ. The final cognitive ability measure equals the number of correct digits that the respondent is able to repeat.

Time preferences were measured in Mozambique and Côte d'Ivoire using different versions of an intertemporal multiple price list (see Appendix A3). Respondents were asked to make sequential choices between payment tomorrow and in a month's time, with increasing relative rates of return for waiting. We use these choices to construct a time preference score, where higher values correspond to more patience. In Mozambique, this measure equals the point where the respondent switches to choosing the later payment. In Côte d'Ivoire, this measure equals the number of instances where the respondent allocates strictly more value to the later payment than the sooner payment.

Risk preferences were measured in Mozambique and Côte d'Ivoire by asking respondents to choose from a menu of crop choices under varying returns and risk scenarios (see Appendix A4). In Mozambique, respondents chose among eight crops, each with distinct returns under a "good" and a "bad" farming season occurring with probability 50%. In Côte d'Ivoire, respondents were presented five different rainfall scenarios with probability of adequate rainfall increasing from 10 to 100%. For each scenario, the respondent chose among two crops with differing drought-susceptibility. For both countries, a higher score means higher risk aversion.

Appendix Table A1 presents summary statistics for all the variables used in the analysis.

¹ We compute the acquiescence score of each respondent by averaging across the mean of positively-coded items and the mean of negatively-coded items (before reversing them), then subtract each respondent's acquiescence score from each of their individual item responses.

3. Analysis

3.1. Empirical Method

The unit of observation is couple i in community j . Let the female and male spouses each be defined by a vector of K (country specific) human capital characteristics $\mathbf{Y}_{ij} = (Y_{ij}^1, \dots, Y_{ij}^K)$ and $\mathbf{X}_{ij} = (X_{ij}^1, \dots, X_{ij}^K)$, respectively. These include: (i) cognitive and socio-emotional abilities, time and risk preferences, and years of education in Mozambique; (ii) socio-emotional ability, risk preferences, and years of education in Côte d'Ivoire; and (iii) cognitive and socio-emotional abilities, and years of education in Malawi. To ease interpretation and comparability across traits and countries, the measures for each human capital characteristic are converted into normalized z-scores.

We estimate the following system of K equations using seemingly unrelated regressions (SUR), separately for each country:

$$Y_{ij}^k = \beta^k X_{ij}^k + \sum_{l \neq k} \alpha_l^k Y_{ij}^l + \sum_{l \neq k} \gamma_l^k X_{ij}^l + \boldsymbol{\delta}^k \mathbf{Z}_{ij}^k + \lambda_j^k + \varepsilon_{ij}^k. \quad (1)$$

$\boldsymbol{\beta} = (\beta^1, \dots, \beta^K)$ is the vector of parameters of interest, where β^k measures the standard deviation (sd) change in the k th characteristic of the female spouse (Y_{ij}^k) induced by a 1sd increase in the k th characteristic of the male spouse (X_{ij}^k), keeping constant the remaining human capital characteristics of both spouses (Y_{ij}^l and X_{ij}^l , for all $l \neq k$). \mathbf{Z}_{ij}^k is a vector of additional controls including spouses' ages and the following household level characteristics: household size, household asset ownership, and farm size. λ_j^k are community fixed effects. Throughout, standard errors are clustered by community.

3.2. Results

Table 1 presents the results for Mozambique in Panel A, Côte d'Ivoire in Panel B, and Malawi in Panel C. Each Column reports the coefficients of interest $\hat{\boldsymbol{\beta}} = (\hat{\beta}^1, \dots, \hat{\beta}^K)$. In Column 1, each equation k only controls for the corresponding k th trait of the male spouse. It shows large and

positive unconditional within-couple correlations for each human capital characteristic in each country. Columns 2 to 4 show this finding is robust to sequentially conditioning on the remaining human capital characteristics and ages of both spouses, household characteristics, and community fixed effects.

Our preferred specification is in Column 4 with the full set of controls. This shows that a 1sd increase in the male spouse's socio-emotional ability is associated with a .44-.60sd increase in the female spouse's socio-emotional ability. The within-couple correlations for the other traits are somewhat smaller, but still highly statistically significant: .23-.41sd for cognitive ability, .28-.29sd for patience, .21-.36sd for risk aversion, and .36-.39sd for years of education.

As another robustness check, Column 5 restricts the sample to couples where the wife is under 30 years old, proxying for more recently formed couples. If the observed sorting patterns are primarily explained by spousal socialization, say through imitation and learning, these patterns should be attenuated among younger couples. The results show no significant evidence of such heterogeneity: the within-couple correlations for these sub-samples are still large (and quite similar in terms of magnitudes).²

4. Discussion

Human capital shapes one's economic life. We present novel, robust and systematic evidence that men and women in rural Africa are positively assortatively matched on education, cognitive and socio-emotional skills, and time and risk preferences. While more work is needed to identify the precise causal mechanisms and marriage market dynamics shaping this pattern, future research should also examine its implications for households' welfare distribution and inequality, as well as the resulting inter-generational transmission of welfare and inequality (as parents may pass some of these traits to their children). Our results provide new input for the design and targeting of human capital policy interventions.

² This finding is robust to alternative female spouse's age cutoff points to define the younger couples' sub-samples.

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Table 1. Assortative Matching in Mozambique, Côte d'Ivoire, and Malawi

Dependent Variable: System of Equations in Female Spouse's Skills, Preferences, and Education

SUR Model Estimated by Maximum Likelihood

Standard Errors: Clustered by Community

	All Couples				Younger Couples
	Unconditional (1)	Individual Controls (2)	Household Controls (3)	Community Fixed Effects (4)	Community Fixed Effects (5)
Panel A. Mozambique					
Socio-Emotional Ability	.657 (.024)	.605 (.024)	.603 (.024)	.600 (.026)	.607 (.036)
Cognitive Ability	.502 (.025)	.465 (.026)	.457 (.027)	.410 (.031)	.426 (.033)
Patience	.320 (.027)	.311 (.028)	.311 (.027)	.290 (.031)	.260 (.041)
Risk Aversion	.255 (.027)	.240 (.026)	.238 (.027)	.211 (.029)	.245 (.040)
Years of Education	.494 (.033)	.442 (.036)	.414 (.033)	.385 (.029)	.403 (.030)
Observations	2,280	2,280	2,280	2,280	1,103
Panel B. Côte d'Ivoire					
Socio-Emotional Ability	.516 (.029)	.515 (.030)	.511 (.030)	.443 (.035)	.528 (.069)
Patience	.321 (.026)	.322 (.026)	.322 (.027)	.275 (.032)	.334 (.084)
Risk Aversion	.413 (.029)	.406 (.030)	.404 (.030)	.364 (.033)	.369 (.083)
Years of Education	.466 (.024)	.464 (.026)	.454 (.026)	.356 (.029)	.241 (.081)
Observations	1,407	1,407	1,407	1,407	287
Panel C. Malawi					
Socio-Emotional Ability	.569 (.036)	.570 (.035)	.570 (.035)	.481 (.049)	.517 (.083)
Cognitive Ability	.476 (.054)	.420 (.054)	.405 (.052)	.231 (.059)	.202 (.076)
Years of Education	.624 (.034)	.530 (.036)	.462 (.040)	.388 (.045)	.406 (.089)
Observations	531	531	531	531	190

Notes: Panel A uses data from Mozambique, Panel B from Côte d'Ivoire, and Panel C from Malawi. Columns 1 to 4 use the full samples of couples for whom we observe the corresponding skills and preferences of both spouses, and the other covariates used in the analysis. Column 5 limits the samples to couples where the wife is under 30 years old. Each Column reports maximum likelihood estimates to fit a SUR model for the K matching trait dimensions in each country. Column 1 only controls for the k th trait of the male spouse in each corresponding equation (row) of the system. Column 2 additionally controls for all other individual traits of both spouses simultaneously (including their ages). Column 3 additionally controls for the following household characteristics: household size, household asset ownership, and farm size. Columns 4 and 5 additionally control for community fixed effects. Standard errors clustered by community are reported in parentheses.

Online Appendix: Tables

Table A1. Summary Statistics
Means, standard deviations in parentheses

	Female Spouse		Male Spouse	
	Mean	(SD)	Mean	(SD)
Panel A. Mozambique				
Age	33.0	(12.8)	38.9	(14.4)
Socio-emotional Ability [z-score]	0.00	(1.00)	0.00	(1.00)
Cognitive Ability [Digit Span Task]	2.79	(2.41)	4.38	(2.21)
Patience [1-7 score]	2.23	(2.47)	2.18	(2.34)
Risk Aversion [1-8 score]	5.38	(1.94)	5.44	(1.89)
Years of education	2.01	(2.66)	3.56	(3.00)
Household Size		5.01	(1.89)	
Household Assets [0-100 score]		44.5	(21.8)	
Farm size [in hectares]		4.10	(2.93)	
Panel B. Côte d'Ivoire				
Age	37.8	(9.82)	45.8	(10.5)
Socio-Emotional Ability [z-score]	0.00	(1.00)	0.00	(1.00)
Patience [1-6 score]	3.95	(2.38)	4.14	(2.31)
Risk Aversion [1-6 score]	4.65	(1.50)	4.53	(1.45)
Years of Education	3.23	(3.64)	6.58	(4.85)
Household Size		6.99	(3.57)	
Household Assets [0-100 score]		64.0	(12.6)	
Farm size [in hectares]		7.57	(6.44)	
Panel C. Malawi				
Age	36.4	(13.1)	42.4	(14.7)
Socio-emotional Ability [z-score]	0.00	(1.00)	0.00	(1.00)
Cognitive Ability [Digit Span Task]	4.13	(1.41)	4.59	(1.23)
Years of education	5.11	(3.69)	6.61	(3.97)
Household Size		5.78	(2.21)	
Household Assets [0-100 score]		21.7	(17.1)	
Farm size [in hectares]		0.83	(0.70)	

Notes: For each country, the household asset ownership index consists of a cumulative score of dummy variables indicating ownership of: (i) latrine, radio, TV, furniture, mobile phone, bicycle, motorbike, oil lamp, flashlight and solar panel in Mozambique; (ii) radio, TV, chair, table, mattress, bed, mobile phone, bicycle, motorbike, jewelry/watch, mill, mosquito net, grater, cassava presser, mortar, chipper and nut husker for Côte d'Ivoire; and radio, TV, bed, table, chair, upholstered chair/sofa set, coffee table, cupboard /drawers, desk, clock, iron, fan, air conditioner, tape or CD/player, VCR, sewing machine, paraffin stove, electric or gas stove, refrigerator, washing machine, mobile phone, bicycle, motorbike, car, minibus, lorry, beer-brewing drum, computer equipment, dish, solar panel, lantern and generator for Malawi. We then re-scale this score to run from 0 to 100.

Online Appendix: Measurement

In all survey questions below, enumerator preamble and practice questions have been edited for conciseness.

A1 Socio-Emotional Ability Questions

A1.1 Mozambique

Please indicate to what extent the sentences below describe you by telling me if you: 1=Strongly disagree; 2=Disagree; 3=Partly disagree; 4=Partly agree; 5=Agree; 6=Strongly agree.

1. I am a hard worker.
2. I am strong enough to overcome the difficulties of life.
3. Entrepreneurship is an important part of who I am.
4. When I have the opportunity to be actively implicated in something, I take it.
5. I borrow ideas from other people for my economic activities.
6. I often look for opportunities to develop new knowledge and skills.
7. I avoid rules and regulations that limit my personal freedom.
8. Many times I see myself as a failure.
9. New ideas and projects sometimes distract me from the previous ones.
10. I believe that my success depends more on ability than luck.
11. I quickly seize the opportunities to achieve my goals.
12. Deep down, I am a weak person.
13. I like hard and demanding tasks in which I may learn new skills.
14. I discuss with other people the way of solving problems in my economic activities.
15. Our intelligence is a characteristic that we cannot change much.
16. I have new ideas or solutions for my economic activities.
17. I believe in the power of fate.
18. I can handle the situations that life brings.
19. I am willing to choose a challenging working project in which I may learn a lot.
20. I combine and integrate different ideas for my economic activities.
21. We are intelligent up to a certain point and we cannot do much to change that.
22. I consider that I have a team spirit in work environments.
23. Usually, I am an unsuccessful person.
24. I usually feel I can handle the typical problems of life.
25. I review old ideas and change them.
26. I usually do more than what is expected of me.
27. I believe that unfortunate events occur due to lack of luck.
28. I believe some people are born lucky.
29. We may learn new things, but we cannot change our basic intelligence.
30. I consider myself as someone who usually thinks about entrepreneurship.
31. I often set a goal, but then I choose to pursue another one.
32. I am gifted to realize ideas.
33. Setbacks do not discourage me.
34. I tackle problems actively.
35. For me, the development of my skills is sufficiently important to take risks.
36. I find it hard to keep focused in projects that take more than a few months to complete.
37. I take the initiative immediately, even when others do not.
38. In the tasks that are assigned to me, I try to be my own boss.
39. I finish everything I start.
40. I am diligent.
41. I often feel that there is nothing that I can do right.
42. I believe the world is controlled by a few powerful people.
43. In a job, I always try to do my work alone.
44. When a problem comes up, I try to find a solution immediately.

45. I feel competent to deal efficiently with the real world.
46. I follow my own path at work, regardless of the opinion of others.
47. I have been obsessed with a particular idea or project, but then I lost my interest.

A1.2 Côte d'Ivoire

In the following series of statements, please tell me if you: 1=Strongly disagree; 2=Disagree; 3=Agree; 4=Strongly agree.

Self-Esteem

1. I feel that I am a person of worth, at least on an equal plane with others.
2. I feel that I have a number of good qualities.
3. All in all, I am inclined to feel that I am a failure.
4. I am able to do things as well as most other people.
5. I feel that I do not have much to be proud of.
6. I take a positive attitude toward myself.
7. On the whole, I am satisfied with myself.
8. I wish I could have more respect for myself.
9. I certainly feel useless at times.
10. At times I think I am no good at all.

Self-Efficacy

1. I cannot at all use my abilities to be a successful farmer.
2. I am successful in dealing with my agricultural problems.
3. I am proud of being a farmer.
4. When I obtain a good harvest, I try to understand why.
5. I have no difficulty in using new agricultural techniques.

A1.3 Malawi

In the following series of statements, please tell me if you: 1=Strongly disagree; 2=Disagree; 3=Neither agree nor disagree; 4=Agree; 5=Strongly agree.

1. I plan tasks carefully.
2. I make up my mind quickly.
3. I save regularly.
4. I look forward to returning to my work when I am away from work.
5. I can think of many times when I persisted with work when others quit.
6. I continue to work on hard projects even when others oppose me.
7. I like to juggle several activities at the same time.
8. I would rather complete an entire project every day than complete parts of several projects.
9. I believe it is best to complete one task before beginning another.
10. It is difficult to know who my real friends are.
11. I never try anything that I am not sure of.
12. A person can get rich by taking risks.
13. It is important for me to do whatever I'm doing as well as I can even if it isn't popular with people around me.
14. Part of my enjoyment in doing things is improving my past performance.
15. When a group I belong to plans an activity, I would rather direct it myself than just help out and have someone else organize it.
16. I try harder when I'm in competition with other people.
17. It is important to me to perform better than others on a task.
18. I enjoy planning things and deciding what other people should do.

19. I find satisfaction in having influence over others.
20. I like to have a lot of control over the events around me.
21. The most important thing that happens in life involves work.
22. My family and friends would say I am a very organized person.
23. In uncertain times I usually expect the best.
24. If something can go wrong for me, it will.
25. I'm always optimistic about my future.
26. I hardly ever expect things to go my way.
27. I rarely count on good things happening to me.
28. Overall, I expect more good things to happen to me than bad.

A2 Cognitive Skills

A2.1 Mozambique

Enumerator: Please show the card with the 3-digit number. That card should be withdrawn and, ten seconds later, you should ask the respondent to repeat the number as written in the card. If the respondent answers correctly, go to the next card with 4 digits. When the respondent makes a mistake in a number, write down the total of numbers that he answered correctly in the brackets [] and go to the next question.

1. 3 digits (732): Right [] Wrong [] -> next question
2. 4 digits (4538): Right [] Wrong [] -> next question
3. 5 digits (18804): Right [] Wrong [] -> next question
4. 6 digits (053776): Right [] Wrong [] -> next question
5. 7 digits (4672390): Right [] Wrong [] -> next question
6. 8 digits (58321740): Right [] Wrong [] -> next question
7. 9 digits (620873617): Right [] Wrong [] -> next question
8. 10 digits (9927465932): Right [] Wrong [] -> next question
9. 11 digits (36684021048): Right [] Wrong [] -> next question
10. 12 digits (567310217082): Right [] Wrong [] -> next question

A2.2 Malawi

Listen carefully as I say some numbers. When I finish, you should repeat them back to me in the same order I said them to you. I will read each set of numbers only once, so be careful to pay attention the first time. If you miss what I've said, just try your best to repeat whatever you heard.

1. Read: 3-8-6. Did the respondent answer correctly?
2. Read: 6-1-2. Did the respondent answer correctly?
3. Is the answer to (1) and (2) both no? -> skip section
4. Read 3-4-1-7. Did the respondent answer correctly?
5. Read 6-1-5-8. Did the respondent answer correctly?
6. Is the answer to (4) and (5) both no? -> skip section
7. Read 8-4-2-3-9. Did the respondent answer correctly?
8. Read 5-2-1-8-6. Did the respondent answer correctly?
9. Is the answer to (7) and (8) both no? -> skip section
10. Read 3-8-9-1-7-4. Did the respondent answer correctly?
11. Read 7-9-6-4-8-3. Did the respondent answer correctly?
12. Is the answer to (10) and (11) both no? -> skip section
13. Read 5-1-7-4-2-3-8. Did the respondent answer correctly?
14. Read 9-8-5-2-1-6-3. Did the respondent answer correctly?

A3 Time Preferences

A3.1 Mozambique

Imagine that you have won a prize and that you may choose when you are going to receive the money: tomorrow or in a month's time. In any case, you will always receive your money. And you are entitled to receive MT 10.000 MT in a month's time. *Enumerator: whenever they select option MT 10.000 in a month's time or have no preference, end this module and move to the next one.*

1. Do you prefer to receive MT 9.900 tomorrow instead of MT 10.000 in a month's time?
2. And if you are offered MT 9.500 tomorrow: Do you prefer to receive MT 9.500 tomorrow instead of MT 10.000 in a month's time?
3. And if you are offered MT 9.000 tomorrow: Do you prefer to receive MT 9.000 tomorrow instead of MT 10.000 in a month's time?
4. And if you are offered MT 8.500 tomorrow: Do you prefer to receive MT 8.500 tomorrow instead of MT 10.000 in a month's time?
5. And if you are offered MT 8.000 tomorrow: Do you prefer to receive MT 8.000 tomorrow instead of MT 10.000 in a month's time?
6. And if you are offered MT 7.000 tomorrow: Do you prefer to receive MT 7.000 tomorrow instead of MT 10.000 in a month's time?
7. And if you are offered MT 5.000 tomorrow: Do you prefer to receive MT 5.000 tomorrow instead of MT 10.000 in a month's time?

A3.2 Côte d'Ivoire

Here are 20 tokens, representing 2,000 FCFA. You will now allocate 2,000 FCFA represented by these 20 tokens between tomorrow (earlier) represented by dish A and 30 days from tomorrow (later) represented by dish B. A token allocated to dish A corresponds to 100 FCFA tomorrow. A token allocated to dish B corresponds to 100 FCFA plus interest, 30 days from tomorrow. There are five different interests you get for waiting, as described in the following scenarios:

1. If a token placed in dish B gives you FCFA 110 in 30 days from tomorrow while a token placed in dish A gives you 100 FCFA tomorrow, how many tokens would you put in dish A and how many tokens in dish B?
2. If a token placed in dish B gives you 125 FCFA in 30 days from tomorrow while a token placed in dish A gives you 100 FCFA tomorrow, how many tokens would you put in dish A and how many tokens in dish B?
3. If a token placed in Plate B gives you 150 FCFA in 30 days from tomorrow while a token in Plate A gives you 100 FCFA tomorrow, how many tokens would you put in Plate A and how many tokens in dish B?
4. If a token placed in dish B gives you 175 FCFA in 30 days from tomorrow while a token in dish A gives you 100 FCFA tomorrow, how many tokens would you put in dish A and how many tokens in dish B?
5. If a token placed in dish B gives you 200 FCFA in 30 days from tomorrow while a token in dish A gives you 100 FCFA tomorrow, how many tokens would you put in dish A and how many tokens in dish B?

A4 Risk Preferences

A4.1 Mozambique

Suppose that you are going to cultivate a new crop to sell in the market and that you may choose among eight different cultures. For each crop, the income varies according to having a good or bad agricultural season. The probability of each season is 50%. The income of each crop in the good and bad seasons is in the table on this card. The income is the money left from the sale of the crop after having been paid all the expenses associated with the production of that crop (inputs, workers' wages, transport of crops to the market, etc.). *Enumerator: Show the card with the table to the respondent.*

If you were to invest in one of these crops, which crop would you choose out of options 1-8?

1. Crop 1: Income in a bad season = MT 1,500; Income in a good season = MT 1,500
2. Crop 2: Income in a bad season = MT 1,350; Income in a good season = MT 2,050
3. Crop 3: Income in a bad season = MT 1,200; Income in a good season = MT 3,000
4. Crop 4: Income in a bad season = MT 1,050; Income in a good season = MT 3,750
5. Crop 5: Income in a bad season = MT 900; Income in a good season = MT 4,500
6. Crop 6: Income in a bad season = MT 600; Income in a good season = MT 4,800
7. Crop 7: Income in a bad season = MT 300; Income in a good season = MT 5,700
8. Crop 8: Income in a bad season = MT 0; Income in a good season = MT 6,000

A4.2 Côte d'Ivoire

Scientists are developing two varieties of corn whose yields depend on the amount of rainfall: variety A and variety B. Variety B has very good yields in good rainfall, with yields of 10 t. But yields are much more limited if it rains moderately: in case of moderate rains, yields are only 1 t. On the other hand, the yields obtained with the variety A are much more constant, because it is resistant to drought: in case of good rains, the yields are 4 t; in the case of moderate rain they are 5 t. We will now ask you to tell us which variety of corn you would prefer, in situations with different chances of heavy rainfall.

1. If there is 1 chance out of 10 of good rainfall, would you choose Variety A or Variety B?
2. If there is a 2.5 chance out of 10 of good rainfall, would you choose Variety A or Variety B?
3. If there is chance of 5 out of 10 of good rainfall, would you choose Variety A or Variety B?
4. If there is chance of 7.5 out of 10 of good rainfall, would you choose Variety A or Variety B?
5. If there is 10 out of 10 chance of good rainfall, would you choose Variety A or Variety B?