Stronger together: Female Export Consortia
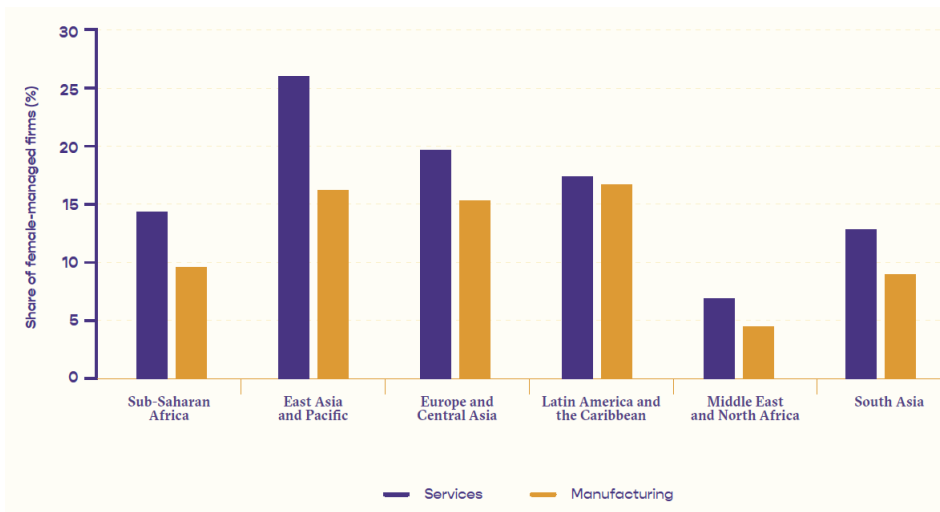## Experimental Evidence from Tunisia

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Introduction

Motivation: Very few firms worldwide are female-managed

World Bank, 2019, p.123

Motivation: Very few firms in Tunisia are female-managed

- Less than 10% of all firms in MENA & less than 5% of exporters in Tunisia are female-managed (ITC, 2021).

- 19% of formal businesses are headed by women & female presence in corporate boards does not exceed 5.3% in Tunisia. (Ben Mohamed et. al, 2022)

- Little or no support for female entrepreneurship in Tunisia (Drine & Grach; 2012)

Motivation: Female-led firms face several barriers to export

We identified four main barriers based on the literature and focus group interviews:

- **Small networks**: Social norms constrain female entrepreneurs' networks, while trade operates through international networks (Chaney, 2014; World Bank, 2020)

- **High fixed costs of exports**: Women-led firms tend to be smaller & less productive, making it harder for to overcome the fixed costs of export (Melitz 2003)

- **Lower management practices**: Female entrepreneurs tend to have fewer management skills required in global trade (Heilbrunn 2004; Bruhn et al. 2018)

- **Self-confidence**: Female entrepreneurs tend to have lower self-confidence, while export requires resilience to uncertainty & growth aspirations (Kirkwood 2009; Alibhai et al. 2019)

Results of the focus group

Table: Focus groups: Relative importance of barriers to entrepreneurship

Company	Social norms and family commitments	Lack of funds and resources	Lack of business and export knowledge	Regulatory and administrative barriers	International barriers: travel, language, culture	Important Risks: high costs, uncertainty, competition
Company 1	4	6	3	3	4	6
Company 2	6	4	4	3	5	3
Company 3	3	5	5	5	1	3
Company 4	2	4	2	5	1	1
Company 5	3	7	2	2	2	5
Company 6	7	7	7	7	6	7
Company 7	3	1	1	1	2	1
Company 8	7	7	7	7	7	7
Company 9	4	7	7	5	4	7
Company 10	7	7	7	6	7	7
Company 11	1	7	5	7	5	7
Mean:	**4,27**	**5,64**	**4,55**	**4,64**	**4,00**	**4,91**

Puzzle, Research Question, Hypotheses

Puzzle

Exporting requires on several factors listed before, but most female-owned businesses tend to lack these factors.

Research Question

Can export consortia provide female-led firms with these ingredients necessary for export?

Hypotheses

Consortia enable female-led firms to...

1. expand their **business networks**.
2. increase their **(entrepreneurial) self-confidence**.
3. gain knowledge about better **management** & **export practices** & new **business ideas**.
4. share the costs of & develop their **export performance**.

What is a consortium ?

Definition

Export consortia are voluntary legal agreements between companies to set-up a joint legal organization to cooperate & share the fixed costs of exporting (promotional activity, sales structure abroad etc.)

GIE:Groupement d'intérêt économique

Formed by multiple entities to collaborate on specific economic activities while maintaining their separate legal identities
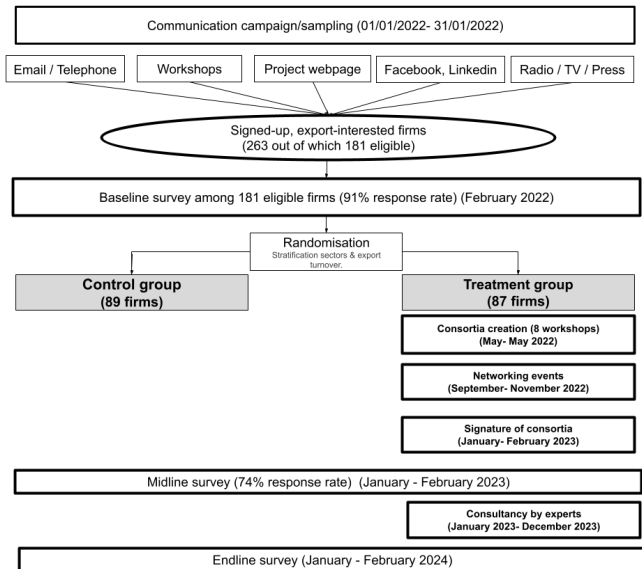
Experimental strategy in a nutshell

- Randomized controlled trial in cooperation with the Tunisian export promotion agency and the German Development Cooperation

- Sampling thanks to national communication campaign (263 female firms enrolled, randomization among the 181 eligible companies)

- Data collection in combined online-and telephone surveys and through customs export transaction data

- Status-quo: consortia creation completed, presentation of midline results, next phase: consortia export promotion on-going
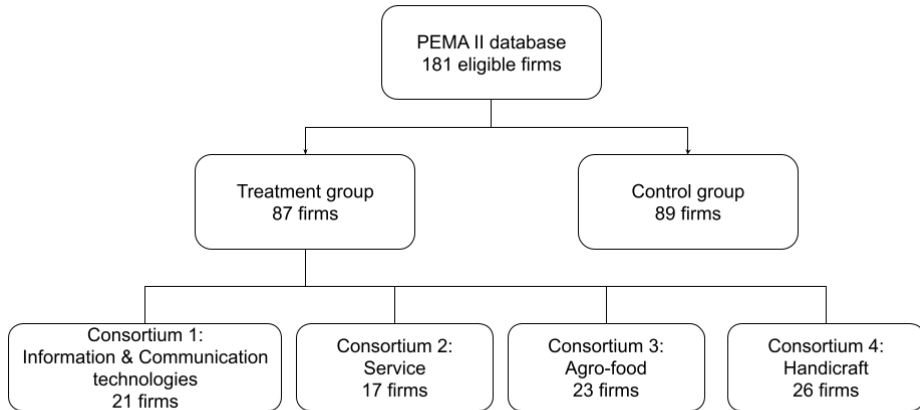
Contribution

- Among the first RCTs targeted at female-owned firms, providing evidence for entrepreneurial empowerment
  - Very little evidence on what measures work to promote female entrepreneurs
    (Asiedu et al. 2023, Jayachandran, 2020; Woodruff et al. 2022)

- Among the first RCTs to attempt creating new networks and permanent cooperation between firms
  - Networking/group interventions show promising, cost-effective results
    (Cai & Szeidl 2018, Quinn & Fafchamps 2018, Asiedu et al. 2023)
  - 2 Quasi-experimental studies found positive effects on firms probability of exporting in Chile (Alvarez, 2004; Crespi & Alvarez, 2000)

- Among the first RCTs to test export promotion policies
  - Only 4 randomized experiments in the area of export promotion for SMEs, 3 null-results (Atkin et al., 2017; Breinlich et al., 2017; Kim et al., 2018, Mckenzie et al.)

Experimental Set-up

Research design

Communication campaign/sampling (01/01/2022- 31/01/2022)

Email / Telephone — Workshops — Project webpage — Facebook, Linkedin — Radio / TV / Press

Signed-up, export-interested firms
(263 out of which 181 eligible)

Baseline survey among 181 eligible firms (91% response rate) (February 2022)

Randomisation
Stratification sectors & export turnover.

**Control group
(89 firms)**

**Treatment group
(87 firms)**

Consortia creation (8 workshops)
(May- May 2022)

Networking events
(September- November 2022)

Signature of consortia
(January- February 2023)

Midline survey (74% response rate) (January - February 2023)

Consultancy by experts
(January 2023- December 2023)

Endline survey (January - February 2024)

4 consortia

Treatment

- Intervention timeline: Establish four export consortia between May 2022 and May 2024.

  1. Phase I, May 2022 - May 2023: **Consortia creation**
     $\longrightarrow$ 8 workshops to develop the consortia
     $\longrightarrow$ Legal format, female entrepreneurship, networking, technicalities of exporting
     $\longrightarrow$ Individual online coaching sessions for firm-specific problems

  2. Phase II from May 2023-May 2024: **Export Promotion**
     $\longrightarrow$ Consortium-level export support
     $\longrightarrow$ Consultancy to establish an export plan
     $\longrightarrow$ Financial support for promotional activities, e.g. joint trade mission abroad (75.000 Euros/consortium)

▶ Budget ▶ Pictures ▶ Coaching topics

Data & Descriptive Statistics

Data

We use 4 data sources:

1. Survey data (baseline, midline, endline)
2. Program implementation data (e.g., meeting attendance, financial support)
3. Administrative data on the export transaction from customs
4. Information from qualitative interviews and focus groups (with female consultants and female CEOs)

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Main outcome variables

| Outcome dimension	Indicators	Source
Network	Network size Network advice quality Perception of interaction between CEOs	Firm survey
Entrepreneurial confidence	Female Empowerment Index Locus of control Efficacy Initiative List experiment	Firm survey
Knowledge transfer	Management Practices Innovation Export readiness	Firm survey
Business Performance	Sales (domestic, total) Profit Number of Employees	Firm survey
Export	Export sales Export countries Investment in export Perception of export costs	Firm survey & admin data

Balance Table

Variable	(1) Control Mean/SD	(2) Treatment Mean/SD	T-test P-value (1)-(2)
Network size	12.33 (16.02)	13.21 (17.62)	0.73
Network quality	7.11 (2.61)	7.31 (2.68)	0.62
Entrepreneurial empowerment	-0.01 (0.66)	-0.08 (0.60)	0.44
Management practices	-0.00 (0.48)	0.05 (0.51)	0.53
Age	7.13 (9.85)	6.66 (8.31)	0.73
Sales	391,879.33 (856,501.52)	624,609.70 (3,419,255.86)	0.54
Profit	29,258.93 (106,668.96)	17,594.97 (219,209.12)	0.66
Employees	7.94 (10.44)	14.68 (48.49)	0.21
Export readiness	-0.04 (0.53)	0.01 (0.52)	0.60
Export sales	96,287.29 (465,104.02)	127,063.70 (419,091.85)	0.65
Export countries, 2021	1.14 (2.12)	1.41 (2.72)	0.45
N	89	87	
F-test of joint significance (F-stat)			6.46***
F-test, number of observations			176

Notes: The value displayed for t-tests are p-values. The value displayed for F-tests are the F-statistics. Standard deviations are robust. All missing values in balance variables are treated as zero.***, **, and * indicate significance at the 1, 5, and 10 percent critical level.
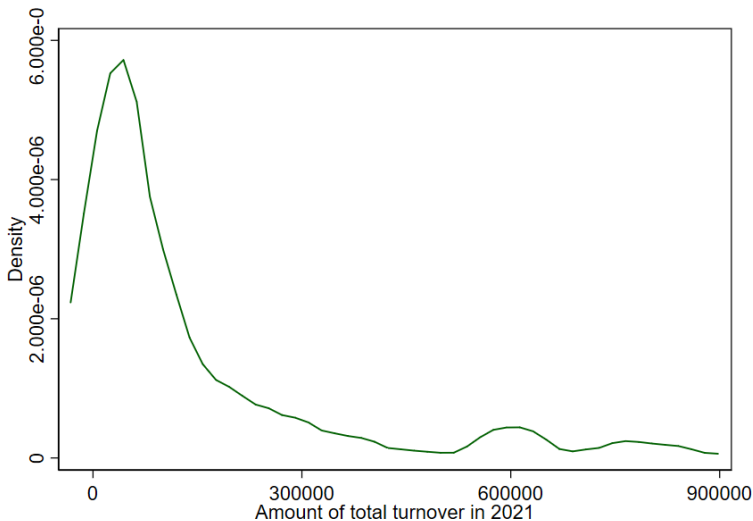
The average participating company has 11 employees, most not more than 25
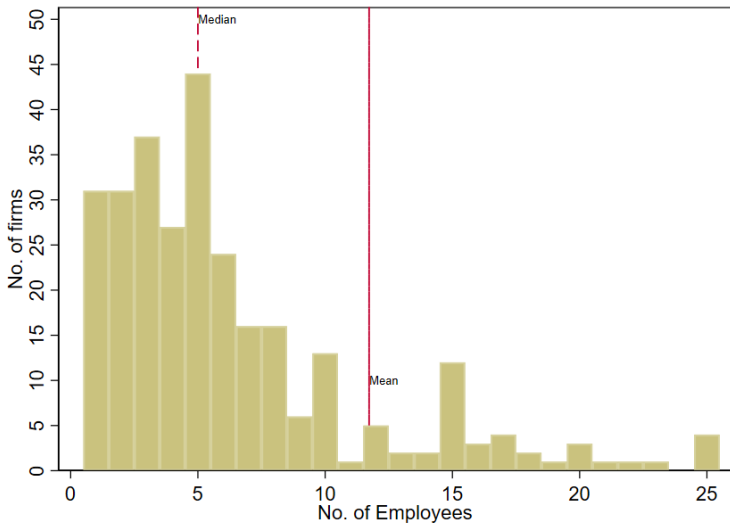
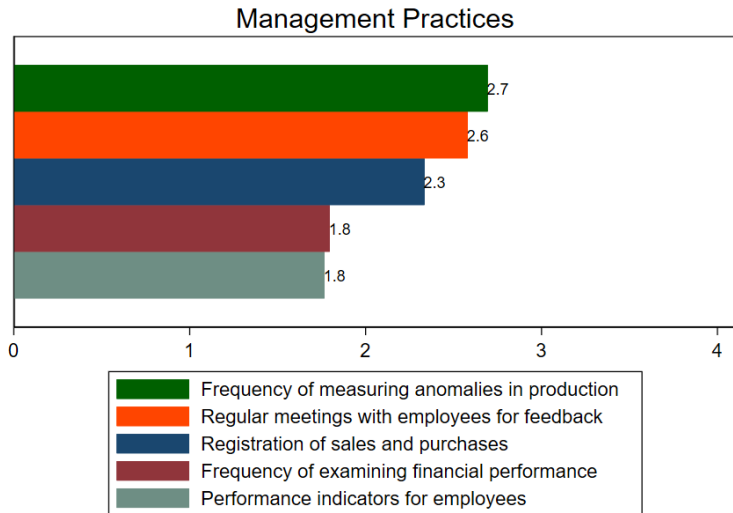# Female entrepreneurs regularly discuss new business ideas & challenges with 11 other people
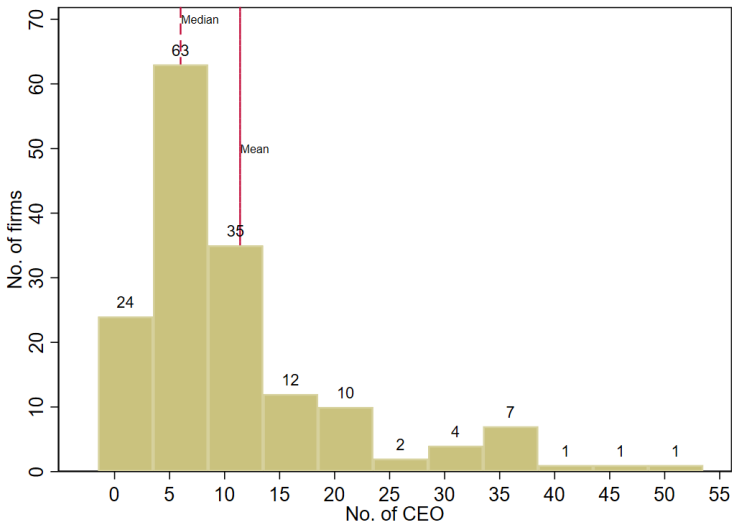
50% of the firms registered have a total turnover of $<=$ 80,000 TND

Note: Total turnover in 20221 is winsorized at 95th percentile for visualisation.

Management practices among women entrepreneurs are average to poor

Management Practices

Category	Value
Frequency of measuring anomalies in production	2.7
Regular meetings with employees for feedback	2.6
Registration of sales and purchases	2.3
Frequency of examining financial performance	1.8
Performance indicators for employees	1.8

Half of the firms do not export & most export to few countries
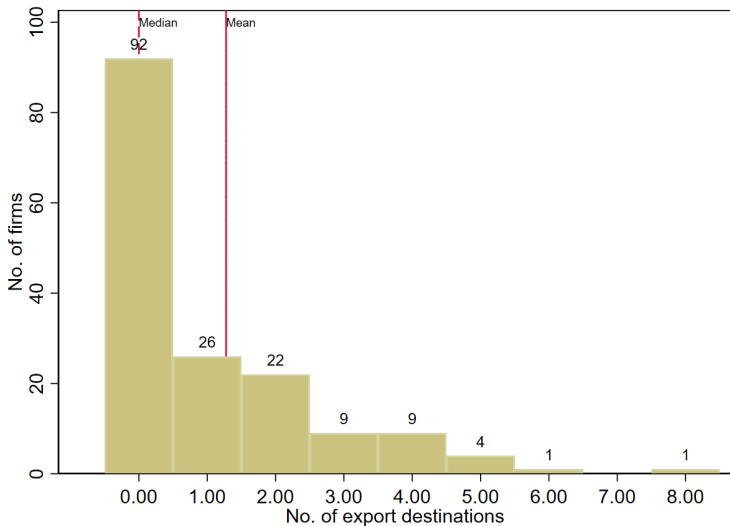
Most firms export to French-speaking or neighbouring countries

Table: Main countries of exports

Country of export	Frequency
France	25
Libya	14
Italy	7
Algéria	5
Germany	5
Côte d'Ivoire	4
Sénégal	4
Canada	3
Others	27
Do not export	73

Midline results - Female entrepreneur's business networks

Consortia enlarged members' network size

	(1)	(2)	(3)	(4)	(5)	(6)
	Network size	Female CEOs met	Male CEOs met	Network quality	+ view CEO exchange	− view CEO exchange
Panel A: Intention-to-treat (ITT)						
Treatment	2.187	2.242*	0.106	0.188	0.239*	-0.168
	(2.295)	(1.197)	(1.435)	(0.397)	(0.136)	(0.128)
	0.342	0.063	0.941	0.637	0.082	0.192
	.568	.107	.874	.568	.05	.107
Panel B: Treatment Effect on the Treated (TOT)						
Consortium participant	2.924	2.994**	0.142	0.252	0.324**	-0.229
	(2.676)	(1.382)	(1.692)	(0.454)	(0.162)	(0.153)
	0.275	0.030	0.933	0.579	0.046	0.136
	.543	.082	.874	.543	.034	.082
Control group mean	8.46	3.67	4.80	7.76	2.43	0.44
Control group SD	12.35	6.23	8.27	2.26	0.84	0.67
Observations	141	141	141	123	145	145
Strata controls	Yes	Yes	Yes	Yes	Yes	Yes
Y0 controls	Yes	Yes	Yes	Yes	Yes	Yes

Notes: Each specification includes controls for randomization strata, baseline outcome, and a missing baseline dummy. The only exception are columns 2 and 3 for which we did not collect baseline data. The number of observations for network quality is only 123 as all other 18 firms reported zero contacts with other entrepreneurs. The total of female, male and all other CEOs met are winsorized at the 99th percentile. Coefficients display absolute values of the outcomes. Panel A reports ANCOVA estimates as defined in Mckenzie and Bruhn (2011). Panel B documents IV estimates, instrumenting take-up with treatment assignment. Clustered standard errors in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$ denote the significance level. P-values and adjusted p-values for multiple hypotheses testing using the Romano-Wolf correction procedure (Clarke et al., 2020) with 999 bootstrap replications are reported below the standard errors.

Consortia members view cooperation with other CEOs more positive and as a partnership

	(1) Mean comparison	(2) Ancova	(3) Ancova	(4) DiD	(5) ATT	(6) ATT
Treatment	0.227* (0.127)	0.237* (0.129)	0.239* (0.136)	0.002 (0.114)		
L.Positive answers for the the perception of interactions between CEOs		0.099 (0.102)	0.090 (0.097)		0.095 (0.087)	0.099 (0.088)
midline				0.279** (0.121)		
Treatment × midline				0.227 (0.170)		
take_up_per					0.338** (0.168)	
company decided to participate in consortium						0.324** (0.162)
Constant	2.431*** (0.099)	2.209*** (0.284)	2.504*** (0.317)	2.386*** (0.170)	2.482*** (0.281)	2.494*** (0.269)
Observations	145	145	145	321	145	145
Strata controls	No	No	Yes	Yes	Yes	Yes
Y0 control	No	Yes	Yes	Yes	Yes	Yes

Standard errors in parentheses

Column (1) presents estimates for a simple mean comparison between treatment and control group at midline.

Column (2) presents an ANCOVA specification without strata controls.

Column (3) presents an ANCOVA specification with strata controls.

Column (4) provides estimates from a difference-in-difference specification.

Column (5) estimates are based on 2SLS instrumental variable estimation where treatment assignment is the instrument for treatment participation.

(1) uses robust standard errors. In (2)-(5) standard errors are clustered at the firm level to account for multiple observations per firm

$* \ p < 0.1, \ ** \ p < 0.05, \ *** \ p < 0.01$

Treated female entrepreneurs now value the advice of their network even more
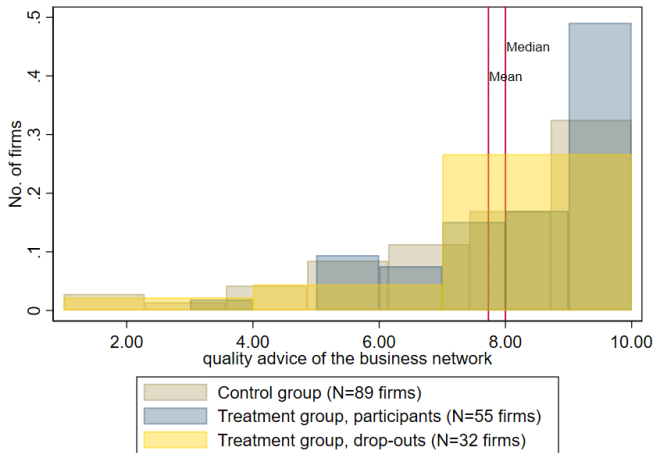
Midline results - Entrepreneurial confidence/empowerment

Consortia increased female entrepreneurs' entrepreneurial confidence

	(1) Mean comparison	(2) Ancova	(3) Ancova	(4) DiD	(5) ATT	(6) ATT
Treatment	0.157	0.225**	0.238**	-0.071		
	(0.118)	(0.107)	(0.113)	(0.097)		
L.Gender index -Z Score		0.517***	0.443***		0.438***	0.443***
		(0.109)	(0.104)		(0.091)	(0.093)
midline				0.035		
				(0.093)		
Treatment × midline				0.249**		
				(0.121)		
take_up_per					0.326**	
					(0.134)	
company decided to participate in consortium						0.311**
						(0.129)
Constant	0.048	0.021	-0.515**	-0.372	-0.521***	-0.499***
	(0.093)	(0.084)	(0.215)	(0.278)	(0.185)	(0.191)
Observations	135	130	130	301	130	130
Strata controls	No	No	Yes	Yes	Yes	Yes
Y0 control	No	Yes	Yes	Yes	Yes	Yes

Standard errors in parentheses

Column (1) presents estimates for a simple mean comparison between treatment and control group at midline.

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* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

13% in control but none in treatment consult a male family member before taking strategic business decisions

List experiment (midline)
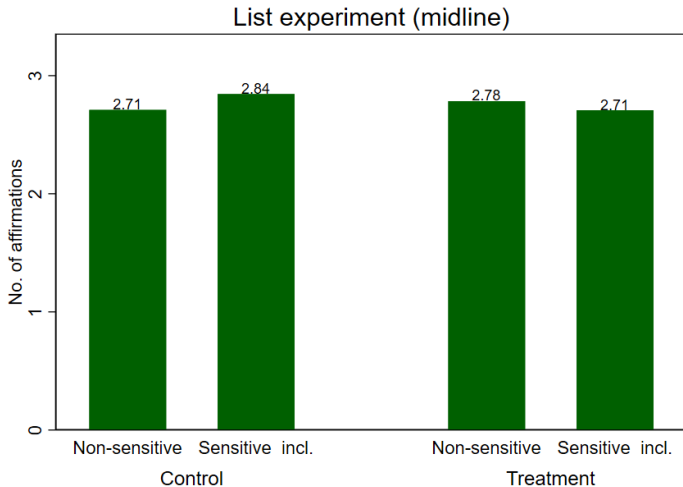
Midline Results - Knowledge transfer: management practices, innovation, and export readiness

Knowledge transfer was thus far limited to management practices

|	(1) mpi	(2) innovations	(3) innovated	(4) eri	(5) eri_ssa	(6) ssa_action1
Panel A: Intention to Treat Effect (ITT)						
Treatment	0.143	-0.109	-0.104	0.020	0.021	0.142
	(0.091)	(0.193)	(0.070)	(0.099)	(0.101)	(0.094)
Constant	-0.128	1.101**	0.596***	-0.053	-0.104	0.596***
	(0.236)	(0.539)	(0.198)	(0.127)	(0.143)	(0.228)
Observations	139	176	176	136	131	131
Strata controls	Yes	Yes	Yes	Yes	Yes	Yes
Y0 control	Yes	Yes	Yes	Yes	Yes	Yes
Panel B: Treatment Effect on the Treated (TOT)						
Consortium participant	0.190*	-0.173	-0.166	0.026	0.027	0.186*
	(0.106)	(0.277)	(0.102)	(0.113)	(0.116)	(0.108)
Constant	-0.119	1.098**	0.594***	-0.051	-0.103	0.605***
	(0.199)	(0.479)	(0.168)	(0.108)	(0.125)	(0.207)
Observations	139	176	176	136	131	131
Strata controls	Yes	Yes	Yes	Yes	Yes	Yes
Y0 control	Yes	Yes	Yes	Yes	Yes	Yes

Robust Standard errors in parentheses.

Management practices, export readiness and export readiness Sub-Sahara Africa in column (1), (4) and (5) are z-score indeces.

Innovated and having a potential client in Sub-Sahara Africa in column (3) and (6) are binary dummies.

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Knowledge transfer about management practices happened primarily via consultants

Source of New Management Strategies
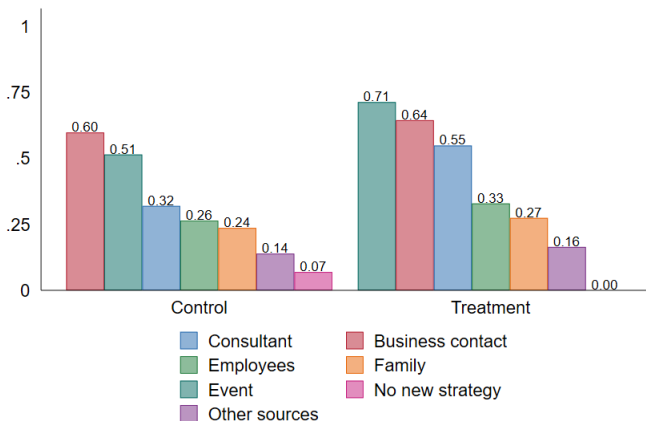
Midline Results - Business and export performance

Impact on female entrepreneurs' business performance

	(1) Domestic sales	(2) Total sales	(3) Profit	(4) Profit	(5) Employees	(6) Female employees
Panel A: Intention-to-treat (ITT)						
Treatment	0.115	0.156	2.707*	0.061	-0.005	0.041*
	(0.127)	(0.129)	(1.619)	(0.049)	(0.015)	(0.021)
	0.367	0.231	0.097	0.215	0.740	0.060
Panel B: Treatment Effect on the Treated (TOT)						
Consortium participant	0.150	0.202	3.453**	0.077	-0.006	0.053**
	(0.142)	(0.144)	(1.724)	(0.051)	(0.017)	(0.025)
	0.291	0.161	0.045	0.134	0.702	0.034
Control group mean	1.29	1.36	4.86	0.49	0.08	0.05
Control group SD	1.52	1.56	9.47	0.30	0.12	0.09
Observations	118	120	103	103	132	132
Strata controls	Yes	Yes	Yes	Yes	Yes	Yes
Y0 controls	Yes	Yes	Yes	Yes	Yes	Yes

Notes: Each specification includes controls for randomization strata, baseline outcome, and a missing baseline dummy. All variables are winsorized at the 99th percentile and ihs-transformed. The units for ihs-transformation are chosen based on the highest R-square, thousands for employee variables and ten thousands for all other variables, as described in Aihounton and Henningsen (2020). The only exception is the percentile transformed profit variable in column (4) (Delius and Sterck, 2020). Panel A reports ANCOVA estimates as defined in Mckenzie and Bruhn (2011). Panel B documents IV estimates, instrumenting take-up with treatment assignment. Clustered standard errors by firms in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$ denote the significance level. P-values and adjusted p-values for multiple hypotheses testing using the Romano-Wolf correction procedure (Clarke et al., 2020) with 999 bootstrap replications are reported below the standard errors.
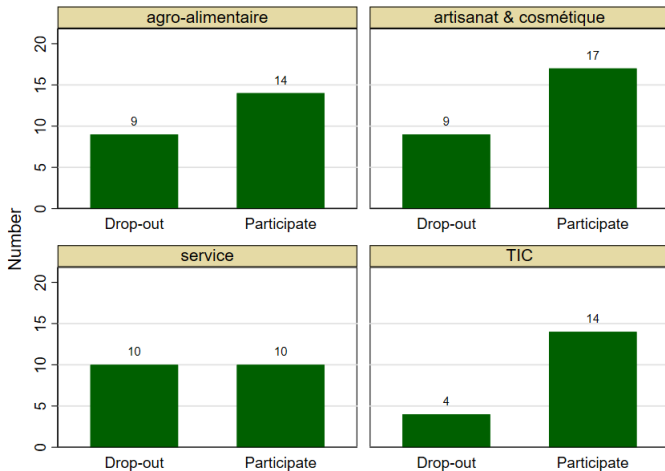
Sensitivity of profit estimates to transformation choice

	(1) Profit, k = 1	(2) Profit, k = 2	(3) Profit, k = 3	(4) Profit, k = 4	(5) Profit, pct	(6) Profit > 0
Panel A: Intention-to-treat (ITT)						
Treatment	2.719*	0.905	0.430	0.130	0.061	0.120
	(1.619)	(0.595)	(0.304)	(0.115)	(0.049)	(0.089)
	0.096	0.131	0.160	0.258	0.215	0.181
	.304	.304	.304	.304	.404	.404
	-0.49,5.93	-0.28,2.09	-0.17,1.03	-0.10,0.36	-0.04,0.16	-0.06,0.30
Panel B: Treatment Effect on the Treated (TOT)						
Consortium participant	3.467**	1.150*	0.543*	0.163	0.077	0.152
	(1.724)	(0.635)	(0.324)	(0.121)	(0.051)	(0.093)
	0.044	0.070	0.093	0.176	0.134	0.101
	.276	.304	.291	.276	.404	.382
	0.09,6.85	-0.09,2.40	-0.09,1.18	-0.07,0.40	-0.02,0.18	-0.03,0.33
Control group mean	4.86	2.07	1.14	0.36	0.49	0.66
Control group SD	9.47	3.59	1.90	0.70	0.30	0.48
Observations	103	103	103	103	103	103
Strata controls	Yes	Yes	Yes	Yes	Yes	Yes
Y0 controls	Yes	Yes	Yes	Yes	Yes	Yes

Notes: Each specification includes controls for randomization strata, baseline outcome, and a missing baseline dummy. All variables are winsorized at the 99th percentile (apart from the positive profit dummy). K refers to the units of profits. K = 4 implies profit is measured in units of ten thousand (10^4), k = 3 implies profit is measured in units of thousand (10^4), and so forth. Panel A reports ANCOVA estimates as defined in Mckenzie and Bruhn (2011). Panel B documents IV estimates, instrumenting take-up with treatment assignment. Clustered standard errors by firms in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$ denote the significance level. P-values and adjusted p-values for multiple hypotheses testing using the Romano-Wolf correction procedure (Clarke et al., 2020) with 999 bootstrap replications are reported below the standard errors. Confidence intervals are documented below the adjusted p-values.

▶ Distribution ▶ Coefficient plot

Take-up

A substantial part of the invited firms decided not to participate in the consortium

Take-up and firm characteristics across consortia

	Agro-food, Handicraft, Business Service			Digital Services		
	(1)	(2)	T-test	(1)	(2)	T-test
	Drop-out	Participate	P-value	Drop-out	Participate	P-value
Variable	Mean/SD	Mean/SD	(1)-(2) Variable	Mean/SD	Mean/SD	(1)-(2)
Export sales > 0	0.52	0.29	0.07*	0.50	0.50	1.00
	(0.51)	(0.46)		(0.58)	(0.52)	
Export investment > 0	0.70	0.34	0.00***	0.00	0.71	0.00***
	(0.47)	(0.48)		(0.00)	(0.47)	
Export readiness	0.18	-0.08	0.04**	-0.29	-0.00	0.19
	(0.52)	(0.52)		(0.35)	(0.49)	
Sales	364,790.80	113,417.88	0.05**	189,000.31	486,001.52	0.21
	(634,830.34)	(153,604.64)		(184,640.71)	(774,453.07)	
Export sales	258,004.16	12,982.20	0.04**	69,510.94	283,624.55	0.19
	(612,340.75)	(31,955.24)		(111,704.33)	(545,488.92)	
Profit	57,683.20	23,219.02	0.14	19,558.75	57,713.93	0.39
	(109,927.78)	(58,453.61)		(21,594.03)	(154,832.54)	
Employees	10.19	5.88	0.11	5.75	10.93	0.13
	(13.39)	(4.76)		(3.10)	(10.73)	
Age	8.00	4.44	0.09*	5.00	9.36	0.21
	(10.48)	(3.83)		(3.16)	(10.97)	
Meetings with other CEOs, past 3 months	6.45	9.42	0.31	10.28	9.36	0.83
	(6.67)	(16.65)		(7.40)	(9.21)	
Neg. view CEO interaction	0.56	0.88	0.03**	0.25	0.79	0.05*
	(0.58)	(0.64)		(0.50)	(0.43)	
Total innovations	1.37	1.88	0.15	0.75	2.07	0.03**
	(1.42)	(1.40)		(0.96)	(1.14)	
N	27	41		4	14	
F-test of joint significance (F-stat)			5.70***			
F-test, number of observations			68			

Notes: Sample limited to treatment group. Accounting variables are winsorized at the 99th percentile. One observation is not included given it is an extreme outlier. The values displayed for t-tests are p-values. The value displayed for F-tests are the F-statistics. Standard deviations in squared brackets are robust. All missing values in balance variables are treated as zero. * significant at the 10% level. ** significant at the 5% level. *** significant at the 1% level.

Peer-effects

Peer-effects

- Among similar firms that decided to join the consortium, firms with lower entrepreneurial confidence or management practices have experienced smaller increases in either variable at the midline.

- The positive effects of the intervention in terms of increasing entrepreneurial confidence and management practices materialize more the better a firm performed in either dimension at baseline relative to its similar peers.

- We do not find any effects of peers on the change in profit.

▶ Entrepreneurial confidence ▶ Management practices ▶ Profit ▶ Balance Table

Conclusion

Conclusion & Take-aways

1. Consortia doubled contacts with female CEOs. They now qualify cooperation with other CEOs more positively & as a partnership

2. Consortia strengthened entrepreneurial self-confidence & independent decision-making

3. Consortia improved management skills, via learning from consultants & workshops rather than other consortia participants.

4. Consortia members (may have) increased profits thanks to synergies between & across consortia (e.g., combined product offerings).

5. No significant effect (yet) on export readiness or export performance & key performance indicators, such as sales or employees.

Thank you!

There is significant survey attrition at midline, albeit similar in both groups
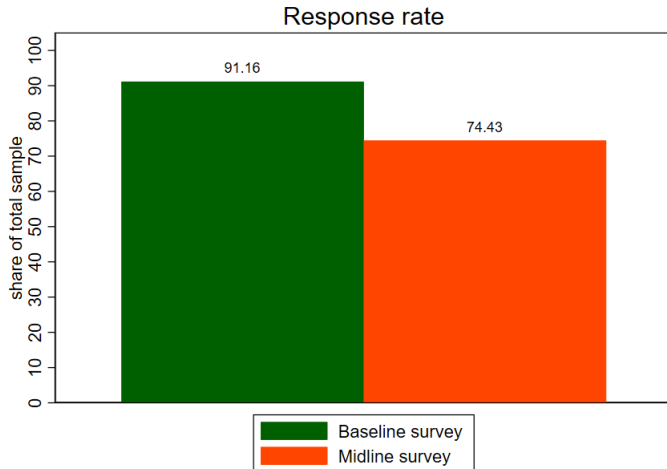
There is significant survey attrition at midline, albeit similar in both groups
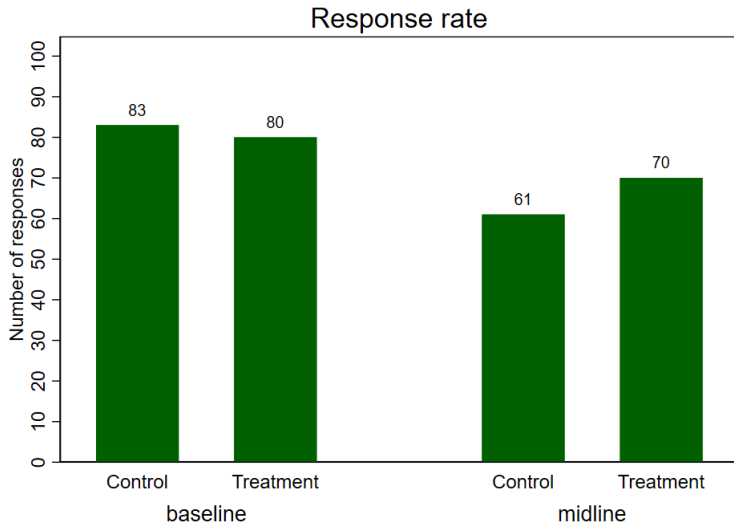
Adjusted Balance Table

Variable	(1) Control Mean/SD	(2) Treatment Mean/SD	T-test P-value (1)-(2)
Network size	12.00 (14.23)	12.76 (15.23)	0.73
Network quality	7.11 (2.61)	7.31 (2.68)	0.62
Pos. view CEO interaction	2.15 (0.78)	2.14 (0.73)	0.94
Neg. view CEO interaction	0.73 (0.64)	0.74 (0.60)	0.95
Entrepreneurial empowerment	-0.01 (0.66)	-0.08 (0.60)	0.44
Effifacy	0.00 (0.76)	-0.10 (0.72)	0.36
Locus of control	-0.05 (0.73)	-0.03 (0.72)	0.85
Management practices	-0.00 (0.48)	0.05 (0.51)	0.53
Total innovations	1.69 (1.40)	1.68 (1.38)	0.97
Innovated	0.74 (0.44)	0.72 (0.45)	0.80
R&D expenditure	21,985.02 (47,898.69)	18,087.04 (36,663.11)	0.54
Age	7.13 (9.85)	6.66 (8.31)	0.73
Domestic sales	1.02 (1.22)	1.04 (1.18)	0.92
Profit	29,258.93 (106,668.96)	17,594.97 (219,209.12)	0.66
Employees	7.94 (10.44)	14.68 (48.49)	0.21
Export readiness	-0.04 (0.53)	0.01 (0.52)	0.60
Export sales	0.27 (0.74)	0.40 (0.91)	0.29
number of countries exported to in 2021	1.14 (2.11)	1.34 (2.25)	0.53
Export investment	0.09 (0.20)	0.15 (0.38)	0.20
Export costs	5.74 (2.60)	5.54 (2.82)	0.62
Export sales > 0	0.37 (0.49)	0.40 (0.49)	0.67
N	89	87	
F-test of joint significance (F-stat)			1.25
F-test, number of observations			176

Notes: The value displayed for t-tests are p-values. The value displayed for F-tests are the F-statistics. Standard deviations are robust. All missing values in balance variables are treated as zero.***, **, and * indicate significance at the 1, 5, and 10 percent critical level.

Participation rate per workshop

Gouvernorat	Webinaire de lancement	Rencontre 1 - Atelier 1	Rencontre 1 - Atelier 2	Rencontre 2 - Atelier 1	Rencontre 2 - Atelier 2	Rencontre 3 - Atelier	Rencontre 3 - Atelier	
Tx de présence	47%	74%	69%	65%	66%	67%	65%	65%
Total	85	85	85	85	85	85	85	85
Présente	40	63	59	55	56	57	55	55
absente	45	22	26	30	29	28	30	30

In average, female led-firms have met 6/7 CEO during the last 12 months
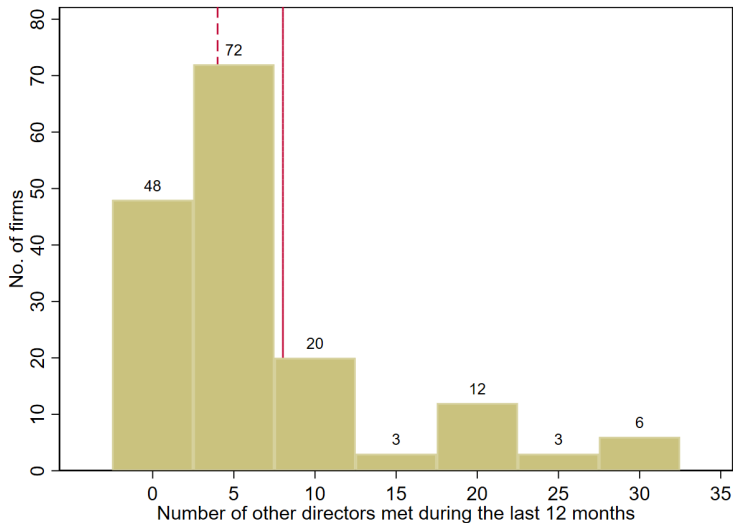
Services from the TIC pole

accès pour abonnement trimestrielle	1
application mobide realite augmente e..	1
assurance	1
atelleirs scientifiques en ligne	1
babysitting	1
bon de role	1
business process outsourcing	1
communication digital	1
communité mangement	1
conseil aux entreprises	1
conseil et formation	1
création contenus digital	1
design graphique	1
développement & intégration digital	1
développement logiciels	1
développement web	1
eclairage public intelegents	1
educanet	1
education	1
etude de conception en génie mécanique	1
impression numérique	1
intégration et développements erps	1
logiciel de gestion commerciadesktop	1
matériel didactique avec service de f..	1
phyt'eau	1
platforme pour therapeute	1
production audio visuelle	1
produit cosmétique	1
produits artisanaux 100% handmade	1
swift smart report application bancaire	1
vente de site web	1
vente de solution logiciel	1
vente produits (life style)	1

Services from the service pole

Rédaction de programmes de formation ..	1
accompagnement projets excellence opé..	1
assistance technique et audits	1
coaching talents	1
conseil	2
conseil dans gestion si	1
conseil en organisation et politiques..	1
conseil et accompagnement aux entrepr..	1
conseil, etude & accompagnement entre..	1
cours complet de formation aux médias	1
création de société	1
enseignement de base	1
etudes	2
formation	4
formation et certification	1
formation et coaching	1
formation langues	1
formation lecture de plan de soudage	1
formation à destination professionnels	1
formation à distance	1
formations profficionelles	1
l'accempagnement entreprises	1
mise a disposition clubs	1
plan technique	1
promotion moalternative réglement	1
réalisation étuenvironnementales	1
service d'aide à l'export pour produc..	1
stans dans foirs	1
tenu de comptabilite	1
tourisme de toutes sortes : affaires,..	1
training	1
Événements	1

Networking question

net_nb **With** approximately how many people do you discuss challenges or ideas related to the development of your business? Note that these are people to whom you are close enough to ask for information, a favor, a contact, etc. [positive number]. [positive number]

net_nb_fam		People within your family
net_nb_dehors		People outside your family

net_nb_qualite Do you find the advice and information from your personal network useful for the management of your business?

1 = Not useful at all	2	3	4	5	6	7	8	9	10 Very useful

net_time How often in the last 12 months do you meet with other CEOs to discuss business? Please put "0" if you do not meet with other CEOs.

Every   week

net_coop Choose the 3 words that best describe your perception of CEO interactions in business.

Win (=1)	Communicate (=2)	Trust (=3)
Eliminate/Block (=4)	Retreat/ Hold-Back (=5)	Power (=6)
Partnership (=7)	Opponent (=8)	Connect (=9)
Dominate (=10)		

Question on exports

exp_pays How many countries did your company export to in 2021? Please put "0" if your company did not export in 2021.

	pays

exp_pays_principal: What was your main export market in 2021?

Sensitive question

listexp **How many of the following statements apply to you? Please note that we don't know which statements apply to you**

...........affirmations [0-3 for group 1 and 0-4 for group 2]

**Variable list_group = 0: Group 0 (one-half of the companies):**

1. I always support and encourage my team.
2. I dreamed of being a successful woman when I was a child.
3. I try to do my best in my job.

Variable list_group = 1: Group 1 (the 2nd half of the companies):

1. I always support and encourage my team.
2. I dreamed of being a successful woman when I was a child.
3. I try to do my best in my job.
4. **I feel obligated to consult my husband (or another man in my family) before making decisions for the company.**

▶ Results

# Baseline results list experiment
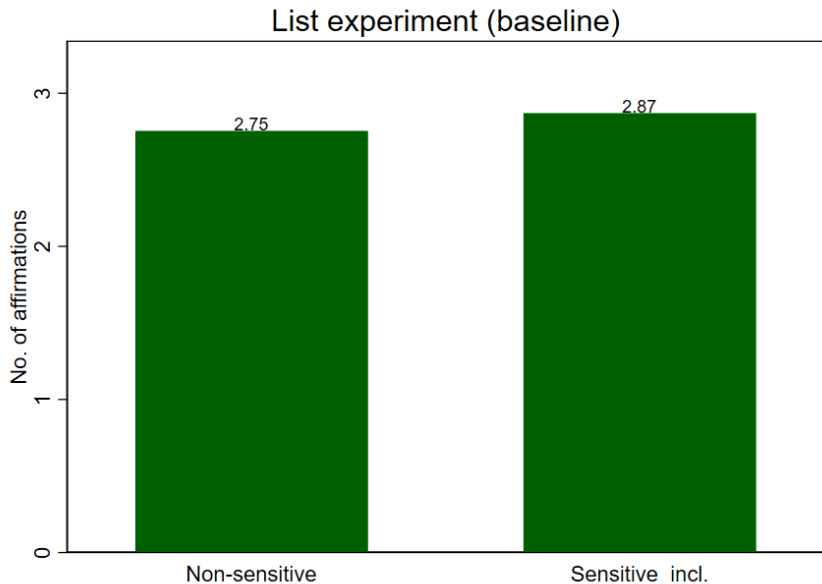
Support program question

support **How can we make it easier for you to participate in consortium meetings? Several options are possible.**

- **support1** No need for support. I can participate in the meetings by myself.
- **support2** Organize virtual meetings, for example, through a platform like Zoom or Skype.
- **support3** Change the meeting place, for example, from one city to another.
- **support4** Adopt a time slot before or after the regular workday.
- **support5** Offer free childcare during consortia meetings.
- **support6** Offer financial support for transportation and accommodation.
- **support7** Other:

Increased female entrepreneurs' self-perceived entrepreneurial control and ability, and independent decision-making

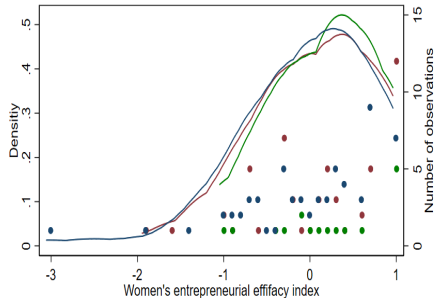**Midline Distribution of Women's locus of control index**
Index calculated based on z-score method
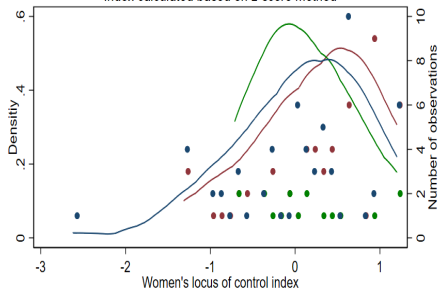
Treatment group, participated (N=55 firms)
Treatment group, absent (N=32 firms)
Control group (N= 89 firms)

Midline Distribution of Women's entrepreneurial effifacy index
Index calculated based on z-score method

Treatment group, participated (N=55 firms)
Treatment group, absent (N=32 firms)
Control group (N=89 firms)

Positive and significant female entrepreneurs' self-perceived entrepreneurial control

	(1) Mean comparison	(2) Ancova	(3) Ancova	(4) DiD	(5) ATT	(6) ATT
Treatment	0.167 (0.126)	0.158 (0.117)	0.169 (0.116)	0.034 (0.113)		
L.Women's locus of control - z score		0.408*** (0.101)	0.327*** (0.096)		0.317*** (0.084)	0.322*** (0.085)
midline				0.105 (0.109)		
Treatment × midline				0.127 (0.140)		
take_up_per					0.232* (0.139)	
company decided to participate in consortium						0.221* (0.132)
Constant	0.076 (0.097)	0.062 (0.092)	-0.327 (0.240)	-0.350 (0.314)	-0.333 (0.203)	-0.316 (0.203)
Observations	134	129	129	299	129	129
Strata controls	No	No	Yes	Yes	Yes	Yes
Y0 control	No	Yes	Yes	Yes	Yes	Yes

Standard errors in parentheses

Column (1) presents estimates for a simple mean comparison between treatment and control group at midline.

Column (2) presents an ANCOVA specification without strata controls.

Column (3) presents an ANCOVA specification with strata controls.

Column (4) provides estimates from a difference-in-difference specification.

Column (5) estimates are based on 2SLS instrumental variable estimation where treatment assignment is the instrument for treatment participation.

(1) uses robust standard errors. In (2)-(5) standard errors are clustered at the firm level to account for multiple observations per firm

$^*\ p < 0.1,\ ^{**}\ p < 0.05,\ ^{***}\ p < 0.01$

List experiment - Regression

	(1) Mean comparison	(2) Ancova	(3) Ancova	(4) DiD	(5) ATT	(6) ATT
Treatment	0.074 (0.125)	0.109 (0.124)	0.039 (0.155)	-0.149 (0.108)		
list_group=1	0.134 (0.155)	0.164 (0.155)	0.057 (0.198)			
Treatment × list_group=1	-0.212 (0.211)	-0.251 (0.210)	-0.103 (0.253)			
L.list experiment		0.169** (0.079)	0.274*** (0.097)		0.271*** (0.084)	0.271*** (0.084)
midline				-0.122 (0.103)		
Treatment × midline				0.101 (0.147)		
take_up_per					-0.019 (0.139)	
company decided to participate in consortium						-0.018 (0.132)
Constant	2.710*** (0.097)	2.196*** (0.272)	1.876*** (0.507)	2.860*** (0.216)	1.907*** (0.431)	1.906*** (0.431)
Observations	134	129	129	299	129	129
Strata controls	No	No	Yes	Yes	Yes	Yes
Y0 control	No	Yes	Yes	Yes	Yes	Yes

Standard errors in parentheses

Column (1) presents estimates for a simple mean comparison between treatment and control group at midline.

Column (2) presents an ANCOVA specification without strata controls.

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(1) uses robust standard errors. In (2)-(5) standard errors are clustered at the firm level to account for multiple observations per firm

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

▶ Visualisation

Positive and significant female entrepreneurs' self-perceived entrepreneurial ability

	(1) Mean comparison	(2) Ancova	(3) Ancova	(4) DiD	(5) ATT	(6) ATT
Treatment	0.167 (0.126)	0.158 (0.117)	0.169 (0.116)	0.034 (0.113)		
L.Women's locus of control - z score		0.408*** (0.101)	0.327*** (0.096)		0.317*** (0.084)	0.322*** (0.085)
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Observations	134	129	129	299	129	129
Strata controls	No	No	Yes	Yes	Yes	Yes
Y0 control	No	Yes	Yes	Yes	Yes	Yes

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(1) uses robust standard errors. In (2)-(5) standard errors are clustered at the firm level to account for multiple observations per firm

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Management practices question (baseline)

1. **man_br_obj** Do you define and analyze the achievement of performance indicators for each employee?

Never (= 0)	Yearly (=1)	Monthly (=2)	Weekly (=3)	Daily (=4)

2. **man_br_feed** Do you have regular feedback meetings with your employees?

Never (= 0)	Yearly (=1)	Monthly (=2)	Weekly (=3)	Daily (=4)

3. **man_pro_ano** How often do you measure and analyze anomalies in the production of goods (units produced, production time, resources used) or in the delivery of your service?

Never (= 0)	Yearly (=1)	Monthly (=2)	Weekly (=3)	Daily (=4)

4. **man_fin_per** How often do you review your company's financial performance?

Never (= 0)	Yearly (=1)	Monthly (=2)	Weekly (=3)	Daily (=4)

5. **man_fin_enr** Do you record every purchase and sale made by the company?

Never (= 0)	Yearly (=1)	Monthly (=2)	Weekly (=3)	Daily (=4)

▶ Results - regressions

Management practices question 1 (midline)

Management practices question 2 (midline)

13. man_hr_ind How often do you evaluate employee performance in your company? مناطقة الشركة في الموظفين أداء تراجع مرة من الداش

ONLY ONE POSSIBLE ANSWER.

Never جمنا	Annually مرة في العام	Quarterly كل ثلاثي	Monthly مرة في الشهر	Weekly (or more) (مرة في الجمعة (أو أكثر
0	0.25	0.5	0.75	1

14. man_hr_obj What is the main mode of motivation in your company? ؟ شبة الطريقة الي تستعملها بالش تشجع الموظفين في الشركة مناطاك

ONLY ONE POSSIBLE ANSWER.

Compensation, bonus and promotion based on individual and company performance. المكافآت والترقيات على أساس الأداء الفردي للموظف وأداء الشركة	Remuneration, bonuses and promotion based on individual employee performance. المكافآت والترقيات على أساس أداء الموظف	Remuneration, bonuses and promotion are mainly based on factors other than performance. المكافآت والترقيات على أساس عوامل اخرى غير الأداء	There is no particular system for motivating employees. ما تعتمدوش حاجة معينة لتشجيع الموظفين
(1)	(½)	(1/4)	(0

15.

▶ Results - regressions

64 / 98

Management practices question 3 (midline)

16. **man_ind_awa** Who is aware of your company's production targets? production targets ? Please tick one box.

1. الحالة شكون يعرف أهداف إنتاج الشركة ؟ ضع علامة في

Senior managers المسؤولين التنفيذيين	Most managers and some employees أغلبية المديرين و بعض الموظفين	Most managers and most employees أغلبية المديرين والموظفين	All managers and employees جميع المديرين والموظفين
(¼)	(2/4)	(¾)	1

17. **man_source** Have you learned any new management strategies from the following sources?

تعلمت استراتيجيات تصرف جديدة من وحدة من المصادر التالية؟

SEVERAL POSSIBLE ANSWERS.

Consultant(ة مستشار)	1
Business contact , e.g. other CEO.(ة متنافس)	2
Employees الموظفين	3
Family العائلة	4
Participation in an event (conference or trade show) (ةالمشاركة في حدث (ندوة أو معرض تجار	5
No new management strategies learned ما تعلمتش استراتيجيات تصرف جديدة	6
Other (please specify) (أخرى (حدد	7

▶ Results - regressions ▶ Answers

Midline Distribution of Management Practices Index
Index calculated based on z-score method

Legend:
— Treatment group, consortium member (N=55 firms)
— Treatment group, drop-out (N=32 firms)
— Control group (N=89 firms)

▶ Results - regressions
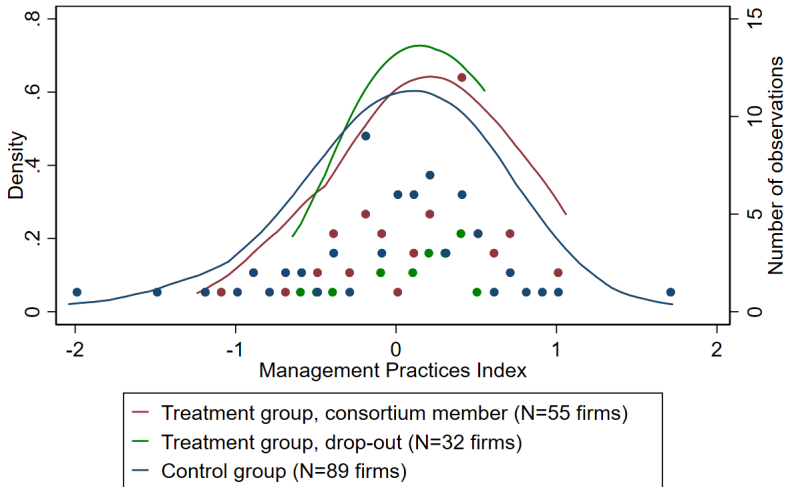
Questionnaire female entrepreneurs' confidence - index approach

(Female) Entrepreneurial confidence - Z Score: it is the average of standardized z-scores of outcomes measuring the following variables:

- Belief in own ability (self-efficacy)
- Sense of own initiative (excluded at midline)
- Sense of control over the business situation (locus of control)

▶ Results - regressions

Questionnaire female entrepreneurs' confidence - baseline

car_efi To what extent do you affirm the following sentences?

	1 = I do not affirm.	2	3	4	5 = I do affirm.
car_efi_fin1 I have the skills to access new sources of funding.					
car_efi_nego I negotiate my company's deals well.					
car_efi_conv I can convince employees and partners to agree with me.					

car_init To what extent do you affirm the following sentences?

	1 = I do not affirm.	2	3	4	5 = I do affirm.
car_init_prob I actively confront the company's problems whenever they arise.					
car_init_init I take the initiative immediately when others do not.					
car_init_oppo I identify and seize opportunities quickly to achieve my professional goals.					

loc To what extent do you affirm the following sentences?

	1 = I do not affirm.	2	3	4	5 = I do affirm.
car_loc_succ I am well able to determine the success of my business.					
car_loc_env I have a good understanding of what is going on in the internal and external environment of the company.					
car_loc_insp My example inspires other women to be better entrepreneurs.					

Results - regressions

Questionnaire female entrepreneurs' confidence - midline

Introduction

In the next section, we'll look at your perception of your situation as an entrepreneur.

في القسم الجاي، باش نهتمو بتصورك لموقفك كرائدة أعمال.

25. **car_efi** On a scale of 1 to 5, where 1 means "strongly disagree" and 5 means "strongly agree", how much do you agree with the following statements?

على مقياس من 1 إلى 5 ، 1 تعني " موش موافقة بالكل " و 5 تعني "موافقة برشا" ، ما مدى موافقتك على العبارات التالية:

ONLY ONE POSSIBLE ANSWER per line.

	1 Strongly disagree مش موافقة بالكل	2	3	4	5 I couldn't agree more. موافقة برشا
car_efi_fin1 I have the skills needed to access new sources of financing. عندي المهارات اللازمة باش نوصل لمصادر التمويل جديدة.	1	2	3	4	5
car_efi_nego I'm very good at attracting customers to my business. نجم نجلب حرفاء لشركتي.	1	2	3	4	5
car_efi_conv I'm able to motivate my company's employees. نجم تحمس/نشجع الموظفين في شركتي.	1	2	3	4	5

28. **loc** On a scale of 1 to 5, where 1 means "strongly disagree" and 5 means "strongly agree", how much do you agree with the following statements?

على مقياس من 1 إلى 5 ، 1 تعني "مش موافقة جملا" و 5 تعني "موافقة برشا" ، ما مدى موافقتك على العبارات التالية:

ONLY ONE POSSIBLE ANSWER per line.

	1 Strongly disagree مش موافقة بالكل	2	3	4	5 I couldn't agree more. موافقة برشا
car_loc_succ I'm confident that I'll be able to present my company and its product internationally. أنا قادرة على تحديد نجاح اعمالي	1	2	3	4	5
car_loc_env I feel comfortable making new business contacts. نعرف كيفاش نحد الى يصير في البيئة الداخلية والخارجية للشركة	1	2	3	4	5
car_loc_exp I know all the administrative and logistical procedures involved in exporting. عندي دراية بالإجراءات الادارية واللوجستية المتعلقة بالتصدير.	1	2	3	4	5

▶ Results - regressions

Increased female entrepreneurs' self-perceived entrepreneurial confidence

Midline Distribution of Female Empowerment Index
Index calculated based on z-score method

Legend:
- Treatment group, participated (N=55 firms)
- Treatment group, absent (N=32 firms)
- Control group (N=89 firms)

▶ Results – regressions
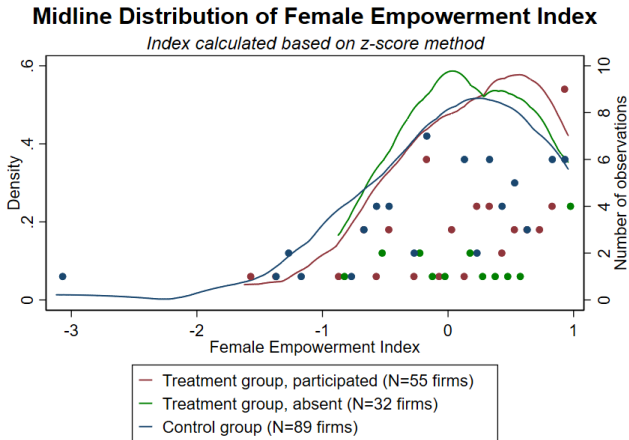
Female entrepreneurship coefficient plot
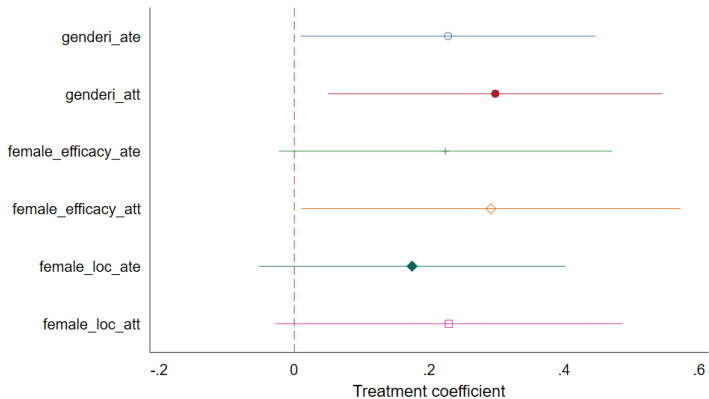
Treatment

- **Implementing partners:** The intervention is part of a larger PEMA II project, implemented by the German Development Agency GIZ and the Tunisian Export Promotion Agency (EPA) CEPEX.

- **Consultation hours:** 160 hours of support and interaction from consultants and project staff.

- **Current status:** End of Phase I which will be concluded with the legal registration of four consortia.

  - Highlight of Phase I: Presentation of the four groups at the COMESA Tunisia Businesswomen Days.

Budget allocated for the first phase of the treatment

Table: Cost for the first phase

	Activity	Budget spent (€)	Hours worked (h/d)	Hours worked (duration)
	1) Webinar launch	6,500€	33	6 months
	2) 3 First meetings	33,000 € accommodation fees & 30,000 € for consultants' mobilization	155	45 days (PEMA)
	3) Slack exchange and individual coaching	30,000€	150	30 days (PEMA)
Phase I: Forming Consortiums	4) 3 Intermediate meetings	33,000 € accommodation fees & 31,000 € for consultants mobilization	155	90 hours/day (PEMA)
	5) Operationalization meeting & decision of the executive office	8,000€	32	45 days (PEMA)
Total		171,500€		

▸ Treatment

Some pictures of the workshops

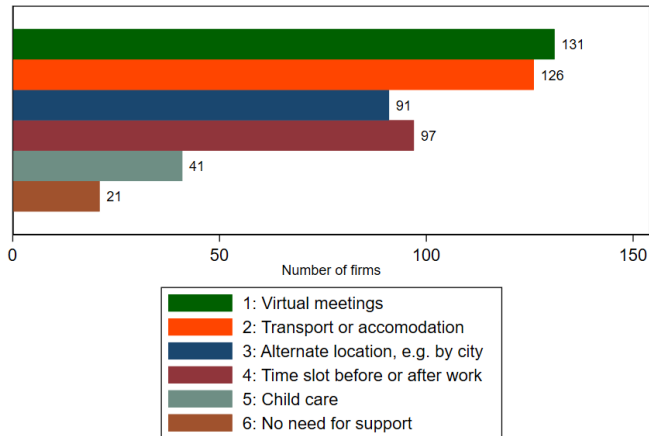▶ Treatment

Take-up and firm characteristics across consortia

Variable	Agro-food, Handicraft, Business Service			Digital Services		
	(1)	(2)	T-test	(1)	(2)	T-test
	Drop-out	Participate	P-value	Drop-out	Participate	P-value
	Mean/SD	Mean/SD	(1)-(2) Variable	Mean/SD	Mean/SD	(1)-(2)
Export sales > 0	0.52	0.29	0.07*	0.50	0.50	1.00
	(0.51)	(0.46)		(0.58)	(0.52)	
Export investment > 0	0.70	0.34	0.00***	0.00	0.71	0.00***
	(0.47)	(0.48)		(0.00)	(0.47)	
Export readiness	0.18	-0.08	0.04**	-0.29	-0.00	0.19
	(0.52)	(0.52)		(0.35)	(0.49)	
Sales	364,790.80	113,417.88	0.05**	189,000.31	486,001.52	0.21
	(634,830.34)	(153,604.64)		(184,640.71)	(774,453.07)	
Export sales	258,004.16	12,982.20	0.04**	69,510.94	283,624.55	0.19
	(612,340.75)	(31,955.24)		(111,704.33)	(545,488.92)	
Profit	57,683.20	23,219.02	0.14	19,558.75	57,713.93	0.39
	(109,927.78)	(58,453.61)		(21,594.03)	(154,832.54)	
Employees	10.19	5.88	0.11	5.75	10.93	0.13
	(13.39)	(4.76)		(3.10)	(10.73)	
Age	8.00	4.44	0.09*	5.00	9.36	0.21
	(10.48)	(3.83)		(3.16)	(10.97)	
Meetings with other CEOs, past 3 months	6.45	9.42	0.31	10.28	9.36	0.83
	(6.67)	(16.65)		(7.40)	(9.21)	
Neg. view CEO interaction	0.56	0.88	0.03**	0.25	0.79	0.05*
	(0.58)	(0.64)		(0.50)	(0.43)	
Total innovations	1.37	1.88	0.15	0.75	2.07	0.03**
	(1.42)	(1.40)		(0.96)	(1.14)	
N	27	41		4	14	
F-test of joint significance (F-stat)			5.70***			
F-test, number of observations			68			

Notes: Sample limited to treatment group. Accounting variables are winsorized at the 99th percentile. One observation is not included given it is an extreme outlier. The values displayed for t-tests are p-values. The value displayed for F-tests are the F-statistics. Standard deviations in squared brackets are robust. All missing values in balance variables are treated as zero. * significant at the 10% level. ** significant at the 5% level. *** significant at the 1% level.

▶ Peer effect

Theory of change

Virtual meetings and transport/accommodation are the most important participation support incentives among female CEOs in Tunisia

1: Virtual meetings
2: Transport or accomodation
3: Alternate location, e.g. by city
4: Time slot before or after work
5: Child care
6: No need for support

N = 176

Cooperativeness increased among female entrepreneurs

Perception of interactions between CEOs

Positive answers for the perception of interactions between CEOs
Negative answers for the perception of interactions between CEOs

▶ Regression
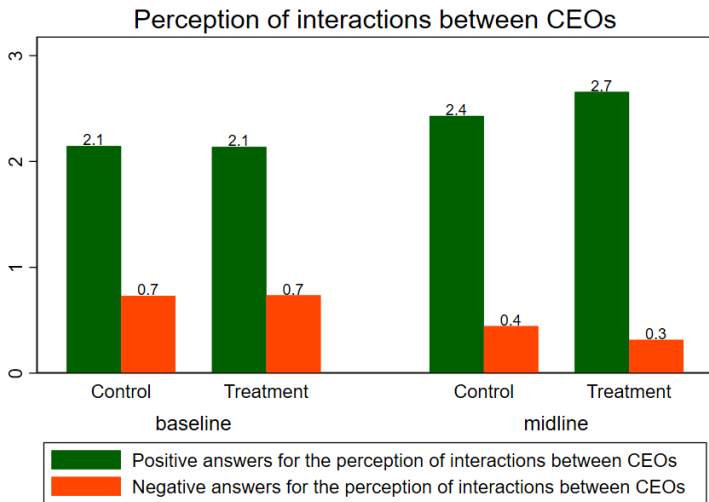
Increased cooperativeness thanks to changing view of other entrepreneurs as "partners"

Positive views of communication between CEOs
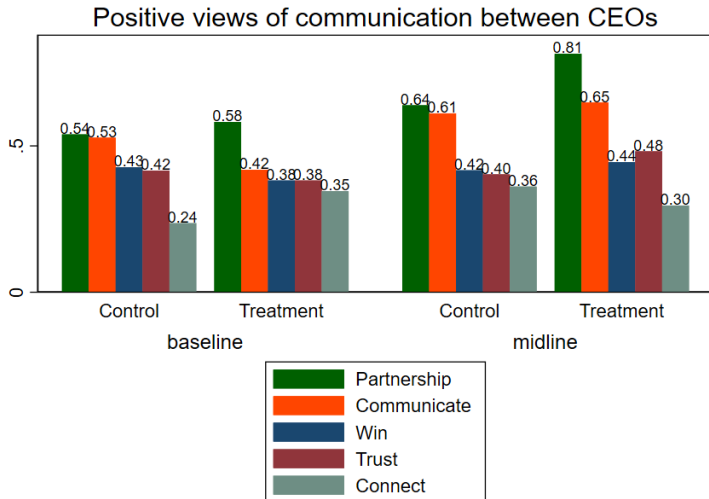
Most of female CEOs perceive positively interactions between CEOs

10. **net_coop** Choose the 3 words that best describe how you think CEOs interact with each other business.

3 POSSIBLE ANSWERS.

Win	1	Retreat	6
Communication	2	Partnership	7
Trust	3	Adversary	8
Beat	4	Connect	9
Power	5	Dominate	10

▸ Regression

Female CEOs show extremely high levels of confidence in their locus of control and initiative

Locus of control for female entrepreneur

- 4.25 Inspiring other women to become better entrepreneurs
- 4.18 Able to determine the success of her business
- 3.83 Control over the internal and external environment of the firm
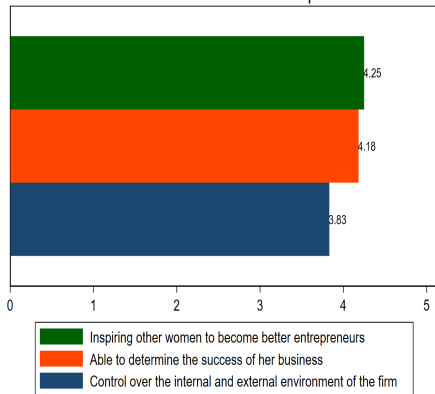
Locus of initiative for female entrepreneurs

- 4.41 Taking initiatives when others do not
- 4.35 Proactive problem confrontations
- 4.28 Identification and pursue of opportunities
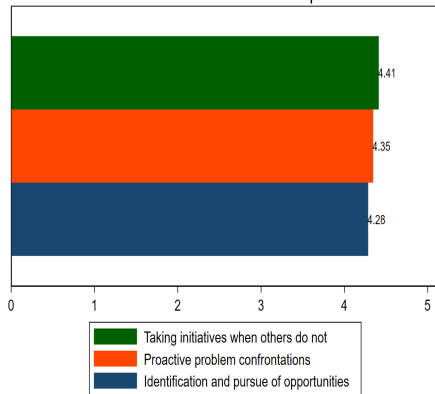
No effect on contacts with male CEOs

	(1)	(2)	(3)	(4)	(5)
	Mean comparison	Ancova	Ancova	ATT	ATT
Treatment	0.258	0.258	0.106		
	(1.450)	(1.440)	(1.435)		
take_up_per				0.148	
				(1.772)	
company decided to participate in consortium					0.142
					(1.692)
Constant	4.797***	4.797***	2.280	2.277*	2.286*
	(1.003)	(0.995)	(1.393)	(1.249)	(1.197)
Observations	141	141	141	141	141
Strata controls	No	No	Yes	Yes	Yes
Y0 control	No	Yes	Yes	Yes	Yes

Standard errors in parentheses

Column (1) presents estimates for a simple mean comparison between treatment and control group at midline.

Column (2) presents an ANCOVA specification without strata controls.

Column (3) presents an ANCOVA specification with strata controls.

Column (4) estimates are based on 2SLS instrumental variable estimation where treatment assignment is the instrument for treatment participation.

(1) uses robust standard errors. In (2)-(5) standard errors are clustered at the firm level to account for multiple observations per firm

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

▸ Female CEO

Female-led firms seem to have difficulty accessing new sources of funding

Locus of entrepreuneurhsip for female entrepreuneurs

Legend:
- Manage to convince employees and partners to agree
- Negotiate the affairs of the company well
- Have the skills to access new sources of funding

Values: 4.10, 4.07, 3.72
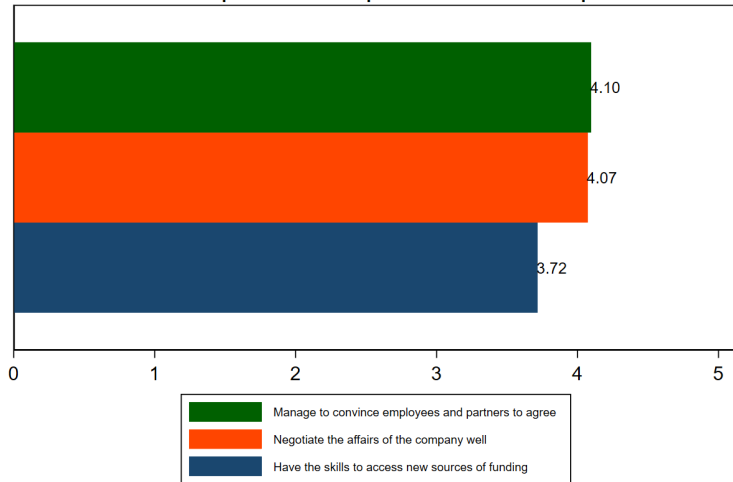
Networking question

9. **net_nb_qualite** On a scale of 1 to 10, where 1 means "not at all useful" and 10 means "very useful", how useful do you consider your personal network to be in running your business?

على مقياس من 1 إلى 10 ، وين 1 تعني "غير مفيد جملة" و 10 تعني "مفيدة برشا" ، الي أي درجة تشوف انو النصائح والمعلومات متع الشبكة الشخصية متاعك مفيدة في إدارة الشركة متاعك؟

ONLY ONE POSSIBLE ANSWER.

1 = Not at all useful غير مفيد جملة	2	3	4	5	6	7	8	9	10 = Very useful مفيدة برشا

▶ Regression

Increased female entrepreneurs network size
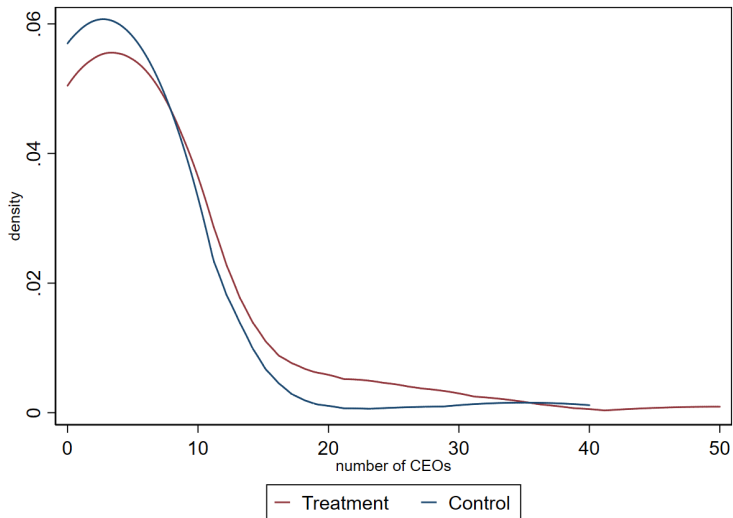
Female entrepreneurs network question (baseline)

We're now going to ask you a few questions about your company's business contacts.

13. **net_nb** With approximately how many people do you discuss challenges or ideas related to your company's development?

Note that these are the people with whom you are close enough to ask for information, a favor, a contact, and so on.

ONLY ONE POSSIBLE ANSWER.
Only positive figures are accepted.

net_nb_fam People in your family	....
net_nb_outside People outside your family	......

▶ Regression

Female entrepreneurs network question (midline)

10. **net_coop** Choose the 3 words that best describe how you think CEOs interact with each other in business.

3 POSSIBLE ANSWERS.

Win	1	Retreat	6
Communication	2	Partnership	7
Trust	3	Adversary	8
Beat	4	Connect	9
Power	5	Dominate	10

▸ Regression

Network coefficient plot

Note: Confidence intervals are at the 95% level.

▶ Regression(size) ▶ Regression(cooperation)
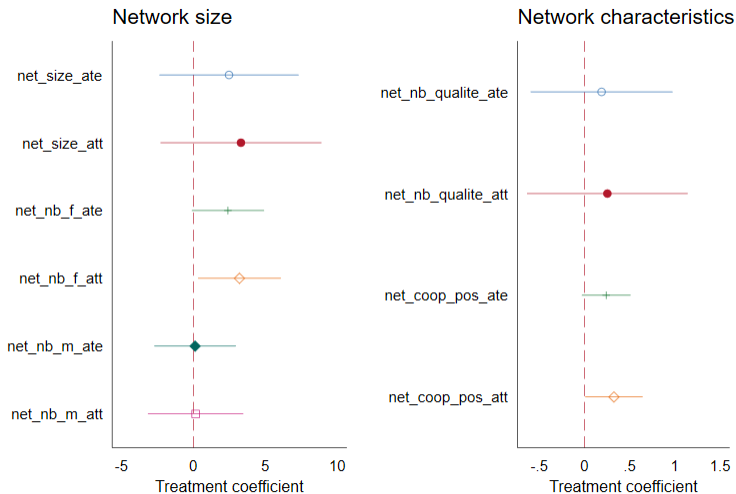
Export Readiness index question

22.   **exp_pra** Have you undertaken any of the following activities in the last 12 months?

من بين الأنشطة هاذي، اناهم الي قمت بيهم في ال 12شهر الي فاتو؟

ONLY ONE POSSIBLE ANSWER per line.

	Yes (1)	No (0)
exp_pra_fair Participate in international trade shows. تشارك في المعارض التجارية الدولية	1	2
exp_pra_sci Hire or work with an international trading company. الالتزام أو العمل مع شركة تجارية دولية	1	2
exp_pra_rexp Appoint an employee to handle export-related sales activities. تعيين موظف مسؤول عن الأنشطة التجارية المتعلقة بالتصدير	1	2
exp_pra_target Undertake an analysis of target export markets (identify a target market) . تعمل دراسة لأسواق التصدير المستهدفة (تحدد سوق هدف)	1	2
exp_pra_mission Undertake a trade mission/travel to one of your target markets. تقوم بمهمة تجارية/ سفر لإحدى الأسواق المستهدفة	1	2
exp_pra_douane Access the customs website. تدخل للموقع الإلكتروني للديوانة	1	2
exp_pra_plan Maintain or develop a plan or strategy strategy (specifying concrete steps to penetrate a foreign market) . تحافظ على خطة تصدير أو تقوم بتطويرها (تحديد خطوات ملموسة بش تدخل لسوق أجنبي)	1	2

▶ Visualisation

A slight improvement in the profit of the participating companies can be observed
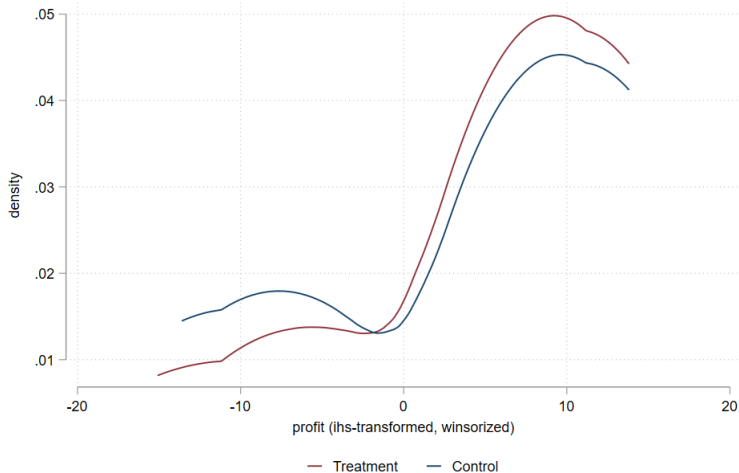
Regression

Business coefficient plot
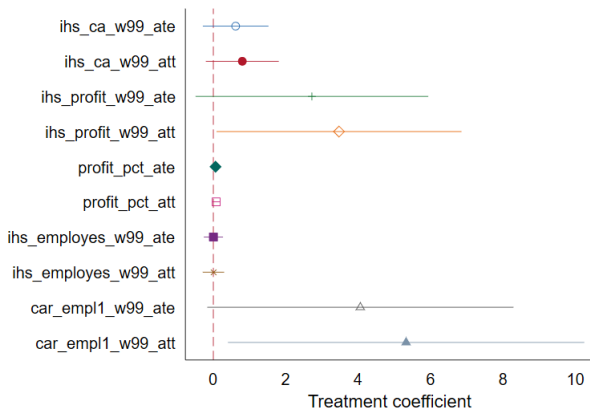
Note: Confidence intervals are at the 95% level.

▶ Regression

Network quality advice question

9. **net_nb_qualite** On a scale of 1 to 10, where 1 means "not at all useful" and 10 means "very useful", how useful do you consider your personal network to be in running your business?

على مقياس من 1 إلى 10 ، وين 1 تعني "غير مفيد جملة" و 10 تعني "مفيدة برشا" ، الي أي درجة تشوف انو النصائح والمعلومات متع الشبكة الشخصية متاعك مفيدة في إدارة الشركة متاعك؟

ONLY ONE POSSIBLE ANSWER.

1 = Not at all useful غير مفيد جملة	2	3	4	5	6	7	8	9	10 = Very useful مفيدة برشا

▶ Visualisation

Individual coaching session topics

Topic	Value
Access to funding	8
Accounting & Financial Management	12
Business Development	16
Distribution	6
Government programs & tenders	6
Human relations/ resources	5
Legal and administrative aspects	3
Marketing	17
Product/ Service Development	15
Production	6
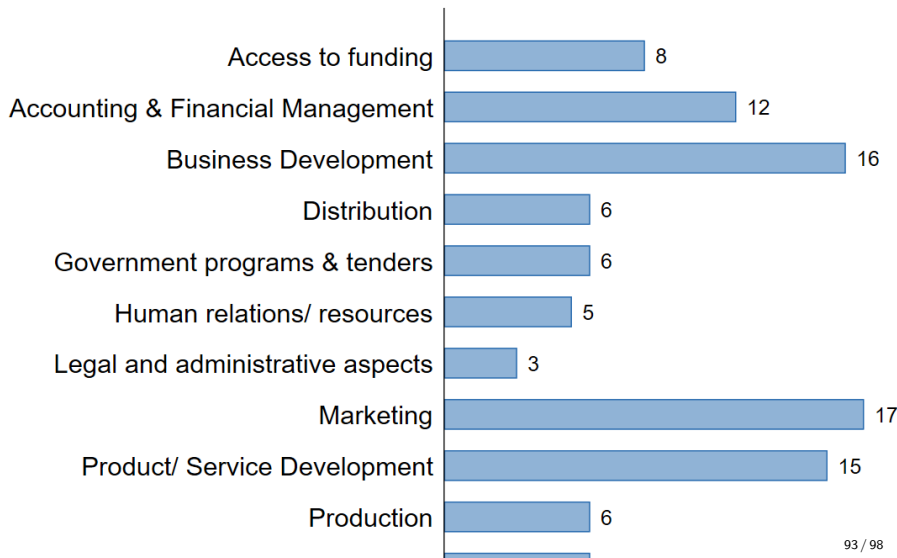
Advice quality - Regression

	(1) Mean comparison	(2) Ancova	(3) Ancova	(4) DiD	(5) ATT	(6) ATT
Treatment	0.266 (0.392)	0.349 (0.396)	0.243 (0.406)	0.078 (0.319)		
L.quality advice of the business network		0.088 (0.098)	0.095 (0.100)		0.098 (0.087)	0.095 (0.086)
midline				0.212 (0.370)		
Treatment × midline				0.124 (0.514)		
take_up_per					0.344 (0.488)	
company decided to participate in consortium						0.324 (0.457)
Constant	7.764*** (0.308)	6.987*** (0.807)	7.032*** (1.233)	7.324*** (0.589)	7.002*** (1.060)	7.042*** (1.040)
Observations	123	119	119	290	119	119
Strata controls	No	No	Yes	Yes	Yes	Yes
Y0 control	No	No	Yes	Yes	Yes	Yes

Standard errors in parentheses

Columns (1) - (4) present estimates based on logit models.

Column (1) presents estimates for a simple mean comparison between treatment and control group at midline.

Column (2) presents an ANCOVA specification without strata controls.

Column (3) presents an ANCOVA specification with strata controls.

Column (4) provides estimates from a difference-in-difference specification.

Column (5) estimates are based on 2SLS instrumental variable estimation where treatment assignment is the instrument for treatment participation.

(1) uses robust standard errors. In (2)-(5) standard errors are clustered at the firm level to account for multiple observations per firm

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

▶ Visualisation

Effect of peer quality on entrepreneurial confidence

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
distance to peer average management practices	-0.508									
	(0.314)									
	0.111									
distance to top-3 average management practices		-0.547*								
		(0.317)								
		0.090								
distance to peer average entrepreneurial confidence			-1.011***							
			(0.006)							
			0.000							
distance to top-3 average entrepreneurial confidence				-1.002***						
				(0.003)						
				0.000						
distance to peer average export performance					0.239					
					(0.354)					
					0.504					
distance to top-3 average export performance						0.245				
						(0.375)				
						0.516				
distance to peer average business size							-0.422			
							(0.358)			
							0.244			
distance to top-3 average business size								-0.432		
								(0.369)		
								0.247		
distance to peer average profit									0.000	
									(0.000)	
									0.494	
distance to top-3 average profit										0.000
										(0.000)
										0.439
Take-up mean	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21
Take-up SD	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63
Observations	54	54	54	54	51	51	54	54	45	45
Strata controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Y0 controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Notes: The dependent variable is the change in entrepreneurial confidence between baseline and midline. Each specification includes controls for randomization strata, baseline outcome, and a missing baseline dummy. The sample is restricted to companies that joined the consortium. Take-up mean and take-up SD refer to the outcome variable mean and SD at midline. Clustered standard errors by firms in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$ denote the significance level. P-values are reported below the standard errors.

▶ Peer effects

Effect of peer quality on entrepreneurial confidence

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
distance to peer average management practices	-0.508 (0.314) 0.111									
distance to top-3 average management practices		-0.547* (0.317) 0.090								
distance to peer average entrepreneurial confidence			-1.011*** (0.006) 0.000							
distance to top-3 average entrepreneurial confidence				-1.002*** (0.003) 0.000						
distance to peer average export performance					0.239 (0.354) 0.504					
distance to top-3 average export performance						0.245 (0.375) 0.516				
distance to peer average business size							-0.422 (0.358) 0.244			
distance to top-3 average business size								-0.432 (0.369) 0.247		
distance to peer average profit									0.000 (0.000) 0.494	
distance to top-3 average profit										0.000 (0.000) 0.439
Take-up mean	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21
Take-up SD	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63
Observations	54	54	54	54	51	51	54	54	45	45
Strata controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Y0 controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Notes: The dependent variable is the change in entrepreneurial confidence between baseline and midline. Each specification includes controls for randomization strata, baseline outcome, and a missing baseline dummy. The sample is restricted to companies that joined the consortium. Take-up mean and take-up SD refer to the outcome variable mean and SD at midline. Clustered standard errors by firms in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$ denote the significance level. P-values are reported below the standard errors.

Effect of peer quality on management practices

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
distance to peer average management practices	-0.988*** (0.014) 0.000									
distance to top-3 average management practices		-0.993*** (0.007) 0.000								
distance to peer average entrepreneurial confidence			-0.205** (0.093) 0.032							
distance to top-3 average entrepreneurial confidence				-0.215** (0.097) 0.031						
distance to peer average export performance					-0.228 (0.195) 0.247					
distance to top-3 average export performance						-0.179 (0.209) 0.395				
distance to peer average business size							-0.281 (0.208) 0.182			
distance to top-3 average business size								-0.316 (0.220) 0.157		
distance to peer average profit									0.000** (0.000) 0.011	
distance to top-3 average profit										0.000*** (0.000) 0.003
Take-up mean	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16
Take-up SD	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48
Observations	54	54	54	54	51	51	54	54	45	45
Strata controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Y0 controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

The dependent variable is the change in the management practices index between baseline and midline. Each specification includes controls for randomization strata, baseline outcomes, and a missing baseline dummy. The sample is restricted to companies that joined the consortium. Take-up mean and take-up SD refer to the outcome variable mean and SD at midline. Clustered standard errors by firms in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$ denote the significance level. P-values are reported below the standard errors.

▶ Peer effects

Effect of peer quality on profit

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
distance to peer average management practices	4.695									
	(4.789)									
	0.330									
distance to top-3 average management practices		4.709								
		(5.165)								
		0.367								
distance to peer average entrepreneurial confidence			-2.253							
			(3.435)							
			0.515							
distance to top-3 average entrepreneurial confidence				-2.341						
				(3.478)						
				0.504						
distance to peer average export performance					-4.770					
					(5.294)					
					0.424					
distance to top-3 average export performance						-7.434				
						(8.179)				
						0.368				
distance to peer average business size							1.754			
							(5.128)			
							0.734			
distance to top-3 average business size								2.271		
								(5.480)		
								0.681		
distance to peer average profit									-0.000*	
									(0.000)	
									0.075	
distance to top-3 average profit										-0.000*
										(0.000)
										0.067
Take-up mean	-0.19	-0.19	-0.19	-0.19	-0.19	-0.19	-0.19	-0.19	-0.19	-0.19
Take-up SD	9.53	9.53	9.53	9.53	9.53	9.53	9.53	9.53	9.53	9.53
Observations	45	45	45	45	45	45	45	45	45	45
Strata controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Y0 controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Notes: The dependent variable is the change in inverse hyperbolic sine transformed profits between baseline and midline. Each specification includes controls for randomization strata, baseline outcome, and a missing baseline dummy. The sample is restricted to companies that joined the consortium. Take-up mean and take-up SD refer to the outcome variable mean and SD at midline. Clustered standard errors by firms in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$ denote the significance level. P-values are reported below the standard errors.

▶ Peer effects