Curating Local Knowledge

Experimental Evidence from Small Retailers in Indonesia

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Background

- There is a remarkable heterogeneity in the adoption of business practices within economic sectors (Bloom & van Reenen, 2007; Syverson, 2011; Gibbons & Henderson, 2013).
- Heterogeneity is strongly associated with firm-level productivity differences (de Mel et al., 2009; McKenzie & Woodruff, 2017; Bloom et al., 2019).
- Knowledge on locally profitable business practices does exist, yet it does not diffuse naturally.
- Understanding how to facilitate knowledge diffusion is an important and outstanding research question.

What does this paper do?

- Hypothesis: Small-scale firms in developing countries face multiple and potentially overlapping constraints to the adoption of profitable business practices.
  - Informational constraints.
  - Behavioral constraints.

- Field experiment → alleviates these constraints → the diffusion of business practices in a cost-effective manner.

How to address informational constraints?

- Addressing informational constraints is challenging.
- Impacts of standard business training programs is low or zero (Quinn & Woodruff, 2019; McKenzie, 2020).

- This paper takes a fundamentally different approach than standard business training. Instead of providing set-courses:
  - We harness the existing local heterogeneity observed in practices and profits.
  - Curate a **handbook** that associates practical and locally relevant best practices with performance.
  - The handbook identifies and prioritizes most relevant information for performance improvements in the local setting.
  - The handbook provides idiosyncratic implementation guidance informed by exemplary local retailers.

How to address behavioral constraints?

- Behavioral nudges grounded in the hypothesis that information alone, even if curated, may not be sufficient to facilitate sustained behavior change.
  - Movie screening featuring the paths to success of exemplary peers.
    - Psychological and emotional involvement → social learning is possible through **observing the successful experience of similar others**. (Bernard, et al., 2014; La Ferrara et al., 2012; Chong & La Ferrara, 2009; Berg & Zia, 2013).
    - Targets potential aspirations constraints (Dalton et al., 2016)
  - Two 30 minute in-person counseling visits.
    - Targets inattention (Steiner et al., 2017), status-quo bias (Kahneman et al., 1991) and procrastination (Duflo et al., 2011).

How do we learn about locally relevant best practices?

- Detailed qualitative interviews with local business peers:
  - understand their **practices** (record-keeping, financial planning, stocking-up, marketing, and joint decision-making)
  - implementation **steps and norms**
  - **misconceptions** regarding each practice (e.g. whether they are complicated, necessary, etc.)
  - **tips and rule of thumbs**

- Baseline quantitative survey
  - **Measure** practices and outcomes
  - Quantitative **association** of business practices **with profits** and sales

Research Questions

- **Adoption**
  - Do retailers adopt these practices once peer best practices are aggregated and made common knowledge?
  - If so, ...
    - What are the binding constraints?

- **Impact**
  - Does firm profitability increase?
  - If so, what are the channels?

Related Literature

- Scalability
  - The biggest challenge is scaling up good quality business development services (McKenzie, 2020)
  - This study → low cost scalability of locally relevant business practices.

- Firm upgrading and PPDs among SSEs (e.g. Gibbons & Henderson, 2013)
  - A key factor preventing knowledge diffusion is that much of the knowledge is tacit (Verhoogen, 2020)
  - Importance to decoding tacit knowledge to facilitate diffusion (Arrow, 1969).

- Mobilizing peer learning (Brooks et al. (2018), Cai & Szeidl (2018) and Fafchamps & Quinn (2018)
  - Local knowledge shared personally by firm owners. Costly and choice of practice may be strategic.
  - Competition is a barrier for knowledge diffusion (Hardy Morgan & McCasland, 2016) → Most practices in the handbook are non-rivalrous.

Study Setting, Sampling and Randomization

Study Setting

- Jakarta, Indonesia.
- Traditional retail shops locally called *Warung*.
- Situated in residential areas or adjacent to "wet markets" for meat, fish, and vegetables.
- Stable business premises, no franchises.
- Offer many (about 25) product categories.
- The average retailer sells a variety of goods.
- Retailers specialized in different categories of "non-perishable" goods (not all sell the same).
  - Tobacco and cigarettes plus some other goods.
  - Rice, cereals.
  - Gas and petrol, cleaning products, soft drinks.
  - Less than 5% of shops sells fruits and vegetables or meat and fish.

→ These types of retailers are ubiquitous in Indonesia as well as in other developing countries.

Retailer

Retailer

Kapal Api
Kapal Api
Kapal Api
Kapal Api
Kapal Api
Kapal Api
Fresco
Fresco
Fresco
Kopi Krim SUSU
Kopi Krim SUSU
Kopi Krim SUSU
Easy
Attack
Rapika
OASIS
TROPICAL
TROPICAL
TROPICAL
TROPICAL
2 lt
24 pcs x 500 ml
LARUTAN
9

Sample and Random Assignment

- Select randomly 29 administrative communities ('Kelurahan') in urban Jakarta.
- List a random sample of 2042 small retail businesses.
- Take a random sub-sample of 1301 from the list.

- Selection criteria for firm listing:
  - At least $4m^2$ in size
  - At least two different product categories on offer
  - At least 30 meters distance to next business in sample $\rightarrow$ minimizes contamination
- Randomization to treatments arms stratified by
  - Gender
  - Firm space (4-6m^2, 6-10m^2, 10 and above m^2)
  - Composite score of business practices above or below median
  - Kelurahan

Sample Map

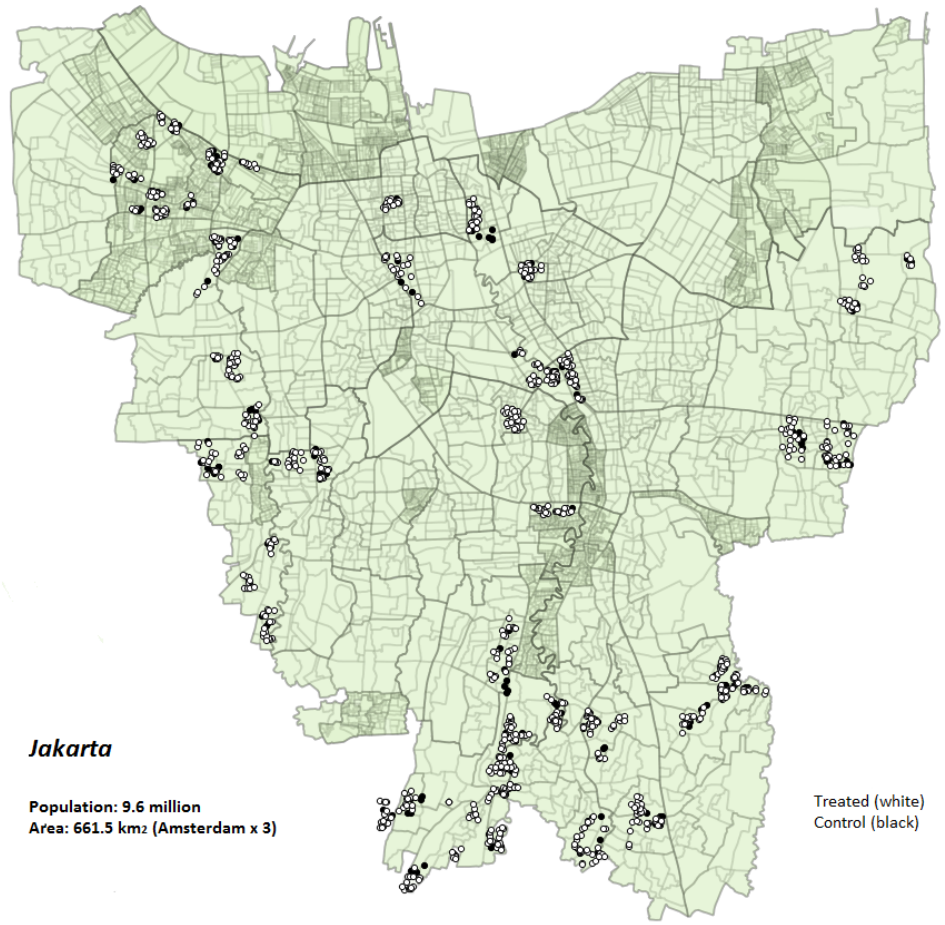

Figure: City-level representation of the final sample of 1301 retail businesses

Sample Map - II

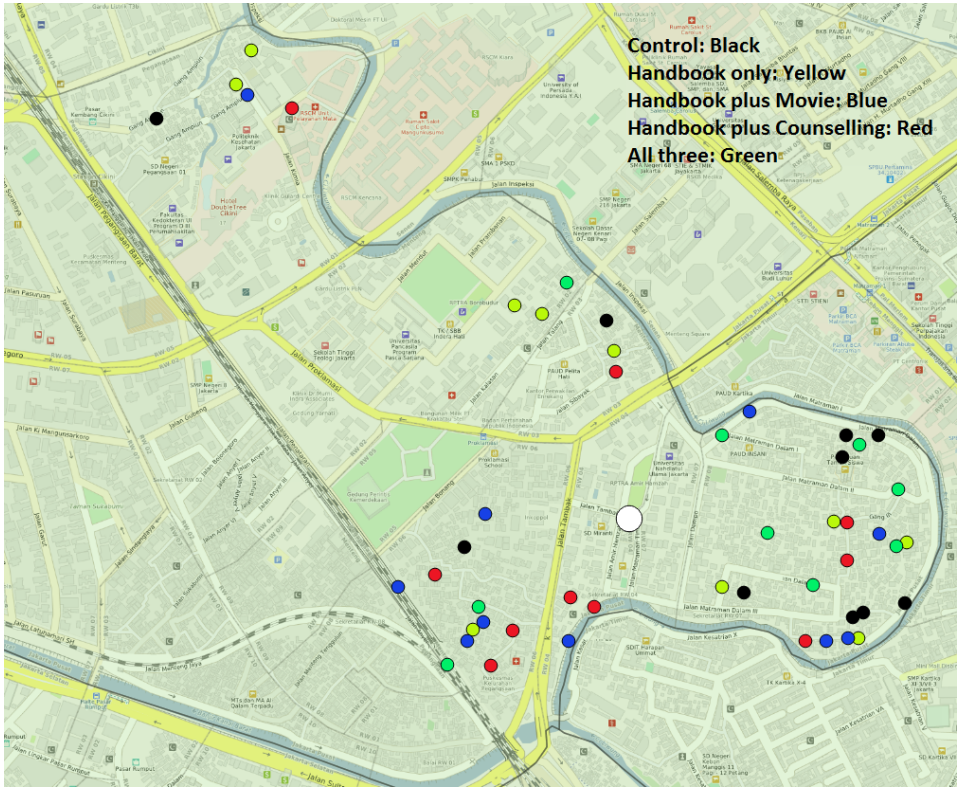

Figure: District-level representation of a sub-sample

Experimental Design and Timeline

Experimental Design

- Three types of interventions:
  - Handbook with best practices and tips
  - Movie with successful peers
  - Business practice implementation counseling
- Five experimental groups
  1. Handbook only (N=260)
  2. Handbook and invitation to movie screening (N=260)
  3. Handbook and offer of two counseling visits (N=260)
  4. Handbook and both movie and counseling (N=260)
  5. Control (N=261)

Summary of Research Timeline

1. September 2015: Qualitative Interviews
2. January 2016: Listing for Baseline
3. Feb-Apr 2016: Baseline Survey
4. Oct-Nov 2016: Interventions
5. Apr-May 2017: Midline
6. Apr-May 2018: Endline

Interventions

Handbook

Figure: Best-practices handbook

Handbook: Development

- Qualitative and semi-structured interviews with 102 retailers chosen from two comparable urban markets outside of our study area.
  - **to understand the most common and successful local business practices** from the perspective of business owners.
  - **to familiarize ourselves with the various implementation processes**, norms, tips and constraints to practice use.
  - **to identify potential successful retailers** for the movie.
- Identify categories of locally relevant business practices (e.g. record keeping, attracting customers, etc.)
- Baseline survey: Measure practice use and business performance.
- Estimate linear regressions of profits, sales, and number of customers on individual practices and a set of firm-level controls.
- Develop the handbook of best practices used by peers.

Handbook: Structure

- **Five chapters**: keeping business records, calculating profits, making stock-up decisions, attracting customers, and cooperation in business decisions.

- **Structure of each chapter**:
  1. Confronts common **misconceptions** about the usefulness of different practices (e.g. keeping records is complex or a waste of time). Example
  2. Provides arguments for **why it is important** to implement the practices using locally relevant evidence-based reasons.
     - ★ **Regression coefficients** associating practices with profits and sales. Example Selection Table
     - ★ **Other reasons** to implement the practices (e.g. profit-calculation is useful to plan and save up money). Example
  3. Provides **step-by-step implementation** guidance illustrated by practical examples. Example
  4. Offers **tips and tricks** to help the implementation. Examples

- **Exercise book and a short guide**

Handbook vs Standardized Classroom Training Modules

- ILO SIYB (Start and Improve your Business Program):
  - 6 million trainees and 17,000 trainers over the last 30 years.
  - Training-of-trainers. Up to 2 years. Average cost: 50,000 USD – 150,000 USD. Not including the cost for the beneficiaries.
  - Generic Syllabus. It goes through ALL business practices. ALL similar importance.
  - 600 pages.
  - Standardized content and professional language → disconnect with beneficiaries.
- Our handbook
  - Relies exclusively on self-learning with no classroom training. No need to train trainers intensively.
  - Selects and highlights only those practices that are profitable and locally relevant.
  - 60 pages
  - Language and terminology that is native to the local context.

Handbook vs Rule-of-Thumb Training

- Drexler et al (2014) propose a rule-of-thumb training that teaches basic financial heuristics to micro-entrepreneurs
- Use **local experts** to develop the syllabus
  - Local knowledge comes from the **subjective experiences** of the local expert.
  - Ours is the result of a detailed and structured qualitative and quantitative study made by **us as intermediaries**.
- Use a **classroom type** of training over 15 hours.
- We use **no classes**. Low opportunity cost. Avoid non-compliance. Increase power.

Handbook vs Market Intelligence

- We **do not do** market intelligence.
- We **do not provide information on the market** (trends, competitors or potential customers).
- We focus on the **internal practices of the firm**, rather than on how the market works.
- We learn about what works for businesses who share a similar business model, have similar size and share the same culture, but who are **not necessarily competitors**.

Movie with Successful Peers

Figure: Movie screening

Movie with Successful Peers - II

- How were the successful peers (role models) selected?
  - Qualitative interviews and quantitative baseline survey

    → Top 5 retailers selected to represent the local frontier in each of the Top 5 practices - from 102 retailers interviewed before the baseline.
    - ★ We capture local ways of implementing best practices in a **25-minute movie** featuring these successful peers.
    - ★ We invite business owners to **public movie screenings** in local public facilities.
    - ★ Screenings end with a **presentation** by trained local staff which ties the practices back to the handbook.

    → **Importantly:** The practices presented in the movie cover the same topics presented in the handbook.

Implementation Counseling for Business Practices

Figure: A facilitator explaining the record-keeping chapter in a help session

Implementation Counseling for Business Practices - II

- Training of local facilitators
  - Extensive handbook study
  - Background knowledge of small retail businesses in Jakarta
- Implementation help sessions (of 30 minutes each)
  - *1st session*
    - Ask entrepreneur which handbook practices they are most interested in implementing
    - **Diagnose constraints** to knowledge acquisition and practice implementation
    - **Offer solutions** derived from handbook
    - **Set goals** for next session to follow up on
  - *2nd session* (one to two weeks later)
    - **Follow up on progress** and diagnose constraints
    - **Offer solutions** derived from handbook

Data

Summary Statistics and Tests of Randomization

Table 1: Summary Statistics and Tests of Randomization

	(1)	(2)	(3)
Variable	Sample Mean	Standard Deviation	F-Test of Joint Equality of Means Across All Treatments (p-value)
Respondent is Male	0.29		0.96
Respondent Age	45.27	11.31	1.00
Respondent Years of Education	9.39	3.78	0.66
Respondent Risk Preference Score (0-1 scale)	0.37	0.21	0.64
Respondent Time Preference Score (0-1 scale)	0.52	0.23	0.92
Shop Size in Square Meters	13.22	12.34	0.63
Age of Firm	13.60	11.79	0.72
Firm has Tax ID	0.19		0.37
Total Number of Employees	2.00	1.22	0.58
Total Number of Customers on a Normal Day	49.33	43.32	0.29
Sales Last Month (USD PPP)	4786.16	4853.48	0.63
Estimated Profits Last Month (USD PPP)	907.73	1185.09	0.71
Obtained Business Loan in Last 12 Months	0.16		0.52
Aggregate Score of Practices Covered in Handbook (0-1 scale)	0.36	0.18	0.83
Aggregate Score for Practices Not Covered in Handbook (0-1 scale)	0.18	0.13	0.59
Aggregate Score of Enumerator Shop Evaluation (0-1 scale)	0.63	0.24	0.52

Omnibus Chi-Square Test of Joint Orthogonality from Multinomial Logit (p-value): 0.819

Attrition

Appendix Table B1: Attrition Analysis

	(1) Completed Midline Survey	(2) Completed Endline Survey	(3) Business Closed at Midline Survey	(4) Business Closed at Endline Survey
Assigned Handbook	-0.021	-0.035	0.010	0.004
	(0.024)	(0.035)	(0.020)	(0.029)
Assigned Handbook & Movie	-0.026	-0.007	-0.005	-0.003
	(0.024)	(0.035)	(0.019)	(0.029)
Assigned Handbook & Counseling	-0.022	-0.021	0.009	-0.001
	(0.024)	(0.035)	(0.020)	(0.028)
Assigned All Three	-0.035	-0.033	-0.005	-0.009
	(0.025)	(0.035)	(0.019)	(0.028)
R-squared	0.034	0.043	0.036	0.043
N	1301	1301	1301	1301
Dependent Variable Mean in Control Group	0.927	0.805	0.054	0.126
F-test (p-value): Book = Book & Movie	0.866	0.440	0.463	0.792
F-test (p-value): Book = Book & Assistance	0.985	0.713	0.980	0.853
F-test (p-value): Book = All Three	0.617	0.962	0.465	0.651
F-test (p-value): Book & Movie = Book & Counseling	0.878	0.682	0.471	0.935
F-test (p-value): Book & Movie = All Three	0.744	0.468	0.984	0.854

Notes: This table presents regression analysis for completion of the midline survey (columns 1) and endline survey (columns 2). Columns (3) and (4) repeat the main regression specification for business closures at midline and endline, respectively. All specifications include stratification controls, and use robust standard errors.

Take Up

Appendix Table C1: Takeup and Evaluation of Documentary Movie and Counseling

	(1)	(2)	(3)
Panel A: Documentary Movie	Handbook and Movie (A)	All Three (B)	A=B (p-value)
Attended Movie Screening	0.52	0.49	0.54
Evaluation: Learned Something New (0-4 scale)	3.34	3.21	0.18
Evaluation: Feeling Inspired (0-4 scale)	3.31	3.3	0.941
Evaluation: Feeling Hopeful (0-4 scale)	3.6	3.42	0.043**
Evaluation: Feeling Bored (0-4 scale)	0.83	0.97	0.43
Panel B: Counseling	Handbook and Counseling (A)	All Three (B)	A=B (p-value)
Received First Counseling Session	0.77	0.78	0.752
Received Second Counseling Session	0.68	0.68	0.925
Evaluation: Learned Something New (0-4 scale)	2.88	2.89	0.908
Evaluation: Feeling Inspired (0-4 scale)	2.76	2.83	0.422
Evaluation: Feeling Hopeful (0-4 scale)	2.88	2.97	0.312
Evaluation: Feeling Bored (0-4 scale)	0.59	0.43	0.118

Notes: This table presents take-up proportions and evaluations of the documentary movie (Panel A) and counseling (Panel B), separately for the respective treatment arms. The evaluation questions were coded on a 0-4 scale with 0 representing "strongly disagree" and 4 representing "strongly agree." Column (3) presents p-values for equality of means tests for outcomes in columns (1) and (2). Statistically significant p-values are highlighted by: ** (5% significance level).

Selection into Treatment

Appendix Table C3: Selection into Treatment

	(1)	(2)	(3)	(4)
	Received Handbook	Received Handbook & Movie	Received Handbook & Counseling	Received All Three
Respondent is Male	-0.050	0.010	0.025	-0.123
	(0.043)	(0.079)	(0.065)	(0.082)
Respondent Age	0.006***	0.001	-0.002	0.005
	(0.002)	(0.004)	(0.003)	(0.004)
Respondent Years of Education	-0.001	0.013	-0.006	0.010
	(0.006)	(0.010)	(0.008)	(0.010)
Respondent Risk Preference Score (0-1 scale)	0.099	0.077	-0.134	-0.116
	(0.101)	(0.160)	(0.160)	(0.156)
Respondent Time Preference Score (0-1 scale)	-0.029	0.097	-0.001	0.005
	(0.079)	(0.156)	(0.130)	(0.146)
Shop Size (Sq. Meters)	-0.001	0.001	-0.000	-0.003
	(0.002)	(0.003)	(0.003)	(0.002)
Age of Firm	0.002**	-0.001	0.006**	0.004
	(0.001)	(0.003)	(0.003)	(0.003)
Firm has Tax ID	0.240***	0.059	-0.025	0.036
	(0.055)	(0.101)	(0.099)	(0.106)
Total Number of Employees	0.023*	0.010	-0.003	0.032
	(0.012)	(0.030)	(0.029)	(0.023)
Sales Last Month (win 5%)	0.000	0.000	0.000	-0.000
	(0.000)	(0.000)	(0.000)	(0.000)
Estimated Profits Last Month (win 5%)	-0.000	-0.000	-0.000	-0.000
	(0.000)	(0.000)	(0.000)	(0.000)
Aggregate Practices Score	0.063	-0.107	0.004	-0.067
	(0.113)	(0.185)	(0.182)	(0.178)
R-squared	0.215	0.186	0.161	0.234
N	260	260	260	260
Dependent Variable Mean	0.904	0.512	0.773	0.469

Outcome Analysis

Outcome Analysis: Intention-to-Treat Regressions

Estimate the ITT effect on a given outcome Y using the following ANCOVA:

$$Y_{2i} = \alpha + \sum_{m=1}^{4} \beta_m \mathrm{T}_{mi} + \gamma \mathrm{X}_{1i} + \delta V + \theta M + \zeta \mathrm{Y}_{1i} + \epsilon_i$$

- Y_{2i} is the outcome for business i at <u>midline</u> and <u>endline</u> stacked up together.
- X is baseline stratification controls (gender, practice score, shop size).
- V represents village fixed effects, M is a dummy for midline survey round.
- Y_{1i} is the baseline value of the outcome of interest.
- Standard errors are clustered at the shop level across midline and endline.
- Coded missing control variables as zero and included dummy variables to indicate missing values.

Impact on Business Practices

Table 2: Business Practices Domain

	(1)	(2)	(3)	(4)	(5)	(6)
	Aggregate of All Practices	Record Keeping	Planning	Stocking Up	Marketing	Joint Decision Making
Assigned Handbook	0.008	0.025	0.028	-0.007	-0.010	0.011
	(0.013)	(0.017)	(0.022)	(0.019)	(0.022)	(0.027)
	0.157	*0.127*	*0.167*	*0.290*	*0.290*	*0.290*
Assigned Handbook & Movie	0.042***	0.058***	0.044*	0.038*	0.042	0.039
	(0.013)	(0.018)	(0.021)	(0.020)	(0.023)	(0.028)
	0.002	*0.009*	*0.071*	*0.086*	*0.103*	*0.142*
Assigned Handbook & Counseling	0.034***	0.065***	0.034	0.011	0.039	0.037
	(0.013)	(0.018)	(0.021)	(0.019)	(0.023)	(0.027)
	0.006	*0.005*	*0.111*	*0.290*	*0.111*	*0.152*
Assigned All Three	0.054***	0.054***	0.068***	0.053**	0.061**	0.059*
	(0.013)	(0.017)	(0.022)	(0.019)	(0.024)	(0.027)
	0.001	*0.009*	*0.009*	*0.017*	*0.026*	*0.070*
R-squared	0.308	0.205	0.193	0.187	0.152	0.120
N	2205	2205	2204	2205	2205	2205
Dependent Variable Mean in Control Group	0.337	0.196	0.402	0.471	0.250	0.269
Dependent Variable SD in Control Group	0.189	0.252	0.310	0.270	0.320	0.420
F-test (p-value): Book = Book & Movie	0.008	0.063	0.464	0.013	0.024	0.305
F-test (p-value): Book = Book & Counseling	0.040	0.026	0.769	0.307	0.032	0.346
F-test (p-value): Book = All Three	0.000	0.104	0.078	0.001	0.002	0.082
F-test (p-value): Book & Movie = Book & Counseling	0.539	0.701	0.629	0.144	0.885	0.928
F-test (p-value): Book & Movie = All Three	0.363	0.826	0.276	0.421	0.451	0.488

Impact on Profits and Sales

Table 3: Business Performance Domain

	(1)	(2)	(3)
	Performance Domain Z-Score	Estimated Profits Last Month (win 5%)	Sales Last Month (win 5%)
Assigned Handbook	-0.038	-90.194	-384.190
	(0.029)	(78.342)	(312.447)
	0.153	*0.162*	*0.162*
Assigned Handbook & Movie	0.030	113.842	365.202
	(0.031)	(86.829)	(336.910)
	0.200	*0.162*	*0.162*
Assigned Handbook & Counseling	0.100**	309.980***	835.637**
	(0.033)	(89.633)	(373.159)
	0.011	*0.005*	*0.047*
Assigned All Three	0.074**	190.267**	803.081**
	(0.032)	(84.814)	(357.874)
	0.034	*0.047*	*0.047*
R-squared	0.399	0.180	0.493
N	2197	2172	2197
Dependent Variable Mean in Control Group	-0.123	894.544	4998.923
Dependent Variable SD in Control Group	0.481	1127.783	5623.257
F-test (p-value): Book = Book & Movie	0.026	0.018	0.017
F-test (p-value): Book = Book & Counseling	0.000	0.000	0.000
F-test (p-value): Book = All Three	0.000	0.001	0.000
F-test (p-value): Book & Movie = Book & Counseling	0.037	0.043	0.203
F-test (p-value): Book & Movie = All Three	0.182	0.409	0.221

Impact on Expenses

Table 4: Business Expenditure Domain

	(1)	(2)	(3)	(4)	(5)	(6)
	Total Expenses Last Month (win 5%)	Stocking Up (win 5%)	Wages (win 5%)	Rent (win 5%)	Electricity (win 5%)	Transport (win 5%)
Assigned Handbook	-110.180	-97.514	-2.385	-6.854	1.957	0.348
	(253.384)	(249.141)	(1.593)	(5.005)	(3.508)	(2.199)
	1.000	*1.000*	*1.000*	*1.000*	*1.000*	*1.000*
Assigned Handbook & Movie	154.728	128.388	-1.293	-1.342	3.266	0.074
	(283.544)	(278.493)	(1.905)	(4.893)	(3.397)	(2.231)
	1.000	*1.000*	*1.000*	*1.000*	*1.000*	*1.000*
Assigned Handbook & Counseling	174.898	188.687	2.784	-1.271	5.955*	-0.048
	(294.527)	(284.571)	(2.120)	(4.986)	(3.394)	(2.112)
	1.000	*1.000*	*1.000*	*1.000*	*1.000*	*1.000*
Assigned All Three	334.029	321.822	-1.620	-3.085	-0.685	-0.342
	(290.281)	(287.664)	(1.601)	(4.763)	(3.373)	(2.156)
	1.000	*1.000*	*1.000*	*1.000*	*1.000*	*1.000*
R-squared	0.532	0.535	0.314	0.628	0.285	0.223
N	2188	2183	2187	2187	2172	2180
Dependent Variable Mean in Control Group	4287.789	4093.664	7.072	51.573	66.853	30.601
Dependent Variable SD in Control Group	4811.178	4702.590	30.335	90.935	50.646	29.975
F-test (p-value): Book = Book & Movie	0.303	0.367	0.582	0.220	0.717	0.901
F-test (p-value): Book = Book & Counseling	0.294	0.271	0.017	0.222	0.275	0.849
F-test (p-value): Book = All Three	0.097	0.111	0.646	0.380	0.467	0.743
F-test (p-value): Book & Movie = Book & Counseling	0.946	0.833	0.093	0.987	0.454	0.954
F-test (p-value): Book & Movie = All Three	0.542	0.504	0.868	0.678	0.264	0.846

Impact on Other Business Dimensions

Table 5: Mechanisms Domain

	(1)	(2)	(3)	(4)
	Mechanism Domain Z-Score	Shop Size in Square Meters	Total Number of Employees	Total Number of Customers
Assigned Handbook	-0.007	-0.129	0.013	-0.351
	(0.038)	(0.666)	(0.086)	(2.452)
	1.000	*1.000*	*1.000*	*1.000*
Assigned Handbook & Movie	0.035	0.132	0.076	1.077
	(0.039)	(0.676)	(0.083)	(2.212)
	1.000	*1.000*	*1.000*	*1.000*
Assigned Handbook & Counseling	0.066	0.934	0.130	0.635
	(0.041)	(0.716)	(0.079)	(2.421)
	0.764	*1.000*	*1.000*	*1.000*
Assigned All Three	0.021	0.388	0.010	1.456
	(0.038)	(0.635)	(0.084)	(2.414)
	1.000	*1.000*	*1.000*	*1.000*
R-squared	0.365	0.357	0.227	0.336
N	2205	2204	2205	2203
Dependent Variable Mean in Control Group	-0.049	12.856	1.954	40.232
Dependent Variable SD in Control Group	0.551	9.235	1.150	35.578
F-test (p-value): Book = Book & Movie	0.297	0.702	0.468	0.573
F-test (p-value): Book = Book & Counseling	0.084	0.135	0.167	0.724
F-test (p-value): Book = All Three	0.465	0.414	0.976	0.511
F-test (p-value): Book & Movie = Book & Counseling	0.475	0.258	0.513	0.862
F-test (p-value): Book & Movie = All Three	0.732	0.685	0.442	0.877

Mechanisms

Efficiency Gains or Just Better Record-Keeping?

1. Shop owners do not only improve record-keeping, but also improve other practices leading to efficiency gains. E.g:
   - Adjust stocks based on product profitability
   - Negotiate lower prices with suppliers
   - Consult with former customers
   - Offer discounts
   - Make joint decisions
   - Review financial performance to identify channels of improvement
   - Target vs actual sales
   - Draft agreements with business partners
2. The variance in profits among the treated businesses does not converge.
3. Causal-mediation analysis shows that the most important drivers of impact on sales and profits are stocking up and marketing practices.

→ Efficiency gains

Knowledge or Aspirations?

- Our interventions could have increased business performance and practice adoption through an increase in business aspirations rather than (or on top of) business knowledge.
- We directly measure business aspirations at baseline, midline, and endline for all shop owners in the sample.
- We elicit short (one year) and long-term (ideal) aspirations on various business dimensions:
  - sales
  - shop size
  - number of customers
  - number of employees
- No treatment effect of any treatment on aspirations

→ Knowledge

Real Adoption of Practices or Self-Reporting Bias?

Do treated shop owners misreport higher adoption rates, sales and profits (e.g. due to **desirability bias**)?

1. **No evidence for self-reporting bias with similar samples** and with interventions more prone to this bias a-priori (Bruhn et al, 2018; Cai & Szeidl, 2018)
2. No treatment effect on **placebo** practices NOT mentioned in the handbook.
3. No treatment effects in **handbook** alone.
4. Treated firms are **not more likely to report sales and profits**.
5. Treatment effects on **observable** measures recorded by the enumerator. E.g:
   - Shop is well-stocked
   - Prices are clearly marked

→ No evidence for self-reported bias

Business Stealing?

Do treated businesses improve performance at the expense of the control group?

- Shops in Control group **do not decrease** their sales and profits from baseline to endline. They remain the same.
- Shops in Control group that are closer to the treated shops **do not suffer bigger losses in sales and profits** than those who are further away.

→ No evidence for business stealing

Why is the Handbook Alone not Enough?

Appendix Table A9: Analysis by Education Level

	(1)	(2)	(3)	(4)	(5)	(6)
	Management Practices Aggregate Score			Estimated Profits Last Month (win 5%)		
	Primary or Less	Primary to High School	More than High School	Primary or Less	Primary to High School	More than High School
Assigned Handbook	0.005	0.029	-0.000	-14.063	-69.089	-82.545
	(0.019)	(0.025)	(0.017)	-118.893	-162.054	-105.952
Assigned Handbook & Movie	0.081***	0.062**	0.013	162.090	70.891	112.621
	(0.019)	(0.028)	(0.017)	-132.617	-191.460	-115.741
Assigned Handbook & Assistance	0.031	0.052**	0.025	459.720***	312.219**	311.068***
	(0.021)	(0.024)	(0.017)	-148.847	-146.617	-116.196
Assigned All Three	0.089***	0.039	0.036**	309.754**	93.253	214.238*
	(0.019)	(0.027)	(0.017)	-144.497	-174.046	-111.344
R-squared	0.322	0.319	0.322	0.190	0.284	0.195
N	661	468	1076	653	462	1057
Dependent Variable Mean in Control Group	0.281	0.325	0.388	840.559	939.636	917.854
Dependent Variable SD in Control Group	0.167	0.175	0.198	998.037	1.021.182	1.266.246
F-test (p-value): Book = Book & Movie	0.000	0.260	0.424	0.210	0.491	0.072
F-test (p-value): Book = Book & Assistance	0.231	0.348	0.125	0.002	0.023	0.001
F-test (p-value): Book = All Three	0.000	0.717	0.026	0.038	0.387	0.005

Notes: This table presents impact analysis (Intent-to-Treat) for three different sub-samples with grouped by educational attainment. Regressions use an ANCOVA specification, where a midline survey round dummy, baseline value of the outcome variable as well as stratification controls are included on RHSs and standard errors are clustered at retailer level. Statistically significant p-values are highlighted by: * (10% significance level), ** (5% significance level), and *** (1% significance level).

- Lack of comprehension was likely not a barrier to the null effects of the handbook.

Cost-Effectiveness

- **Low cost** per firm:
  - Cost Handbook alone: USD 100
  - Cost Handbook & Movie: USD 125
  - Cost Handbook & Counseling: USD 125
  - Cost Handbook & Counseling & Movie: USD 150
- **High Benefits**
  - Up to USD 330 per month in profits.
  - Adoption of top practices by retailers.
- Research Design **scalable and replicable** in other settings.

Takeaways

- It is **possible** to stimulate **efficiency among small firms by harnessing and curating locally relevant knowledge**.
- **The delivery mechanism** of this information is critical.
- **Useful knowledge is context dependent, but not atomistic**.
- The idea of curating best practices can be **translated to other settings** (e.g. education, health, government, academia)

Appendix

Associating practices with profits and sales

ATTRACTING CUSTOMERS

Businesses whose owners introduced at least five new products within the last three months before the survey have monthly sales that are 35% higher and monthly profits that are 28% higher compared to businesses which introduce less products.

Shop owners who decide to get back to former customers to see the reasons why they quit buying at their shop have monthly sales 24% higher than the sales of businesses whose owners just let it go. Their monthly profits are also 23% higher.

Business which use discounts to attract new and retain loyal customers have monthly sales that are 40% higher than the sales of businesses which do not give discounts. Also, their monthly profits are 29% higher.

JOINT DECISION MAKING

Shop owners who said they jointly made decisions with others on any business matter whatsoever had monthly sales which were 25% higher and monthly profits which were 27% higher than those of shop owners who did not want to consult with others.

If decisions were made together on the topic of which new products to introduce next, monthly sales were by 30% higher and monthly profits by 35% higher.

Shop owners who decide on whether to try out at least one new practice in the shop had monthly sales 26% higher and monthly profits were 27% higher than those who insist to make decisions alone.

Figure: Practice-Profits relationship information on specific practices

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How did we quantify the association of practices with performance?

- Cross-section analysis with performance and practices measured at baseline

$$Y_{i1} = \beta P_{i1} + \gamma X_{i1} + \epsilon_i \tag{1}$$

  - Y_{i1}: 8 different proxies for firm performance (sales/profits, customers)
  - P_{i1}: Sub-sets of practices (e.g., marketing practices from M&W, 2016)
  - X_{i1}: Controls for firm size and number of employees

- **Most consistent predictors** of performance
  $\rightarrow$ Cut-off: Regressor significant in at least 6 of the 8 specifications

- **Largest effect sizes** on returns to adoption
  $\rightarrow$ Cut-off: Highest 25th percentile in distribution of all effect sizes

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Practices Associated with Sales and Profits

Table: Practices which baseline regression coefficients were mentioned in the HB

Tilte of the Practice	Numer of significant specifications at baseline	OLS Coefficient mentioned in Handbook	
		Monthly Sales	Montly Profits
Marketing			
Asks former customers why they quit buying	7	0,245	0,226
Gives any discount	8	0,401	0,294
Stocking up			
Stocks up late for any of top 3 products	8	-0,25	-0,26
Has fixed stock-up schedule for top 3 products	6	0,263	0,247
Stocks up top 3 at most weekly	8	-0,483	-0,366
Record-keeping			
Keeps written business records	7	0,283	0,259
Can use records to service potential loan	8	0,351	0,358
Records outstanding payments by customers	7	0,401	0,361
Calculates profits considering all costs	8	0,418	0,445
Financial Planning			
Introduced at least 5 new products	8	0,354	0,279
Joint Decision-making			
Discusses business matters with anyone	8	0,253	0,272
Joint decisions on new products	8	0,299	0,345
Joint decisions on business practices	8	0,256	0,27

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Misconceptions

Chapter 1: Reccord Keeping

Misconception	HB Response
Some people think keeping records is difficult for people without higher education.	In our survey, those who keep records of their daily transactions varied widely in their educational background.
Some people think keeping records is complicated.	We will show you easy steps to take in order to keep track of your daily transactions
Many people believe they know their profits, know how much to reinvest, and how much to spend.	In our research we learned that many shop owners did not have a good idea of their business performance.
Some people think that one cannot prepare for unexpected events since nobody can predict the future.	Record keeping is a good example of how you can, in fact, prepare yourself. It makes sense to save up for large bills which arrive periodically, for instance, electricity and telephone bills, as well as rental costs and taxes.
Some people think keeping records is a lot of work and yields no benefits.	We will show you that once you know how to do it and how to integrate it into your everyday routines, record-keeping is a lot easier than it might first seem. In our survey, we found that a majority of people confuse business sales with profits. As a consequence, they may end up spending more than they actually have and thus risk running into financial trouble.

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Other reasons

Reasons to Adopt the Practice
It is what differentiates successful businesses from those with less success.
Once you do record-keeping, you will know exactly how much you make per day, how much you can reinvest in your shop, how much you can save, and how much you can spend on you and your family.
Without savings, unexpected events can hit you and your family hard.
It allows you to take full control over all business decisions.
It helps keeping household and business finances separate.
You will be better able to save up and withstand unexpected events.
It is essential when borrowing from banks, money lenders, and family. Often, the only way to convince a potential lender is by showing them a written record of how your business is performing. Keeping records of your daily sales and weekly or monthly profits does just that. It gives you proof of how well your shop is performing and that the money will be paid back in time.

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Dealing with electricity uncertainty: vouchers

Dealing with electricity bills (vouchers)

Dealing with bills which come in less than daily can be inconvenient. You may not know exactly when you will have to pay precisely how much. So, you are either left with uncertainty and the hope to be able to pay or you struggle setting aside money (we will come back to this in: calculating profits, extra step).

Since you may have some control over your payments for transport and stock-up, **electricity bills may entail the biggest uncertainty.** Here, it will be useful to think about switching to the voucher system. Frequently used all over Jakarta, both by households and businesses, **the voucher system allows you to top up your electricity balance when you want with just how much you want.** Also, it is convenient in that you can pay via your smart-phone.

Do not worry in case you do not own a smart-phone, though! You may as well top up in your local mini market (Indomaret, Alfamart). Just ask at your local **PLN office!**

Dealing with sales forgotten to jot down

Tips & trick

Dealing with sales you forgot to jot down

It is only human to sometimes forget to jot down one sale or another. Whenever you realise you have, just leave as many lines free as you remember transactions that you forgot to pin down and fill in all the information you remember. For instance, the product name and the unit (e.g. "Shampoo, 25ml sachets"). Should you not remember anything, simply leave one single line empty and carry on.

Do keep in mind, though, that if you did not receive/pay the money on the spot ("paying later"), there is no way of knowing how much money the transaction was worth. Unless, of course, you remember the exact amount of goods. With the method shown here, only transactions which actually took place can be recovered.

In order for it to be realistic, in this example, let's assume you have IDR 1 million as the beginning balance from the day before. Now, when you get to the end of the page, simply take the day's beginning balance (first row of the day) and add on to it all cash-in entries (third column), leaving out all entries with brackets around them.

Introducing new products with discount

As mentioned above (False beliefs about retaining customers and special offers), oftentimes big companies will make special conditions **for a small quantity of a new product for the first weeks**. This is because they are interested in testing the product's viability on the market just as you are interested in testing it in your shop. Hence, do take advantage of that situation and place a small quantity well-visible in your shop!

Should you moreover get a better price, **it is a good idea not to pocket the difference as your mark-up but to give it back to the customer in order to make the product known in its first weeks**. If the price does not differ, you may still think about a discount for this small quantity, simply to see whether there is any chance this product will be successful. If after weeks it is not, it is completely fine to directly discontinue it.

Recording stock-outs: tallies

Thursday, 1 September, 2016					
Rank	Products	Unit	Stock-outs		
1	Soy sauce	135ml bottle	||||		
2	Drinking water (gallon)	19l gallon	|		
3	Cigarettes	Packs			
4	Condensed milk	360ml cans	|||||||		
5	Shampoo	Sachets			
...					

In fourth column you will keep the tallies for stock-outs of all your main products. Hence, whenever a customer

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Handbook: Step-by-step implementation guidelines

A step-by-step guide to record-keeping

Step 1: Separating household and business finances

The best way to start keeping records is by establishing a clear separation between your personal and business finances. We do not mean this in the strictest sense of keeping your business cash away from your personal life completely, rather we advise you to not lose sight of your cash flow.

The most convenient and effective way to separate your personal and business finances is by **physically separating the funds into two different cash boxes, purses, or drawers**. **Label them clearly;** use one compartment for business purposes and another for personal.

Use only your business compartment to follow this handbook from this point forward. Make sure that money in your business compartment is used only for business purposes. Be meticulous about it - this is the first step to get your finances organized!

There is an activity at the end of this section that requires an additional compartment. If you have one more cash box, purse, or drawer available, please reserve it for this activity (record-keeping, extra step).

Figure: Step-by-step guide to implementing specific practices as part of broader practice categories

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