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Article

Effectiveness of Consulting Services for Small Business Development: Survey Evidence from Namangan Region, Uzbekistan

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Abstract: Small businesses generate 73.6% of the gross regional product of Namangan region, yet the returns to the business consulting they buy have not been measured. This study evaluates the effectiveness of consulting services for small businesses and identifies the barriers to their use. A survey of 200 small business owners was conducted in October 2026 across all 12 cities and districts; 111 respondents had used consulting in 2024–2025 and 89 had not. Effectiveness was assessed with a self-reported return on investment (ROI), a difference-in-differences comparison, ordinary least squares (OLS) regression, a logit model of consulting take-up and an entropy-weighted integral effectiveness index. The aggregate self-reported ROI was 140.6%, while the accounting records of a consulting firm gave a more conservative 110.1%. Consulting users grew revenue 7.4 percentage points and employment 16.6 percentage points faster than non-users; with controls the effects were 6.6 and 13.5 points ($p < 0.001$). The mean integral index was 0.459, so effects were uneven across firms. Lack of information about state support was the strongest barrier, reducing take-up probability by 12.1 points per scale point. A partially state-funded consulting voucher is shown to yield 1.29–2.07 UZS of additional profit per UZS of public funds.

Keywords: business consulting; small business; return on investment; difference-in-differences; integral index; entropy method; consulting voucher; barriers; Uzbekistan

1. Introduction

Small businesses are the backbone of the economy of Namangan region. In 2025 they created 61,824.8 billion UZS of value added, or 73.6% of the gross regional product (GRP), against a national average of 52.2% [1]. As of 1 January 2026 the region had 22,471 small enterprises and micro-firms, 82.9% of all operating enterprises, and their number grew by 15.0% in one year [2]. Rapid entry of new firms, frequent changes in tax and reporting rules and the growing digitalisation of public services increase the demand of small entrepreneurs for professional advice. In December 2025 the state introduced a system of comprehensive public, professional and consulting services for entrepreneurs through «Business Hamroh» centres [3].

The rationale for external advice is well established. Transaction cost theory explains why a firm buys specialised knowledge on the market instead of developing it internally [4], [5]. The resource-based view treats managerial knowledge as a source of sustained competitive advantage that small firms usually

lack [6]. Management consulting is therefore defined as an independent advisory service that helps owners identify and solve business problems and implement change [7]. Small firms face this knowledge gap most acutely, because the owner combines strategic, financial and operational roles [8].

Empirical studies show that the effect of advice is real but uneven. In Britain, Bennett and Robson found that external advice is widely used by SMEs, and that its use and perceived impact rise with firm size and growth orientation [9]. Robson and Bennett linked the use of advice from private consultants to faster employment growth [10]. Evaluations that correct for selection bias report more modest effects: Wren and Storey found that soft business support raised the survival and growth of only part of the assisted firms [11]. Mole et al., using data on more than 3,000 English firms, showed that intensive assistance increased employment, while light-touch advice had no significant effect on growth [12]. Cumming and Fischer found that publicly funded advisory services improved sales and alliances of young Canadian firms [13].

The strongest evidence comes from randomised trials. In Puebla, Mexico, small and medium enterprises that received subsidised consulting raised productivity and return on assets in the short run, and after five years employed 57% more workers and had a 72% larger wage bill than the control group [14]. Bloom et al. found that free management consulting raised the productivity of Indian textile plants by about 17% in the first year [15]. The final evaluation of the British Help to Grow: Management programme also applied matched comparison groups to measure programme impact [16]. Several countries subsidise the purchase of private consulting by small firms through vouchers or matching grants, for example the KOSGEB business development support in Turkey [17] and the innovation voucher of the Korean Ministry of SMEs and Startups [18].

In Uzbekistan the effectiveness of consulting for small businesses is usually judged by the number of consultations delivered, not by the results of client firms. Three gaps remain. First, there are no firm-level estimates of the return on consulting for small businesses in the regions of Uzbekistan. Second, the barriers to the use of consulting have been ranked by their severity, but not by their actual effect on the take-up decision. Third, a partially state-funded mechanism for buying private consulting has not been designed or costed.

The aim of this study is to evaluate the effectiveness of consulting services for small businesses in Namangan region and to justify measures that raise it. The paper contributes in three ways. It proposes an evaluation framework that combines a consulting ROI, a difference-in-differences estimate and an entropy-weighted integral effectiveness index. It separates the severity of each barrier from its marginal effect on the probability of using consulting. It uses these estimates to cost a consulting voucher programme and test its sensitivity to deadweight.

1. Materials and Methods

Data. The empirical base is a survey of small business owners conducted by the author in October 2026 in Namangan region. The questionnaire covered firm characteristics, the use, cost and providers of consulting in 2024–2025, revenue, employment and profit in 2024 and 2025, self-assessed results of consulting, nine barriers to consulting rated on a 1–5 scale, and attitudes to a consulting voucher. The sample includes 200 entrepreneurs from all 12 cities and districts and nine types of activity: trade (22.5%), manufacturing (14.0%), construction (12.5%), agriculture (12.0%), other services (12.0%) and others. By the Yamane formula [19], 200 observations correspond to a margin of error of about ±7% for a population of 22,471 small businesses.

Of the respondents, 111 (55.5%) used paid consulting in 2024–2025 (the treatment group) and 89 (44.5%) did not (the control group). Before treatment the groups were comparable. Mean revenue in 2024 was 4,078.7 million UZS among users and 3,883.7 million UZS among non-users; mean employment was 31.2 and 32.0 persons. Neither difference was significant ($p = 0.60$ and $p = 0.74$). Users were

somewhat older firms (12.6 against 11.0 years, p = 0.046), which is controlled for in the regressions.

Consulting ROI. Following the cost–benefit approach and the Kirkpatrick–Phillips evaluation hierarchy [20], [21], the return on consulting for firm *k* is

$$ROI_k = \frac{\Delta P_k - Z_k}{Z_k} \times 100\% \qquad (1)$$

where ΔP is the additional profit or cost saving attributed by the owner to consulting recommendations and Z is the total consulting expenditure. The aggregate ROI is computed from the sums of ΔP and Z over all users.

Difference-in-differences. Self-reported ROI is likely to overstate the effect. The net effect is therefore estimated by comparing the change in the outcomes of users with that of non-users [22]:

$$\Delta E = (Y_1^T - Y_0^T) - (Y_1^C - Y_0^C) \qquad (2)$$

where Y is the mean revenue or employment of the treatment (T) and control © groups in 2024 (0) and 2025 (1). Differences in growth rates are tested with Welch's t-test.

Regression with controls. To account for observable differences between firms, growth is regressed on a consulting dummy and controls:

$$g_i = \beta_0 + \beta_1 K_i + \sum_{j=2}^{8} \beta_j Z_{ij} + \varepsilon_i \qquad (3)$$

where g is the 2025/2024 growth of revenue (or employment) in %, K equals 1 for consulting users, and Z are the controls: log employment in 2024, firm age, the owner's higher economic education, trade and manufacturing dummies, exporting and location in the regional centre. The model is estimated by OLS with heteroskedasticity-robust (HC1) standard errors [23].

Barriers to consulting. A high mean score does not mean that a barrier actually prevents firms from using consulting. The probability of use is therefore modelled with a binary logit:

$$P(K_i = 1) = \frac{1}{1 + e^{-(\alpha_0 + \sum_{m=1}^{9} \alpha_m D_{im} + \sum_j \theta_j Z_{ij})}} \qquad (4)$$

where D is the respondent's 1–5 rating of barrier *m* and Z are firm size, the owner's education and location. Average marginal effects show the change in the probability of use, in percentage points, when a barrier rating rises by one point.

Integral effectiveness index. Eleven indicators in five groups (financial, operational, market, social and quality) are first igitaliza to the range 0–1:

$$x_i = \frac{p_i - p_i^{\min}}{p_i^{\max} - p_i^{\min}} \qquad (5)$$

The index for each firm is the weighted sum of group means:

$$I_{KS} = \sum_{j=1}^{m} w_j \cdot \frac{1}{n_j} \sum_{i=1}^{n_j} x_{ij}\,, \qquad \sum_{j=1}^{m} w_j = 1 \qquad (6)$$

The weights are derived with the entropy method, based on Shannon's information entropy [24], so that groups that vary more across firms receive more weight and no subjective expert scoring is needed: p_ij = G_ij / ΣG_ij; e_j = −(1 / ln n) · Σ p_ij ln p_ij; w_j = (1 − e_j) / Σ(1 − e_j). As a robustness check the index is also computed with prior weights (financial 0.30, operational 0.15, market 0.20, social 0.15, quality 0.20). Index values of 0.75–1.00 are read as high, 0.50–0.74 as medium, 0.25–0.49 as low and below 0.25 as ineffective.

Field test. The method was also applied to the accounting records of TRADE IMPEX LLC, a consulting and accounting firm in Mingbulak district that serves small businesses. Twenty-four of its clients are among the survey respondents.

3. Results

3.1. Use of consulting and self-reported returns

The use of consulting differs sharply across sectors and districts. It reaches 80.0% in construction, 75.0% in accommodation and food services and 67.9% in manufacturing, but only 42.2% in trade. By district, use ranges from 76.9% in Namangan district to 33.3% in Yangikurgan district. Users most often received

advice on marketing and sales (39.6%), human resources (36.9%), business plans and credit (36.0%) and IT and igitalization (36.0%). The main providers were the Chamber of Commerce and Industry (36.0% of users) and online platforms (34.2%). All 111 users paid for the service: 88 fully from their own funds and 23 (20.7%) with partial state funding. Mean two-year consulting spending was 11.9 million UZS per firm.

Table 1. Economic results of consulting reported by users (n = 111)

Indicator	Value
Total consulting expenditure, million UZS	1,320.6
Total additional profit or saving (ΔP), million UZS	3,177.5
Aggregate consulting ROI, %	140.6
Mean / median ROI, %	135.1 / 130.0
Mean reduction of unit cost, %	7.5
Credit, grants and investment raised with consulting help, million UZS	7,096.2
Jobs created as a result of consulting	456
Share of firms that entered a new market, %	38.7
Satisfaction with the service (1–5)	3.94
Share of users who would recommend the service, %	72.1

Source: author's survey and calculations.

By formula (1) the aggregate ROI was 140.6%: each UZS spent on consulting returned 2.41 UZS of additional profit or savings. Funds raised with consulting help were 5.4 times larger than consulting costs. Owners' self-assessed management competence rose from 3.41 to 4.29 points (paired $t = 10.68$, $p < 0.001$). However, every respondent reported a positive ROI, which signals optimism bias. In the accounting records of TRADE IMPEX LLC the mean ROI over 32 client firms was 110.1%, or 30.5 percentage points lower than the survey estimate.

3.2. Net effect of consulting

Table 2. Net effect of consulting on small business performance (difference-in-differences)

Indicator	Users 2024	Users 2025	Non-users 2024	Non-users 2025	Net effect (ΔE)	Welch t (p)
Mean revenue, million UZS	4,078.7	4,827.7	3,883.7	4,263.3	+369.3	4.12 (< 0.001)
Mean revenue growth, %	—	17.9	—	10.5	+7.4 p.p.	4.90 (< 0.001)
Mean employment, persons	31.2	36.2	32.0	35.1	+2.0	—
Mean employment growth, %	—	30.6	—	14.0	+16.6 p.p.	3.83 (< 0.001)

Source: author's calculations.

Revenue of users grew by 17.9% against 10.5% for non-users. The net effect was 7.4 percentage points, or 369.3 million UZS of additional revenue per firm. The gap in employment growth was larger, at 16.6 percentage points. All differences are significant at the 0.1% level.

Table 3. OLS estimates of the effect of consulting on firm growth (n = 200, HC1 standard errors)

Variable	Revenue growth: coef.	p	Employment growth: coef.	p
Constant	7.79	0.029	106.11	< 0.001
Consulting use (K)	6.60	< 0.001	13.46	< 0.001
Log employment, 2024	0.36	0.717	−28.49	< 0.001
Firm age, years	0.29	0.037	0.04	0.891
Owner has higher economic education	−1.82	0.274	7.57	0.036
Trade	−4.26	0.027	4.87	0.226

Variable	Revenue growth: coef.	p	Employment growth: coef.	p
Manufacturing	−0.37	0.886	−0.43	0.923
Exporter	1.76	0.416	−10.51	0.028
Located in the regional centre	0.81	0.778	−16.79	0.018
R^2	0.156	—	0.490	—
F-statistic	4.42	< 0.001	22.95	< 0.001

Source: author's calculations.

With controls, consulting users grew revenue 6.6 and employment 13.5 percentage points faster ($p < 0.001$). These estimates are close to, and slightly below, the difference-in-differences results. About 10–20% of the raw gap is therefore explained by firm characteristics, and most of it by consulting. Smaller firms grew employment faster, and trade firms grew revenue 4.3 points more slowly than other sectors. Among users, ROI did not depend significantly on the share of implemented recommendations, the number of contacts, spending, the type of provider or the owner's education ($F = 1.51$, $p = 0.17$).

3.3. Barriers to the use of consulting

Table 4. Severity of barriers and their effect on the probability of using consulting (n = 200)

Barrier	Mean score (1–5)	Non-users	Users	Logit coef.	p	Marginal effect, p.p.
No information about state support	3.44	3.91	3.05	−0.771	< 0.001	−12.1
Benefit cannot be predicted	3.44	3.75	3.19	−0.538	0.001	−8.4
High price of the service	3.45	3.72	3.23	−0.536	0.002	−8.4
Lack of time	3.44	3.76	3.17	−0.529	0.002	−8.3
Do not know where to apply	3.36	3.67	3.10	−0.467	0.005	−7.3
Distrust of consultants' competence	3.39	3.57	3.23	−0.296	0.067	−4.6
Providers are far away	3.15	3.37	2.97	−0.243	0.102	−3.8
Advice is not needed	3.39	3.65	3.18	−0.155	0.366	−2.4
Fear of disclosure of firm data	3.55	3.70	3.43	−0.080	0.624	−1.2

Source: author's calculations. McFadden pseudo-R^2 = 0.307; LR χ^2 = 84.4 ($p < 0.001$); 77.0% of cases correctly classified.

The barriers are close in severity: seven of nine scored between 3.36 and 3.55. Fear of disclosure of firm data scored highest (3.55) but had no significant effect on take-up ($p = 0.62$), because users and non-users expressed it almost equally. Lack of information about state support was the strongest barrier for non-users (3.91) and had the largest effect: a one-point rise in its rating lowers the probability of using consulting by 12.1 percentage points. Uncertainty of the benefit, price and lack of time follow, each with about 8 points. Distance to providers was not significant.

3.4. Integral effectiveness index

Table 5. Entropy weights, group indices and distribution of the integral index (n = 111)

Indicator group	Entropy (e)	Entropy weight (w)	Prior weight	Mean group index
Financial	0.992	0.072	0.30	0.493
Operational	0.964	0.314	0.15	0.552
Market	0.981	0.168	0.20	0.479
Social	0.962	0.332	0.15	0.333
Quality	0.987	0.114	0.20	0.514

Source: author's calculations.

The entropy method gave the largest weights to the social (0.332) and operational (0.314) groups. Firms differ most in job creation and cost reduction, while revenue growth and ROI are spread evenly. The mean index was 0.459 (median 0.442), at the upper edge of the low level. Two firms (1.8%) reached a high level, 37 (33.3%) a medium level, 67 (60.4%) a low level and 5 (4.5%) were ineffective. With prior weights the mean was 0.479 and the distribution barely changed, so the result is robust to the choice of weights. The index was similar for fully self-paid (0.461) and partially state-funded services (0.448).

3.5. Costing a consulting voucher

The survey shows demand for a voucher: 55.5% of respondents would use a private consultant if the state covered 50% of the cost, and another 27.0% if it covered 80% or more. Only 17.5% would not use a voucher. Respondents are willing to pay 11.5 million UZS a year for quality consulting, close to actual spending. A pilot voucher of up to 10 million UZS with a 50% state share (70% for start-ups, women- and youth-led firms and districts outside Namangan city) is therefore proposed. The annual budget is $B = N_v \times C \times \bar{s}$. With 1,000 vouchers, C = 10 million UZS and $\bar{s} = 0.55$ the budget is 5.5 billion UZS, or 4.5% coverage of small businesses.

Some vouchers will go to firms that would have bought consulting anyway. The additional profit per UZS of public funds, E_g, and the minimum additionality share that covers the public cost, a*, are

$$E_g = \frac{a \cdot (1 + ROI)}{\bar{s}}, \qquad a^* = \frac{\bar{s}}{1 + ROI} \qquad (7)$$

where a is the share of voucher recipients who would not use consulting without the voucher. In the survey, 43.0% of the 165 entrepreneurs willing to use a voucher had never used consulting, so a = 0.43 is taken as the base case.

Table 6. Sensitivity of the voucher effect (additional profit per 1 UZS of public funds)

ROI estimate	State share ($\bar{s}$)	a = 1.00	a = 0.43 (base)	Minimum additionality a*, %
140.6% (survey)	50%	4.81	2.07	20.8
140.6% (survey)	55%	4.37	1.88	22.9
140.6% (survey)	70%	3.44	1.48	29.1
110.1% (firm records)	50%	4.20	1.81	23.8
110.1% (firm records)	55%	3.82	1.64	26.2
110.1% (firm records)	70%	3.00	1.29	33.3

Source: author's calculations by formula (7).

Even under the most conservative assumptions (ROI 110.1%, state share 70%, additionality 43%) each UZS of public funds yields 1.29 UZS of additional profit. The programme covers its cost if only 21–33% of recipients are new users of consulting. Additionality is still the key driver: a fall from 1.00 to 0.43 more than halves the effect.

4. Discussion

The results confirm that consulting has a positive and significant effect on the growth of small businesses in Namangan region. The net effect on revenue growth (6.6–7.4 percentage points) and employment growth (13.5–16.6 points) is consistent with international evidence that advice works mainly through firm growth and job creation [12], [14]. The larger effect on employment than on revenue matches the five-year results of the Mexican trial [14]. It also agrees with the high entropy weight of the social group: job creation is where consulting outcomes differ most between firms.

Three methodological lessons follow. First, self-reported returns overstate the effect. The survey ROI (140.6%) exceeded the ROI from the consulting firm's records (110.1%) by about 30 points, and every respondent reported a positive return. Public programmes should therefore measure consulting outcomes with

documented indicators and a comparison group, as recommended by evaluations that correct for selection [11], [12]. Second, the average effect hides strong heterogeneity. Only 35.1% of users reached a medium or high integral index, so the mean effect is carried by about one third of firms. Third, the severity of a barrier is not the same as its effect. Data confidentiality was rated highest but did not change behaviour, while lack of information about state support reduced take-up the most. Ranking barriers by mean scores alone would misdirect policy.

These findings set the order of policy measures. The cheapest and fastest step is information: support measures, accredited consultants and voucher rules should be brought together on a single digital platform linked to the «Business Hamroh» centres. Distance was not a significant barrier and 65.5% of respondents accept online or blended advice, so digital channels are preferable to new district offices. The price barrier and the uncertainty of benefit can be addressed by a voucher with payment on completion and by measuring ROI before and after the service. Because subsidised services had the same integral index as self-paid ones, partial state funding does not appear to lower quality.

The main risk of a voucher is deadweight. Table 6 shows that the effect more than halves when additionality falls from 100% to 43%. Vouchers should therefore be targeted first at firms that have never used consulting and at districts with low coverage. When applications exceed funds, vouchers should be allocated by lottery. A lottery is fair and also creates a natural control group, so the programme can be evaluated with the rigour of a randomised trial [14], [15].

The proposals have been tested in practice. The integral index was used by the Namangan regional office of the Chamber of Commerce and Industry of Uzbekistan to assess the consulting results of 35 member firms in 2026, and by TRADE IMPEX LLC to assess 32 client firms. The voucher and platform proposals were included in the regional office's proposal package for 2027.

The study has limitations. Outcomes and consulting effects are self-reported and recalled for two years, which may introduce optimism and recall bias. The difference-in-differences design assumes parallel trends, and the regression controls only for observable characteristics; unobserved factors such as owner motivation may remain. The survey covers one region and one period. Future research should use tax and social insurance records, panel data over several years and, where possible, randomised allocation of vouchers.

5. Conclusions

Consulting services raise the performance of small businesses in Namangan region. Users grew revenue 6.6–7.4 percentage points and employment 13.5–16.6 points faster than comparable non-users, and each UZS spent on consulting returned 2.1–2.4 UZS. The effect is uneven: the mean integral effectiveness index was 0.459, and only one third of users reached a medium or high level.

The main obstacle to wider use is not a lack of need but a lack of information about available support, followed by uncertainty of the benefit, price and lack of time. The proposed framework, which combines ROI, difference-in-differences and an entropy-weighted integral index, allows consulting providers and public agencies to judge services by client results rather than by the number of consultations. A partially state-funded consulting voucher is economically justified: under conservative assumptions it yields at least 1.29 UZS of additional profit per UZS of public funds, provided that at least 21–33% of recipients are new users of consulting.

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