

American Journal of Economics and Business Management

Vol. 9 Issue 11 | **pp.** 387-395 | **ISSN:** 2576-5973
Available online @ https://www.globalresearchnetwork.us/index.php/ajebm

Article

Reducing Employee Turnover in the Tourism Sector Through Human Resource Technologies

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Abstract: Employee turnover is a persistent cost and quality problem in tourism and hospitality, and the sector is expected to face labour shortages as demand grows. Human resource (HR) technologies, such as digital recruitment, e-onboarding, scheduling applications, pulse surveys and people analytics, are increasingly proposed as retention tools, but their use is rarely grounded in turnover theory or tested with sound evaluation designs. This article develops a lifecycle-based conceptual framework that links HR technologies to the psychological mechanisms identified in turnover research (satisfaction, job embeddedness, work–life balance and perceived fairness) and to turnover intention, actual turnover and its costs. The study combines a purposive synthesis of 13 scholarly sources with a descriptive reading of published secondary data from the World Travel & Tourism Council, the U.S. Bureau of Labor Statistics and earlier hotel turnover-cost studies, supplemented by Uzbekistan-focused evidence. The data show that the accommodation and food services sector in the United States has had a markedly higher separation rate than the economy as a whole (5.5 versus 3.3 in 2025), that the WTTC projects a global travel and tourism labour shortfall of more than 43 million workers by 2035, and that hotel studies estimate the cost of a single turnover event at roughly 27–30% of the position's total salary. The article derives five testable propositions, a measurement scheme and a staged evaluation design. The propositions are not empirically tested here, and the evidence from Uzbekistan on HR technology in tourism is currently very limited.

Keywords: employee turnover; employee retention; HR technology; people analytics; tourism and hospitality; job embeddedness; Uzbekistan.

Citation: Ravshanovich, M. J. Reducing Employee Turnover in the Tourism Sector Through Human Resource Technologies . American Journal of Economics and Business Management 2026, 9(11), 387-395.

Received: 10th Oct 2026
Revised: 11th Oct 2026
Accepted: 24th Oct 2026
Published: 10th Nov 2026

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1. Introduction

Tourism is a labour-intensive service industry in which the quality of the guest experience depends on the people who deliver it. The World Travel & Tourism Council (WTTC) reports that travel and tourism supported a record 357 million jobs worldwide in 2024, forecasts 371 million for 2025, projects 91 million new roles over the next decade and warns that labour demand could outpace supply by more than 43 million people by 2035 [1]. For hospitality alone the projected gap is 8.6 million workers, about 18% below required staffing levels [1]. In such a market, losing trained employees is expensive and hard to reverse.

Turnover is also visible in labour statistics. In the United States, the average monthly total separations rate in accommodation and food services was 5.5 in 2025, compared with 3.3 for all industries [2]. Total separations include voluntary quits, layoffs and other exits, so they are not a pure measure of voluntary turnover; they nevertheless indicate that the

sector has a persistently higher level of labour movement. Hotel studies have shown that the financial consequences are larger than managers typically assume [3, 4].

Uzbekistan illustrates why the question matters for emerging destinations. The National Statistics Committee's preliminary count, as reported by the national press, put foreign visits for tourism purposes at 11.7 million in 2025, a rise of 46.8% over 2024 [5]. A survey-based study of 55 tourism companies in Uzbekistan found that HR management is largely missing among stakeholders, which the authors link to low profitability in the sector [6]. Rapid demand growth combined with weakly developed HR practices makes labour retention a strategic risk.

HR technologies are often presented as a remedy. Digital recruitment platforms, mobile learning, scheduling applications, engagement surveys and predictive analytics promise to reduce administrative burden and to detect flight risks early. Yet reviews of electronic HRM and HR analytics caution that technology adoption does not automatically deliver the outcomes expected [7, 8]. This article therefore asks: RQ1: what do turnover theory and evidence say about the mechanisms through which HR practices can reduce turnover? RQ2: what do published statistics and cost studies show about the scale and cost of turnover in tourism and hospitality, and what is known about Uzbekistan? RQ3: how can HR technologies be organised into a framework that links them to those mechanisms and supports rigorous evaluation?

Turnover theory and the process of leaving

Mobley's classic model described leaving as a process in which job dissatisfaction leads to thoughts of quitting, search for alternatives and intention to leave before the actual exit occurs [9]. Hom, Lee, Shaw and Hausknecht reviewed a century of turnover theory and research and showed how explanations have broadened from attitudes and alternatives to a wider set of attachment and shock-based mechanisms [10]. Mitchell and colleagues introduced job embeddedness, the combination of links to people and activities, fit with the organisation and community, and the sacrifice involved in leaving, and showed that it predicts voluntary turnover [11]. Allen, Bryant and Vardaman argued that common managerial beliefs about retention often lack empirical support and proposed evidence-based retention practices [12]. For HR technology, the implication is that a tool is useful only if it changes one of these mechanisms, for example by raising fit or embeddedness, not simply because it digitises an existing process.

Retention and costs in hospitality

Deery and Jago reviewed talent management, work–life balance and retention in hospitality and concluded that work–life balance has become one of the key variables in employee management and retention [13]. Hinkin and Tracey estimated turnover costs in hotels by including lost productivity and learning-curve effects, and reported that hotel companies underestimate these costs [3]. Davidson, Timo and Wang examined the cost of labour turnover in Australian four- and five-star hotels in a case-study design, which confirms the relevance of the issue outside the United States [4]. These studies justify including cost indicators in any HR technology evaluation.

Electronic HRM, HR analytics and the job demands–resources perspective

Bondarouk, Parry and Furtmueller synthesised four decades of electronic HRM research and grouped the determinants of adoption into technology, organisation and people factors, and the consequences into operational, relational and transformational outcomes [7]. Tambe, Cappelli and Yakubovich identified four challenges in applying data science to HR: the complexity of HR phenomena, small data sets, accountability, fairness and legal constraints, and adverse employee reactions to algorithmic decisions; they propose causal reasoning, experiments and employee contribution as guiding principles [8]. The job demands–resources (JD-R) model explains how job resources and demands shape strain and engagement [14], and it provides a language for judging whether an HR

tool adds a resource (for example, schedule control) or a demand (for example, intrusive monitoring).

Evidence from Uzbekistan

Three Uzbekistan-focused studies are relevant. Khurana and Ataniyazova combined document review, stakeholder interviews and online surveys of 55 tourism companies and found that HR management is largely missing among stakeholders [6]. Adilova, Mansurov and Iskandarova examined how tourism employment and income relate to tourist arrivals, using national statistics and UN Tourism data and an econometric analysis of determinants of inbound flows [15]. Yoo, Alimov, Jang and Roh used 230 responses from Uzbekistan's automotive sector and fuzzy-set qualitative comparative analysis to show that high-performance work system elements, usually seen as job resources, can act as job demands and increase turnover intention under some configurations [16]. The last study is not from tourism, but it carries a warning relevant to HR technology: a practice that helps in one configuration of resources may raise turnover intention in another.

Table 1

Synthesis of the reviewed literature and implications for HR technology

Theme (source)	Main insight	Implication for HR technology
Turnover process and theory [9, 10]	Leaving is a process; explanations include attitudes, alternatives and attachment	Target early signals (intention) as well as exits
Job embeddedness and evidence-based retention [11, 12]	Links, fit and sacrifice predict staying; managerial beliefs often unsupported	Choose tools that raise fit and links; test assumptions
Hospitality retention and cost [3, 4, 13]	Work–life balance is central; turnover costs are underestimated	Use scheduling flexibility; track cost per exit
e-HRM, analytics and JD-R [7, 8, 14]	Adoption effects depend on context; small data, fairness and reactions are risks	Pilot, experiment and protect trust; avoid adding demands
Uzbekistan [6, 15, 16]	HR management weak in tourism firms; HPWS can become a demand	Start with basic HR data; evaluate before scaling

Source: compiled by the author from the cited works.

2. Materials and Methods

The study has a conceptual-synthesis design with a descriptive empirical component. First, 13 scholarly sources were selected purposively for relevance to turnover theory, hospitality retention and costs, electronic HRM and analytics, and Uzbekistan, with preference for sources whose bibliographic details and digital object identifiers could be verified. The selection is not a systematic review, and its coverage is illustrative, not exhaustive. Three non-scholarly statistical or institutional sources were added: the WTTC workforce report [1], the U.S. Bureau of Labor Statistics (BLS) annual separations table [2] and a national press report on preliminary Uzbekistan visitor statistics [5].

Second, the statistics were read descriptively and no figure was estimated or imputed. Three comparability limits are stated. BLS rates are for the United States and measure all separations, not only voluntary quits, and the published table gives the 2025 value for all industries but the annual series for accommodation and food services; the ratio of the two in 2025 is calculated by the author. The hotel cost estimates come from case studies in specific cities and years and are not national averages. The Uzbekistan visitor figure is preliminary and press-reported. Because there is no published national turnover series for Uzbek tourism that the author could verify, no such series is used.

Third, the framework was built by mapping HR technologies to the mechanisms identified in the turnover literature along the employee lifecycle, and the propositions were derived by combining the framework with the cost and labour-market evidence. The propositions are designed to be falsifiable through the pilot design in Section 4.5. The framework has not been tested with employee-level or firm-level data, which is the principal limitation of the study.

3. Results

3.1. Labour-market context: workforce demand and shortfall

Table 2 summarises the WTTC workforce indicators. The sector supported 357 million jobs in 2024 and is forecast to support 371 million in 2025; 91 million new roles are projected by 2035, one in three net new jobs globally; and demand is expected to outpace supply by more than 43 million people, leaving labour availability 16% below the required level [1]. The hospitality gap of 8.6 million is about 18% below needed staffing. The report names shrinking working-age populations and workers who left during the pandemic as causes, and recommends leadership development, clear promotion routes, inclusive workplace cultures and investment in digital skills and AI adoption [1]. Retention is therefore a supply-side necessity and not merely a cost-saving measure.

Table 2

Workforce indicators for travel and tourism (WTTC)

Indicator	Value	Period
Jobs supported worldwide	357 million	2024
Jobs supported worldwide (forecast)	371 million	2025
New roles projected	91 million	by 2035
Projected labour shortfall (demand over supply)	> 43 million (16% below required)	2035
Projected shortfall in hospitality	8.6 million (≈18% below needed)	2035

Source: WTTC [1]. The report was published on 30 September 2025.

3.2. Turnover level in accommodation and food services

Figure 1 shows the average monthly total separations rate in accommodation and food services in the United States: 7.1 in 2021, 7.0 in 2022, 6.3 in 2023, 5.4 in 2024 and 5.5 in 2025; the 2025 rate for all industries is 3.3 [2]. The sector rate fell by about 1.6 points between 2021 and 2025 (author's calculation) but remained about 1.7 times the all-industry level in 2025 (5.5 divided by 3.3, author's calculation). The series shows that elevated labour movement in the sector is not only a short-term post-pandemic feature, although it cannot show how much is voluntary or what causes it.

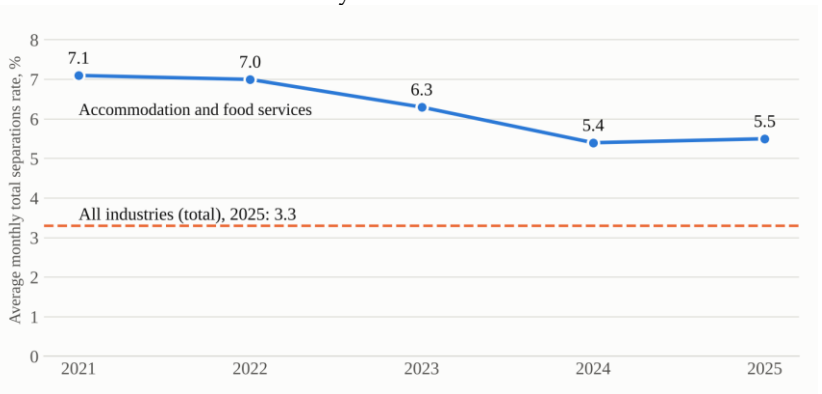


Figure 1. Total separations rate, accommodation and food services, United States, 2021–2025

Source: drawn by the author from BLS data [2]. Annual averages of monthly rates, not seasonally adjusted.

3.3. The cost of a turnover event

Hinkin and Tracey estimated turnover costs for hotel positions in two studies [3]. In the first study, conducted in four Miami hotels of one corporation, the average cost per position ranged from US$1,332 for room-service waitstaff to US$7,658 for an administrative assistant in sales, with front-office associates at US$5,688 and US$5,965 in the two hotels reported. The company's previous standard estimate for replacing an hourly employee was US$800. In the second study, in two New York City hotels, a front-office associate's turnover cost was US$11,609 and US$12,882 (luxury property); lost productivity accounted for more than half of total costs, time to reach competence ranged from 54 to 80 workdays, and turnover cost averaged about 27–30% of the position's total salary [3]. Figure 2 and Table 3 summarise the findings. These are US case studies from around 2000 and should be read as evidence on cost structure, not as current Uzbek values.

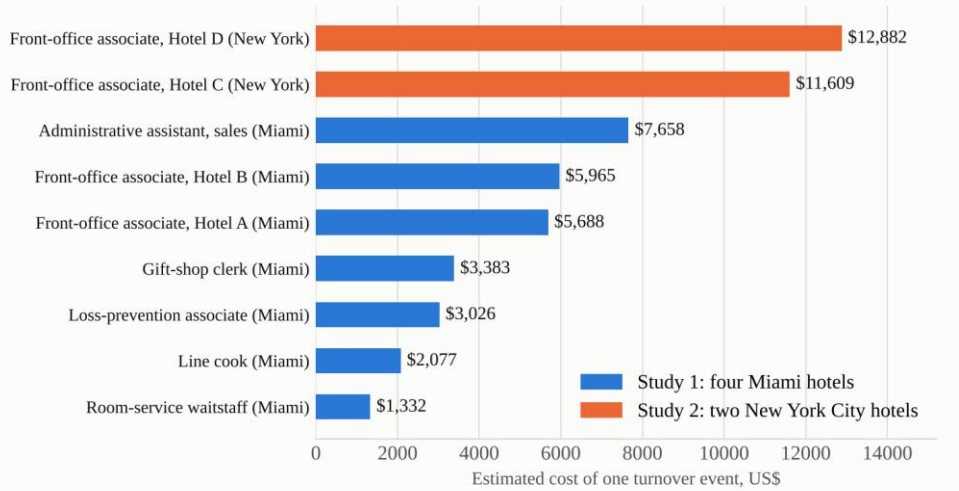


Figure 2. Estimated cost of one turnover event by hotel position (Hinkin & Tracey)
Source: drawn by the author from data in [3]

Table 3
Main findings of the hotel turnover-cost study

Finding	Study 1 (Miami)	Study 2 (New York City)
Hotels / units	Four hotels, one corporation	Two hotels
Front-office associate, cost per exit	US$5,688 and US$5,965	US$11,609 and US$12,882
Share of lost productivity	not summarised here	more than half of total cost
Time to competence	not summarised here	54–80 workdays
Cost relative to salary	not summarised here	about 27–30% of total salary

Source: [3]; "not summarised here" means the figure was not reported in the passages used by the author.

3.4. Evidence from Uzbekistan

Table 4 summarises the Uzbekistan-focused evidence. It is thin: there is a survey of 55 tourism companies indicating that HR management is largely missing [6], a study on tourism employment, income and tourist arrivals [15], and a turnover-intention study in a different industry [16]. Combined with the 46.8% increase in preliminary foreign visits in 2025 [5], the evidence suggests that growth in demand is outpacing the development of HR systems, but it does not provide turnover rates for tourism firms. Closing this data gap is therefore the first practical step.

Table 4
Uzbekistan-focused evidence relevant to turnover and HR

Study	Design	Relevance
Khurana & Ataniyazova (2024)	Document review, interviews, online survey of 55 firms	HR management largely absent among stakeholders
Adilova et al. (2024)	National statistics, UN Tourism data, econometric analysis	Links tourism employment and income with arrivals
Yoo et al. (2026)	230 responses, fsQCA, automotive sector	HPWS can act as a demand and raise turnover intention

Source: compiled by the author from the cited works [6, 15, 16].

3.5. Framework, propositions and evaluation design

Figure 3 presents the framework. HR technologies are arranged along the employee lifecycle (attraction and selection, onboarding, development, engagement and scheduling, exit and learning). Each technology is expected to influence turnover only through mechanisms identified in the literature: satisfaction and commitment [9], job embeddedness [11], work–life balance [13] and perceived fairness [8]. Governance, privacy and trust moderate the effect, because adverse employee reactions to algorithmic tools can offset their benefits [8].

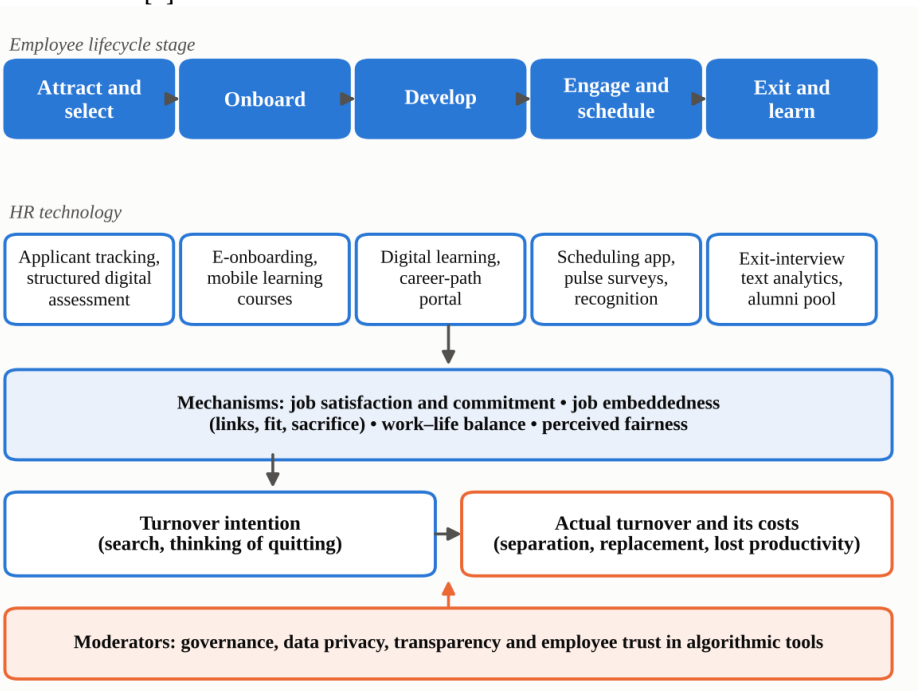


Figure 3. Lifecycle-based framework linking HR technologies to turnover outcomes

Source: developed by the author.

Table 5 turns the framework into indicators, and Table 6 states five propositions. Indicator definitions follow standard practice: turnover rate is separations divided by average headcount in the period; early attrition is the share of new hires leaving within 90 days; cost per exit follows the components in the hotel cost study (separation, replacement and lost productivity) [3]. The propositions are hypotheses to be tested, not findings.

Table 5
HR technologies, mechanisms and indicators

HR technology	Mechanism	Primary indicator	Risk to monitor
Structured digital selection	Person–organisation fit	90-day attrition	Algorithmic bias

E-onboarding, mobile learning	Fit, links, competence	Early attrition; time to competence	Content overload
Career-path portal, digital learning	Embeddedness, sacrifice	Internal promotion rate	Unfulfilled expectations
Scheduling application	Work–life balance	Schedule-change requests; turnover	Perceived unfairness
Pulse surveys, recognition	Satisfaction, commitment	Intention to stay; response rate	Survey fatigue
Exit analytics, predictive models	Learning, early warning	Cost per exit; model accuracy	Privacy, mistrust

Source: developed by the author.

Table 6
Propositions

No.	Proposition	Basis
P1	Introducing digital onboarding with mobile learning lowers 90-day attrition relative to comparable units without it	Embeddedness and fit [11]; cost of the learning curve [3]
P2	Scheduling tools that give employees input into shifts lower turnover intention more than tools that only automate rosters	Work–life balance [13]; JD-R [14]
P3	Pulse surveys improve retention only when results lead to visible management action	Evidence-based retention [12]
P4	Predictive turnover models add value only if validated in experiments and used with transparent rules	Analytics challenges [8]
P5	In firms without basic HR data, building a turnover and cost baseline precedes any tool adoption	Weak HR practice in Uzbekistan [6]

Source: developed by the author.

Figure 4 shows the staged evaluation design implied by the propositions: build the data foundation, diagnose turnover by tenure, department and shift, pilot one tool through a randomised or staggered rollout across units, evaluate against control units and scale only if effects and fairness checks are satisfied. This follows the recommendation to use causal reasoning, randomisation and experiments in HR analytics [8], and it lets a destination or hotel group learn from its own data before committing to expensive platforms.

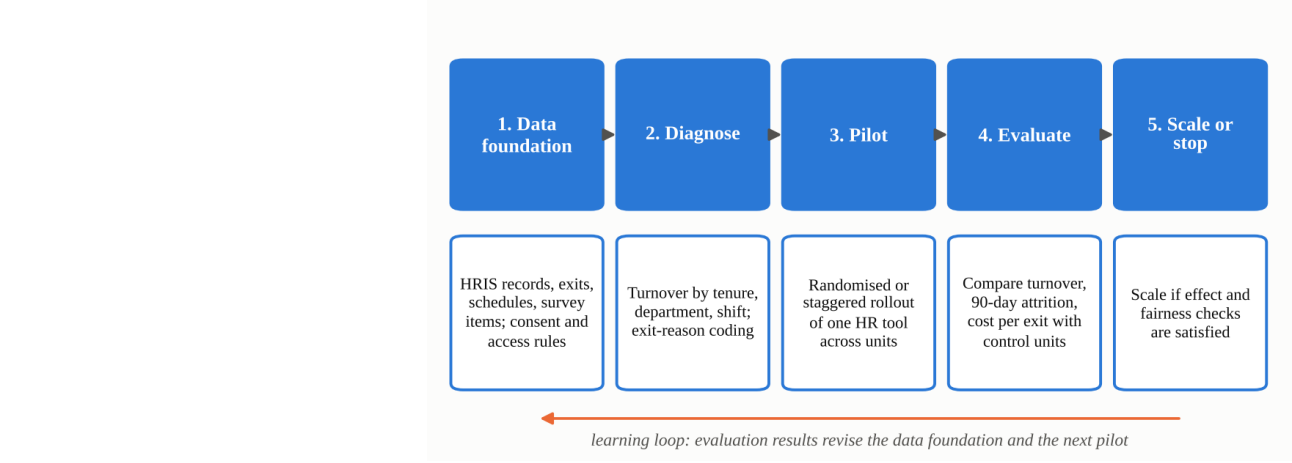


Figure 4. Staged pilot and evaluation design for HR technology
Source: developed by the author.

4. Discussion

The evidence supports three observations. First, the case for investing in retention is strong at the system level: a projected shortfall of more than 43 million workers [1] and a persistently higher separation rate in accommodation and food services [2] mean that firms cannot rely on replacing leavers easily. Second, the cost of each exit is substantial relative to salary [3], so even modest reductions in early attrition can be valuable. Third, the effect of HR technology is conditional. The turnover literature indicates that tools must change fit, embeddedness, balance or fairness [11, 13], the analytics literature warns about small data and employee reactions [8], and the Uzbek automotive study shows that practices usually treated as resources can become demands [16].

For Uzbekistan the implications are practical. The rapid growth in visitor numbers [5] will increase the need for trained front-line and supervisory staff, while the weak state of HR management reported in tourism companies [6] suggests that the first step is a modest one: record separations, tenure and exit reasons consistently, compute turnover and early attrition, and estimate cost per exit with the components used in hotel studies. Only after that baseline exists can scheduling applications, e-onboarding or analytics be tested. Employer associations or the tourism authority could support this by offering a common indicator template and by sharing anonymised benchmarks.

The study has limitations. The literature selection is purposive; the BLS data are American and measure all separations; the cost studies are older US case studies; the Uzbekistan visitor number is preliminary; and the framework and propositions are untested. The most valuable next steps are a baseline survey of turnover and HR practices in Uzbek hotels and travel companies, followed by staggered pilots of one or two HR tools with control units, and analysis that separates voluntary from involuntary exits.

5. Conclusion

Reducing turnover in tourism through HR technology is best approached as a theory-driven, measured intervention and not as a purchase of software. The reviewed evidence shows a large projected labour shortfall, a higher separation rate in accommodation and food services than in the wider economy, and substantial per-exit costs in hotels, while evidence for tourism in Uzbekistan indicates weak HR management and a lack of baseline turnover data. The proposed lifecycle framework, five propositions and staged pilot design offer a way to build that evidence and to scale only what works. The main task for future research is empirical testing of the propositions with firm-level turnover data from Uzbekistan.

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