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THE IMPACT OF BUSINESS PROCESS DIGITALIZATION ON MANAGERIAL DECISION-MAKING SPEED AND QUALITY IN UZBEK ENTERPRISES

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Abstract. *This paper examines the relationship between business process digitalisation and managerial decision-making in Uzbek enterprises, with particular attention to the frequency of digital data use, perceived decision-making speed and perceived decision quality. Managerial decision-making is a well-established locus of enterprise value creation, and digital transformation is widely expected to improve both the tempo and the substantive quality of decisions. Yet empirical evidence from emerging economies remains scarce. Drawing on a cross-sectional online survey of 288 respondents from five industry sectors, the study analyses three decision-relevant survey items (Q11–Q13) and relates them to organisational digital maturity. Results reveal a substantial adoption–usage gap: only 29.2% of respondents report that managers use digital data "often" or "always" in decision-making, while 42.4% report only occasional use. Perceived decision-making speed and decision quality gains are positive but moderate. Spearman correlations show that digital-data-use frequency is significantly associated with perceived decision speed ($\rho = 0.44$) and quality ($\rho = 0.47$). The study concludes that digital transformation in Uzbekistan has moved beyond technology procurement but has not yet reshaped managerial routines, and that the binding constraint is now the data-utilisation practices of managers rather than the availability of digital tools.*

Keywords: *managerial decision-making, digital transformation, data-driven decisions, business process digitalisation, Uzbekistan, adoption–usage gap, decision quality, decision speed.*

Аннотация. *В статье рассматривается связь между цифровизацией бизнес-процессов и принятием управленческих решений в узбекских организациях с особым вниманием к частоте использования цифровых данных, воспринимаемой скорости и воспринимаемому качеству управленческих решений. Принятие решений менеджерами - устоявшаяся точка формирования корпоративной ценности, а цифровая трансформация, как правило, ассоциируется с ускорением и качественным улучшением решений. Однако эмпирических данных по развивающимся экономикам недостаточно. На основе кросс-секционного онлайн-опроса 288 респондентов из пяти отраслей проанализированы три ключевых пункта опросника (Q11–Q13) и их связь с организационной цифровой зрелостью. Выявлен существенный разрыв между внедрением цифровых инструментов и их фактическим использованием: лишь 29,2% респондентов сообщают, что менеджеры «часто» или «всегда» используют цифровые данные в принятии решений, тогда как 42,4% фиксируют лишь эпизодическое использование. Воспринимаемое ускорение и рост качества решений положительны, но умеренны. Ранговая корреляция Спирмена показывает статистически значимую связь частоты использования цифровых данных с воспринимаемой скоростью ($\rho =$*

0,44) и качеством (ρ = 0,47) решений. Сделан вывод, что цифровая трансформация в Узбекистане вышла за пределы этапа закупки технологий, но пока не перестроила управленческие рутины; ограничивающим фактором становятся практики использования данных менеджерами, а не наличие цифровых инструментов.

Ключевые слова: *управленческое решение, цифровая трансформация, решения на основе данных, цифровизация бизнес-процессов, Узбекистан, разрыв внедрения и использования, качество решений, скорость решений.*

Annotatsiya*. Ushbu maqolada O'zbekiston korxonalarida biznes jarayonlarini raqamlashtirish va boshqaruv qarorlarini qabul qilish o'rtasidagi bog'liqlik, xususan raqamli ma'lumotlardan foydalanish chastotasi, idrok etilgan qaror qabul qilish tezligi va qaror sifati o'rganildi. Boshqaruv qarorlari korxona qiymatini shakllantiruvchi asosiy omil hisoblanadi va raqamli transformatsiya odatda qaror qabul qilish tezligi va sifatini oshirish bilan bog'lanadi. Biroq rivojlanayotgan iqtisodiyotlar bo'yicha empirik dalillar yetarli emas. Beshta tarmoqdan olingan 288 respondent ishtirok etgan kesma tarzdagi onlayn so'rovnoma asosida qaror qabul qilishga oid uchta savol (Q11–Q13) tahlil qilindi va ular tashkiliy raqamli yetuklik bilan solishtirildi. Natijalar joriy etish va foydalanish o'rtasida sezilarli farqni ko'rsatadi: faqat 29,2% respondentlar menejerlar qaror qabul qilishda raqamli ma'lumotlardan "tez-tez" yoki "doim" foydalanadilar deb qayd etadi, 42,4% esa faqat epizodik foydalanishni e'tirof etadi. Qaror qabul qilish tezligi va sifatining yaxshilanishi ijobiy, ammo mo'tadil. Spirmen darajali korrelyatsiyasi raqamli ma'lumotlardan foydalanish chastotasining qaror tezligi (ρ = 0.44) va sifati (ρ = 0.47) bilan statistik jihatdan ahamiyatli bog'liqligini ko'rsatadi. Xulosa qilib aytganda, O'zbekistonda raqamli transformatsiya texnologiya sotib olish bosqichidan o'tgan, biroq boshqaruv amaliyotlarini hali qayta shakllantirmagan; asosiy cheklov endi raqamli vositalarning mavjudligi emas, balki menejerlarning ma'lumotlardan foydalanish amaliyoti hisoblanadi.*

Kalit so'zlar: *boshqaruv qarori, raqamli transformatsiya, ma'lumotga asoslangan qarorlar, biznes jarayonlarini raqamlashtirish, O'zbekiston, joriy etish va foydalanish farqi, qaror sifati, qaror tezligi.*

1. Introduction

Managerial decision-making has been characterised since Simon (1977) as a bounded process in which access to timely, accurate information is the key constraint. Digital transformation is widely expected to relax this constraint by making organisational data continuously accessible, shortening the reporting lag between event and decision, and enabling evidence-based rather than intuition-based judgment (Provost & Fawcett, 2013; Laudon & Laudon, 2022). In theory, digital tools should therefore accelerate decisions and improve their quality.

In practice, the causal chain from digital adoption to decision improvement is more contingent. It requires not only that digital tools be installed, but that managers actually consult the resulting data and incorporate it into judgment. In emerging economies, where state-supported digital transformation programmes have driven rapid diffusion of enterprise systems, this adoption–usage gap is a real phenomenon that has received insufficient empirical attention.

Uzbekistan provides a suitable analytical setting. The Digital Uzbekistan–2030 Strategy, launched in 2020, prescribes broad diffusion of digital tools across sectors, and multiple government-financed initiatives have provided infrastructure and training. Yet the extent to which Uzbek managers have absorbed digital data into decision routines remains an open question.

This paper addresses three research questions. First, how frequently do managers in Uzbek enterprises use digital data in decision-making? Second, do respondents perceive that digitalisation has increased decision-making speed and quality? Third, is the frequency of digital data use associated with perceived improvements in decision speed and quality? These questions map to the hypothesis that business process digitalisation has a positive but conditional effect on managerial decision-making, contingent on the actual data-utilisation practices of managers.

2. Literature Review

Simon's (1977) view of managerial decision-making as a search under bounded rationality continues to structure the literature. Later elaborations by Turban, Pollard and Wood (2021) and by Laudon and Laudon (2022) integrate information systems as a mediating layer between the environment and the decision maker. Business intelligence (BI) systems in particular are argued to convert transactional data into dashboards and diagnostics that shape the decision agenda (Shollo & Galliers, 2016).

The data-driven decision-making (DDDM) literature has expanded rapidly in the past decade. Brynjolfsson and McAfee (2014) show at the cross-country level that firms which explicitly rely on data in decision-making outperform peers on productivity metrics. Wamba et al. (2017) provide firm-level evidence that big-data analytics capabilities translate into performance advantages when accompanied by supportive dynamic capabilities. What these studies share is a distinction between having data and using data: the second is a managerial practice, not a technology attribute.

For decision speed, the literature emphasises real-time reporting and workflow automation as mechanisms. Kane et al. (2019) demonstrate that digitally mature organisations exhibit shorter decision cycles because information gathering is compressed. For decision quality, the mechanisms are analytical: dashboards make trade-offs visible, and structured data reduces reliance on unreliable heuristics. However, quality gains presuppose managerial capacity to interpret data, which in turn depends on training.

Empirical work on emerging economies is thinner. Verhoef et al. (2021) note that most studies of digital transformation are conducted in Western Europe or North America. For Central Asia specifically, evidence relies on descriptive case studies. This gap justifies the present study.

3. Materials and Methods

The study uses primary data from a cross-sectional online survey of 288 respondents from Uzbek enterprises. Sampling, instrument design and data collection follow the same protocol as in the parent research programme (Toshtemirova, 2026). The full survey instrument comprised fifteen items covering demographics, digitalisation of business processes and managerial decision-making. This paper focuses on three items (Q11, Q12, Q13) and their bivariate associations.

Item Q11 measures the frequency with which managers use digital data in decision-making, on a five-point scale from 1 = Never to 5 = Always. Item Q12 measures agreement with the statement "Digital technologies help managers make decisions faster", on a five-point Likert scale. Item Q13 measures agreement with the statement "Digitalisation improves the quality of managerial decisions", on the same scale.

Descriptive statistics were computed for each item, along with the distribution across response categories. Bivariate associations were tested with Spearman's rank correlation, which is appropriate for ordinal data. Subgroup analyses examined variation by organisational position, since executives and business owners were expected to have more direct exposure to digital decision-support systems than employees.

For sensitivity, the analyses were repeated on complete cases only and on the full sample with pairwise deletion. Results were consistent across both specifications. The 5% significance level was used throughout.

4. Results

The frequency distribution for Q11 (managerial use of digital data) reveals a clear adoption–usage gap. Only 11.1% of respondents report that managers "always" use digital data; 18.1% report "often"; 42.4% report "sometimes"; and the remaining 28.4% report "rarely" or "never" (Figure 1). In other words, fewer than three in ten respondents observe consistent data use in managerial decisions.

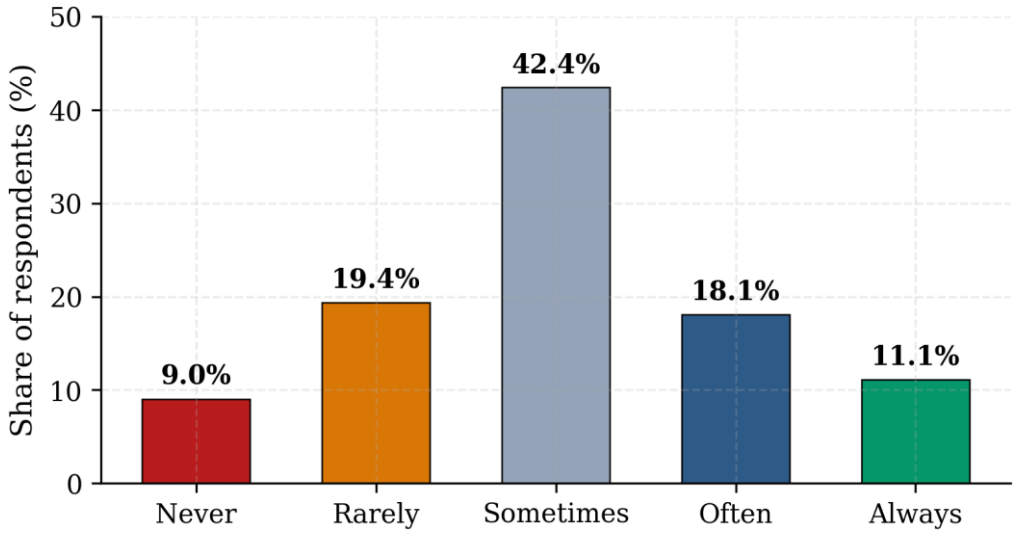


Figure 1. Frequency of digital data use by managers (Q11, n = 288). The modal response is "Sometimes", while consistent use ("Often" + "Always") reaches only 29.2%.

For Q12 (decision-making speed), the mean agreement was 3.14 (SD = 0.91). Fewer than half of respondents (approximately 45%) agreed or strongly agreed that digitalisation has accelerated managerial decisions, while approximately 30% recorded neutral positions and the remainder disagreed. For Q13 (decision quality), the mean was slightly higher at 3.22 (SD = 0.88), with approximately 49% agreeing or strongly agreeing (Figure 2).

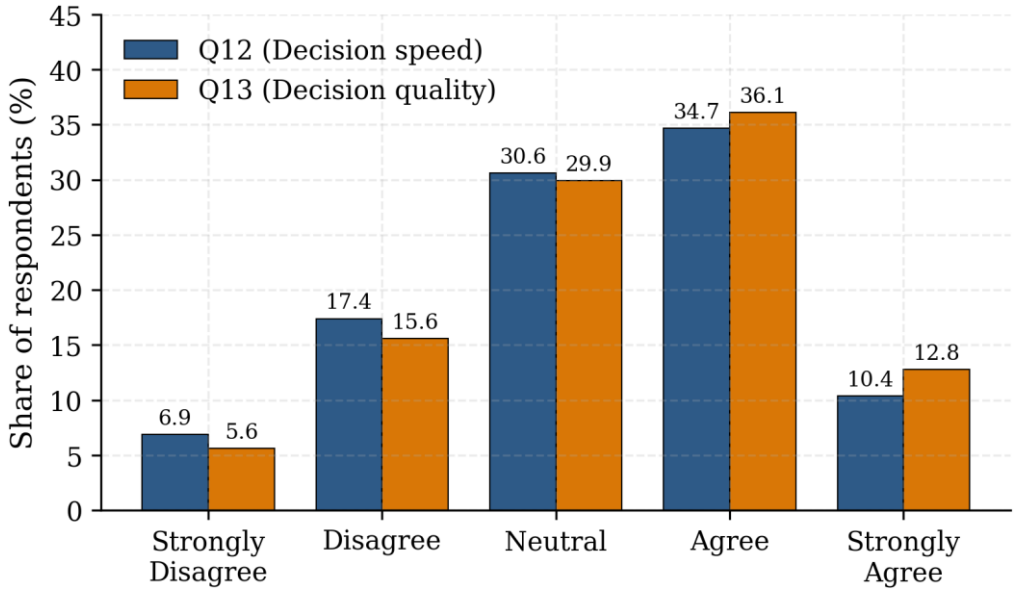


Figure 2. Perceived impact of digitalisation on decision speed (Q12) and decision quality (Q13). Distributions of responses on the five-point Likert scale.

Subgroup analysis by organisational position highlights the positional gradient. Executives reported the highest frequency of digital data use (mean Q11 = 3.20), followed by business owners (mean = 3.05), managers (mean = 2.92) and employees (mean = 2.71). The gap between executives and employees is consistent with the expectation that senior positions have more systematic exposure to digital reporting infrastructure (Figure 3).

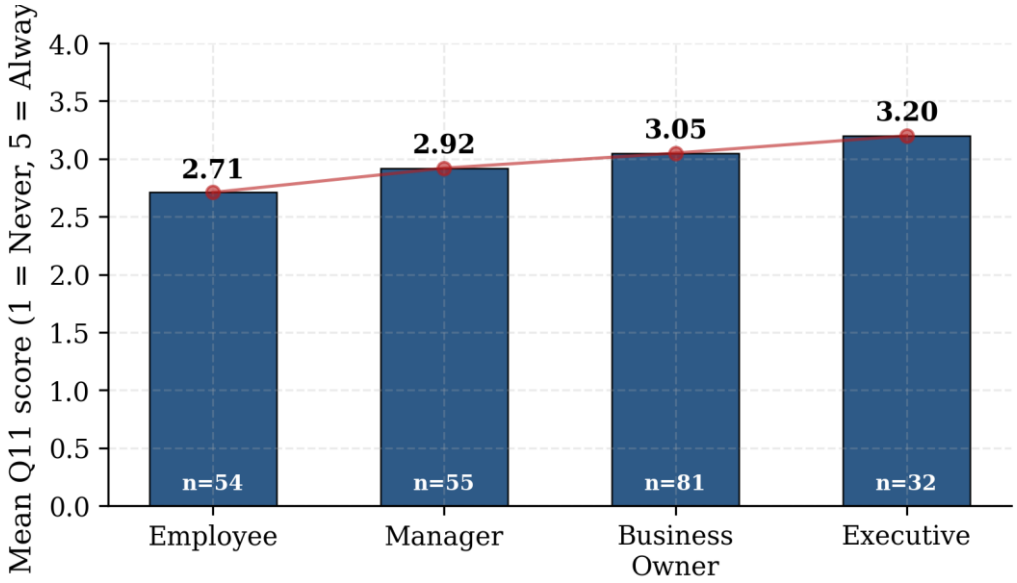


Figure 3. Mean Q11 (frequency of managerial digital data use) by organisational position. The monotonic gradient from executives to employees is a key finding of the study.

Spearman correlations show statistically significant associations between the frequency of digital data use (Q11) and both perceived decision speed ($\rho = 0.44$; $p < 0.001$) and perceived decision quality ($\rho = 0.47$; $p < 0.001$). The relationship between Q12 and Q13 is stronger still ($\rho = 0.61$; $p < 0.001$), suggesting that respondents who perceive digitalisation as accelerating decisions also perceive it as improving them.

A supplementary Kruskal–Wallis test showed that Q11 differs significantly by industry sector ($H = 9.87$; $p = 0.043$). Consistent with the sectoral gap identified in the parent research, tourism reported the lowest mean frequency of managerial digital data use.

5. Discussion

The dominant substantive finding is the persistence of an adoption–usage gap in Uzbek managerial practice. Digital tools have been installed at scale, but managers are not yet consulting the data they generate on a routine basis. This is the most policy-actionable finding of the study, because it identifies a concrete binding constraint on the returns to digital investment. Additional hardware and software will not narrow the gap; managerial training and reporting-culture change are required.

The correlations between Q11 and Q12/Q13 are consistent with the theoretical mechanism proposed by Simon (1977) and elaborated by the DDDM literature. Where managers do use data, decisions are perceived as faster and better. This does not establish causation, but the monotonic pattern across subgroups is difficult to reconcile with a reverse-causation story alone.

The positional gradient in digital data use has direct implications for internal governance. Executives, who set the strategic tone, do use data more often than mid-level managers and employees. Yet mid-level managers hold the bulk of operational decisions. Any programme intended to make digitalisation pay off in decision quality should therefore target this middle layer specifically.

For the tourism sector, the results reinforce the sectoral concern identified in the parent programme: not only is overall digital perception lower, but the specific practice of managerial digital data use lags. This has particular salience given Uzbekistan's positioning of tourism as a growth priority.

The main limitations of the study concern the cross-sectional design, the reliance on self-reported perception rather than observed decision quality and the convenience sampling frame. The finding of an adoption–usage gap is robust across subgroups and sensitivity specifications, but a longitudinal follow-up would strengthen causal inference.

6. Conclusion

This paper analysed the relationship between business process digitalisation and managerial decision-making in Uzbek enterprises along three dimensions: the frequency of digital data use, perceived decision-making speed and perceived decision quality. The results indicate that digital transformation in Uzbekistan has succeeded in installing tools but has not yet reshaped managerial routines. Fewer than three in ten respondents observe consistent managerial use of digital data. Where such use does occur, it is systematically associated with perceived gains in decision speed and quality.

The policy and managerial implication is precise: further returns to digital investment in Uzbekistan will depend on closing the adoption–usage gap. Managerial training programmes, internal reporting-culture change and organisational incentives for evidence-based decision-making are the priority interventions. Future research should test these interventions in quasi-experimental designs and expand the analysis to include observed decision outcomes as well as self-report.

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