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Behavior Change Strategies and Performance of State Corporations in Kenya: A Case Study of the Kenya Plant Health Inspectorate Service

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A B S T R A C T :

This study examined the relationship between behavior change strategies and the performance of state corporations in Kenya, using the Kenya Plant Health Inspectorate Service (KEPHIS) as a case study. Four strategies were assessed: communication strategies, training and capacity-building, incentives and reinforcement, and participatory engagement. A descriptive research design was adopted. From a target population of 506 employees, a stratified random sample of 224 was drawn using Yamane's formula, and 213 usable questionnaires were returned (response rate 95.09%). Data were analyzed with descriptive statistics, Pearson correlation and multiple regression in SPSS. Respondents rated the strategies favorably, with agreement on the best-rated item of each strategy ranging from 55.9% to 70.0%, although reward fairness (40.8%), promotion transparency (38.0%), coaching and mentoring (44.6%), consultative forums (44.6%) and ownership during organizational change (42.7%) were rated lower. Each strategy correlated positively with organizational performance: communication ($r = 0.683$), training and capacity-building ($r = 0.714$), incentives and reinforcement ($r = 0.596$) and participatory engagement ($r = 0.658$). The four strategies jointly explained 71.7% of the variation in performance ($R^2 = 0.717$; adjusted $R^2 = 0.712$). All regression coefficients were positive and significant ($p < 0.001$): training and capacity-building ($\beta = 0.287$), communication ($\beta = 0.218$), participatory engagement ($\beta = 0.203$) and incentives and reinforcement ($\beta = 0.164$). The study concludes that behavior change strategies are an important determinant of state corporation performance and recommends that KEPHIS and similar institutions prioritize continuous training, strengthen feedback and transparency, make reward and promotion systems fair and explicit, and institutionalize employee consultation in organizational change.

Keywords: behavior change strategies; organizational performance; state corporations; communication; training and capacity-building; incentives and reinforcement; participatory engagement; KEPHIS; Kenya

Introduction

State corporations are central instruments through which governments deliver regulatory, commercial and social services, and their performance determines how well public mandates are translated into results for citizens. In Kenya, state corporations have long been criticized for inefficiency, weak accountability and uneven service delivery, even as they absorb substantial public resources (African Development Bank, 2021). Much of the policy response has focused on structures, finance and governance. Less attention has been paid to the behavior of employees, whose daily conduct ultimately determines whether strategies, procedures and standards are carried out.

Behavior change strategies are the deliberate organizational practices used to influence how employees think, act and respond to organizational goals. This study examines four of them: communication strategies, training and capacity-building, incentives and reinforcement, and participatory engagement. Communication shapes shared understanding and alignment; training builds the competence and confidence needed to act; incentives and reinforcement make desired behavior worthwhile; and participation builds ownership of decisions and change. Evidence on these strategies exists in many settings, but it is largely qualitative, sector-specific or drawn from outside Kenyan regulatory state corporations (Bahand, 2025; Bukar et al., 2025; Agonafir et al., 2025).

The Kenya Plant Health Inspectorate Service (KEPHIS) offers a suitable case. It was established in 1996 under the State Corporations Act to regulate plant health, assure the quality of agricultural inputs and facilitate safe trade in agricultural products (KEPHIS, 2024). Its performance depends heavily on the technical competence and conduct of its inspectors, laboratory staff and administrators, so the way the organization informs, equips, motivates and involves them is directly relevant to its results.

The general objective was to investigate behavior change strategies and the performance of state corporations in Kenya, with KEPHIS as the case. The specific objectives were to: (i) examine the effect of communication strategies on the organizational performance of KEPHIS; (ii) assess the influence of training and capacity-building; (iii) evaluate the effect of incentives and reinforcement; and (iv) determine the influence of participatory engagement.

Theoretical and empirical background

1.1. Theoretical anchors

The study is anchored on Social Cognitive Theory (Bandura, 1986), which explains behavior as the product of continuous interaction among personal factors, environmental influences and behavior itself. Learning through observation, self-efficacy and reinforcement make the theory a natural basis for communication, training and participation as mechanisms of behavior change. Expectancy Theory (Vroom, 1964) supports the incentives and reinforcement variable: employees exert effort when they believe effort leads to performance, performance leads to rewards, and the rewards are valued. Systems Theory (von Bertalanffy, 1968) complements both by treating the organization as an interdependent whole, in which communication, training, rewards and participation work together rather than in isolation.

1.2. Empirical evidence and gap

Communication. Bahand (2025) found that formal, two-way and trust-based communication improved organizational efficiency in Afghan organizations, and Bukar et al. (2025) reported a positive, significant effect of communication strategies on performance in a Nigerian institution. In Kenya, Obengo (2025) linked effective corporate communication to stronger institutional performance in the banking sector.

Training and capacity-building. Agonafir et al. (2025) showed that weak capacity-building frameworks constrained the performance of Ethiopian public institutions, while Nguar and Appolloni (2025) found that digital learning and capacity-building improved employee performance in humanitarian organizations. Kenyan studies report similar effects at Meru County Government (r = 0.501; Ireen et al., 2025) and in the State Department for Public Service in Nairobi (Mugasia & Makhamara, 2026).

Incentives and reinforcement. Nadaruddin et al. (2025) linked reinforcement strategies to employee performance in an Indonesian firm, and Shinde (2025) showed that recognition and disciplinary practices strengthen motivation and retention. In Kenya, Wango and Makhamara (2025) found that monetary rewards and promotion initiatives improved performance at the Kenya Revenue Authority, and Afuya and Wanyoike (2025) reached a similar conclusion for a water and sanitation forum in Kakamega County.

Participatory engagement. Adam and Alfawaz (2025) found that engagement and commitment raised organizational performance, and Adamu et al. (2025) reported a strong association (r = 0.78) between employee engagement and performance in Nigerian government ministries. Kenyan evidence points to the importance of leadership support and coordination (Kathukya et al., 2025; Kagwanja et al., 2026).

These studies largely examine a single strategy, use qualitative or sector-specific designs, or are set outside Kenyan regulatory state corporations. None tests the four strategies together within a Kenyan regulatory parastatal. This study addresses that gap.

Methodology

1.3. Research design, population and sample

A descriptive cross-sectional design was adopted to document how the four strategies relate to organizational performance without manipulating variables (Creswell & Creswell, 2018; Mugenda & Mugenda, 2019). The target population was all 506 KEPHIS employees, comprising management staff, technical officers, inspectors, administrative personnel and support staff, based at the headquarters in Karen, Nairobi. A sample of 224 was determined with Yamane's (1967) formula at a 5% margin of error,

$$n = N / [1 + N(e^2)] = 506 / [1 + 506(0.05)^2] \approx 224 \quad (1)$$

and was allocated proportionately across job categories using stratified random sampling (Kothari, 2020).

1.4. Instrument, pilot and data collection

Data were collected with a structured questionnaire of closed-ended items on a five-point Likert scale (strongly disagree to strongly agree) covering the four strategies and organizational performance. A pilot test on 10% of the sample (23 respondents) at the Pest Control Products Board, who were excluded from the main study, was used to refine item wording. Construct validity was ensured by aligning items with the theoretical concepts, and content validity was established through expert review by the research supervisor. Internal consistency was assessed with Cronbach's alpha, with a coefficient of 0.70 or above regarded as acceptable. Following a NACOSTI research permit and KEPHIS authorization, trained research assistants administered the questionnaires by the drop-and-pick method, and completed forms were collected after one week.

1.5. Data analysis and ethics

Data were analyzed in SPSS Version 29 using frequencies, percentages, Pearson correlation and multiple linear regression. The model estimated was

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon \quad (2)$$

where Y is organizational performance, X_1 communication strategies, X_2 training and capacity-building, X_3 incentives and reinforcement, X_4 participatory engagement, β_0 the constant, β_1–β_4 the regression coefficients and ε the error term. Participation was voluntary and based on informed consent, and responses were kept anonymous and confidential.

Results and discussion

1.6. Response rate and respondent profile

Of the 224 questionnaires distributed, 213 were returned and usable, a response rate of 95.09%, which is adequate for analysis and generalization within the organization (Mugenda & Mugenda, 2019). Table 1 shows the profile of respondents. Men were 55.4% and women 44.6%; most respondents were aged 30 to 49 years (65.7%), 69.5% held a bachelor's degree or higher, 73.5% had five or more years of service, and respondents were drawn from all five job categories, with inspectors (31.5%) and technical officers (27.2%) the largest groups.

Table 1 - Profile of respondents (N = 213)

Characteristic	Category	n	%
Gender	Male	118	55.40
	Female	95	44.60
Age	20–29 years	34	15.96
	30–39 years	72	33.80
	40–49 years	68	31.92
	50 years and above	39	18.31
Education	Certificate	18	8.45
	Diploma	47	22.07
	Bachelor's degree	89	41.78
	Master's degree	52	24.41
	Doctorate (PhD)	7	3.29
Years of service	Less than 5 years	56	26.29
	5–10 years	74	34.74
	11–15 years	48	22.54
	Over 15 years	35	16.43
Job category	Management staff	31	14.55
	Technical officer	58	27.23
	Inspector	67	31.46
	Administrative personnel	38	17.84
	Support staff	19	8.92

1.7. Perceptions of the strategies and of performance

Table 2 summarizes the share of respondents who agreed or strongly agreed with the highest- and lowest-rated item under each variable. Practices that are routine and structural were rated most favorably: internal communication systems (66.2%), continuous skills development (70.0%), disciplinary measures (55.9%) and teamwork structures (68.1%). Practices that depend on fairness, dialogue or personal development were rated lowest: transparency in sharing information (50.2%), coaching and mentoring (44.6%), a fair and motivating reward system (40.8%), transparent promotion policies (38.0%), consultative forums (44.6%) and a sense of ownership during organizational change (42.7%). Performance was assessed positively, particularly the encouragement of innovation (68.1%) and efficient service delivery (65.2%).

Table 2 - Agreement (strongly agree + agree) with highest- and lowest-rated items

Variable	Highest-rated item	%	Lowest-rated item	%
Communication strategies	Effective internal communication systems	66.2	Transparency in sharing organizational information	50.2
Training and capacity-building	Continuous skills development opportunities	70.0	Coaching and mentoring programs	44.6
Incentives and reinforcement	Disciplinary measures	55.9	Promotion policies transparent and fair	38.0
Participatory engagement	Teamwork structures enhance collaboration	68.1	Sense of ownership during organizational change	42.7

Variable	Highest-rated item	%	Lowest-rated item	%
Organizational performance	Innovation is encouraged	68.1	Accountability measures well implemented	52.1

1.8. Correlation analysis

Table 3 shows that every strategy was positively associated with organizational performance. Training and capacity-building had the strongest association (r = 0.714), followed by communication (r = 0.683), participatory engagement (r = 0.658) and incentives and reinforcement (r = 0.596). The strategies were also moderately correlated with one another (r = 0.529 to 0.612), which suggests they operate as a mutually reinforcing set of practices, consistent with a systems view of the organization. These are associations and do not by themselves demonstrate causation.

Table 3 - Pearson correlation matrix

Variable	1	2	3	4	5
1. Communication strategies	1				
2. Training and capacity-building	0.612	1			
3. Incentives and reinforcement	0.547	0.583	1		
4. Participatory engagement	0.594	0.561	0.529	1	
5. Organizational performance	0.683	0.714	0.596	0.658	1

1.9. Regression analysis

The model summary in Table 4 shows that the four strategies jointly explained 71.7% of the variation in organizational performance ($R = 0.847$; $R^2 = 0.717$; adjusted $R^2 = 0.712$; standard error = 0.4821), so that about 28% of the variation is attributable to factors outside the model. Table 5 gives the coefficients. All four strategies had positive and statistically significant coefficients ($p < 0.001$), and training and capacity-building contributed most. The fitted model is: performance = 0.412 + 0.218 (communication) + 0.287 (training and capacity-building) + 0.164 (incentives and reinforcement) + 0.203 (participatory engagement).

Table 4 - Model summary

Statistic	Value
Multiple R	0.847
R^2	0.717
Adjusted R^2	0.712
Standard error	0.4821
Observations	213

Table 5 - Regression coefficients (dependent variable: organizational performance)

Predictor	β	Std. error	*t*	*p*
Intercept	0.412	0.187	2.203	0.029
Communication strategies	0.218	0.048	4.542	<0.001
Training and capacity-building	0.287	0.052	5.519	<0.001
Incentives and reinforcement	0.164	0.045	3.644	<0.001
Participatory engagement	0.203	0.047	4.319	<0.001

$t = \beta$ / standard error.

1.10. Discussion

Communication strategies. The significant effect of communication ($\beta = 0.218$) is consistent with Bahand (2025) and Bukar et al. (2025), who found that open, two-way communication improves efficiency and performance, and with Obengo (2025) for Kenyan institutions. The comparatively low ratings for feedback (52.5%) and transparency (50.2%) show that communication at KEPHIS works mainly as a channel for passing information down rather than as a two-way exchange.

Training and capacity-building. This was the strongest predictor ($r = 0.714$; $\beta = 0.287$), which is in line with Nguar and Appolloni (2025), Ireen et al. (2025), who reported a weaker correlation ($r = 0.501$) in Meru County, and Mugasia and Makhamara (2026), and in contrast to the weak capacity-building frameworks that constrained performance in Ethiopian public institutions (Agonafir et al., 2025). Training appears to change behavior most where it is continuous and technical, which suits a regulatory body whose credibility rests on technical competence. Leadership development (47.9%) and coaching and mentoring (44.6%) are the weaker links.

Incentives and reinforcement. The effect was significant but the smallest (β = 0.164). This agrees with Nadaruddin et al. (2025), Shinde (2025), Wango and Makhamara (2025) and Afuya and Wanyoike (2025) on the value of rewards and recognition, but the low ratings for reward fairness (40.8%) and promotion transparency (38.0%) suggest that perceived unfairness limits the strategy's potential. This is a plausible reading rather than a tested one, since fairness was not measured as a separate construct. The fact that discipline was rated higher than rewards suggests that reinforcement at KEPHIS leans toward control rather than motivation.

Participatory engagement. The positive, significant effect (β = 0.203) supports Adam and Alfawaz (2025) and Adamu et al. (2025). Teamwork was well rated (68.1%), but only 44.6% agreed that consultative forums are held regularly and 42.7% felt a sense of ownership during change, a coordination weakness also noted by Kagwanja et al. (2026) in a different setting. Participation therefore appears to operate more at the level of the work team than in corporate decision-making.

Conclusions and recommendations

The study concludes that communication strategies, training and capacity-building, incentives and reinforcement, and participatory engagement are each positively and significantly related to the performance of KEPHIS, and together explain 71.7% of its variation. Training and capacity-building is the strongest predictor, and incentives and reinforcement the weakest. The practices are established but unevenly applied: they are strongest where they are structural and technical and weakest where they depend on fairness, feedback, mentoring and consultation. Because the study is a single-organization, cross-sectional survey based on self-reported perceptions, the findings show association rather than causation and cannot be generalized directly to other state corporations.

Based on the findings, the study recommends that KEPHIS management and, where relevant, policymakers responsible for state corporations should:

- Prioritize training and capacity-building in human resource plans and budgets, add formal leadership development pathways and structured coaching and mentoring, and link training to job performance through needs assessments and post-training evaluation.
- Build structured two-way feedback channels (scheduled briefings, performance feedback sessions, suggestion mechanisms) into existing communication systems and routinely share policies, targets and decisions with all staff.
- Review reward, recognition and promotion policies so that criteria are explicit, linked to performance, communicated to all staff and applied consistently across departments and job categories.
- Institutionalize regular consultative forums at departmental and corporate levels, and involve employees early in the planning and communication of organizational change.
- Integrate the four strategies into a single behavior change framework within human resource and performance management systems, rather than applying them separately, and reflect them in guidelines for state corporations.

Future studies should include other factors such as leadership style, organizational culture and technology adoption, and should test the model in other state corporations, using comparative or longitudinal designs to establish causal effects.

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