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CHANGE MANAGEMENT PRACTICES ON SERVICES DELIVERY AT THE NATIONAL POLICE SERVIC CASE OF GARISSA COUNTY HEADQUARTERS.

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ABSTRACT

This study centered on change management Practices on Service Delivery in the National Police Service at Garissa County F Headquarters. To achieve this development change is inevitable for the successful attainment of the desired goals of se delivery in Kenya. Service delivery is an element of business that defines the interconnection between service suppliers consumers. Good service delivery gives clients improved value. A well-functioning public sector that delivers quality p

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services compatible with citizen tests and that encourages partnership growth between the police and the public. The sp objective of the research was to establish the degree to which organizational leadership change influences service delivery is national police service at Garissa County headquarters. Mintz Berg and Quinn's model, contingency model, and Kurt Le change theory model were applied in analyzing the theoretical background. A descriptive research method was applied research targeted a population of 852 NPS officers stationed at Garissa County headquarters including all cadres both junic senior officers of which a sample of 171 respondents was selected. Questionnaires were issued to the selected respondents. collected was subjected to quantitative analysis and presented using descriptive statistical computation such as frequency mean, inferential statistic involving the use of correlation analysis was adopted to find out the kind of relationship betweet dependent variable and the independent variables. Findings revealed a positive and significant influence of organization leadership changes and service delivery. The study recommends that the county headquarters should devise a distinct cha command to enhance efficiency; the leadership in the National Police Service in Garissa County should set up adequate elaborate communication structures. This would enhance service delivery for the National Police Service in Garissa County

Keywords: Change Management Practices, Services Delivery, National Police Service, Garissa County Headquarters.

BACKGROUND OF THE STUDY

Any organization that desires to improve its services can only be attained through change management practices for it's a systematic approach that includes dealing with the transformation or transitions of organizational core values, goals, technology, or processes. Change management has become one of the most critical success factors for any business in today's dynamic world (Lauer, 2023). Enhancing service delivery of an organization has always been of great significance to management and researcher's team. Service delivery is an element of a business that defines the interconnections between service suppliers and service consumers. Services is the face of an organization and your customers experience will be largely determined by the service they receive (Bharati & Sahu, 2022). Change management process is a continual subject examined by academicians, consultant and profession. According to (Wachira, 2015) change management practices also triggers the firm's achievements positively by enabling a vital and a significant addition on the firm capability, which then improve creativity within the organization. It is a perspective which needs elucidation and adjustment by professionals to secure the mass acceptable fitting amongst marketing policies and aspiration, consequently predominant market domain is also identified by soaring contestation and is the most powerful. Therefore, the organizations that achieves changes fast and ably are the ones that are most arguably to succeed it in the eventual aim (Wachira, 2015). Change is often needed to enable an organization procedure moves smooth and cost friendly, improves yields and swiftness and enable a more customer oriented and aggressive firm (Wachira, 2015). Lovely et al. (2020) investigated implementation management in addition to its effects in enhancing the success of corporates production in china. Established was that companies' production are changed definitely when stewardship application is applied to manage change. His advice was for an organization live in the present-day markets domain there is desire to change fast and adjust to changes. Therefore, this research pivots on how to control such changes employing approved applications with an intent to enhance service delivery in the National Police Service. Takwi and Atabongfua (2020) undertook research on a firm implementation management as well as production in fiscal institution in Cameroon and established that implementation in micro finance organizations is important for it enhances production. Equally this study will be focusing on change management through recommended policies in order to enhance service delivery in the national police

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service.

In Kenya a firm change is an important process within the existence of capitalism and state-own institutions. Organization of currently rapidly switching market domains, meets with the demanding duty of embracing challenges or to fall altoge. Worker's undertakes an important part in the achievements of a firm which put to consolidate the significant of devotion regard to any progressive change allied drives (Errida & Lotfi, 2021). Change management described as the approach, instru and procedure of maintaining the compassionate of implementation in the market in order to attain the desired outcome and act the market replacements ably within the employment collective facilities' (Creasy, 2017). Seven best practices for changement were proposed by USAID (2015). They comprise setting up inspiration for change, entailing high rar administrators, beginning implementation administration scheme, appealing stake holders, liaising across the board, develop facilities to advocate espousal of replacement with calculated progression.

STATEMENT OF THE PROBLEM

This stemmed from post-election violence of 2007/2008 where more than hundred Kenyans lost their lives, thousands displaced and properties worth millions destroyed, the Kenyan government appointed a national task force on police reforms whose finding establishes that the police uses excessive force during the post-election violence period, they were not trained and have no capacity to handle the violence that erupted spontaneously and they took political side. It's after this report that the government undertook an initiative of reforming the police to a professional standards after the promulgation of the new constitution 2010, whereby all the three services of Administration police, Kenya police and the Directorate of criminal investigation were merged and put under the single command and leadership of the inspector general of police, this was also followed by the shift from force to service, this triggered the change of structure of the national police service where police were categorized into units with define roles and function through change strategic policy framework of 2018 and all AP post were gazetted to patrol base, police post and police stations with an intent of taking police services closer to the people. Report of the police officers engagement in numerous crimes have occasionally come up as known scandals, according to study undertaken by IPOA in the year 2019, where police mistreat in the country reveled a remarkable growth over the past six years instead of reducing. It is this regards that a consideration was made which also introduces change of leadership strategy whereby all services of the national police service under a given administration unit were put under one command with a view of attaining effectiveness in service delivery and enhanced accountability. Also observed is the ever increasing crime level due to change of crime dynamic. To tackle this menace the governments introduce technological change strategy in the national police service with a view of reducing crime level through technology. Committal being one of the crucial measures of police service delivery has been increasing over the last eight years while state security remains dare as a result of menaces from rebellion pursuit and other set up of assembled perpetration (National Police Service Strategic Plan 2013/2014-2017/2018). In the year 2018 crime increased by 13.2 percent (national police annual crime report 2018). It's in this regard the national police service under take changes in their approach of duties through technological change. With the prevailing security dynamics of Garissa County and that of North Eastern region as a whole, which was occasioned by the Al-Shabab menace, this study was aimed to confirm if the implementation of the change management in the strategic policy framework of 2018 had any significance impact with regards to the research variable of organizational change of leadership, since Garissa County has unique challenges compared with the other parts of the country and the purpose of the research was to a certain the degree of implementation enabled by the national police service and its consequences to the policing system in the County headquarters.

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OBJECTIVE OF THE STUDY

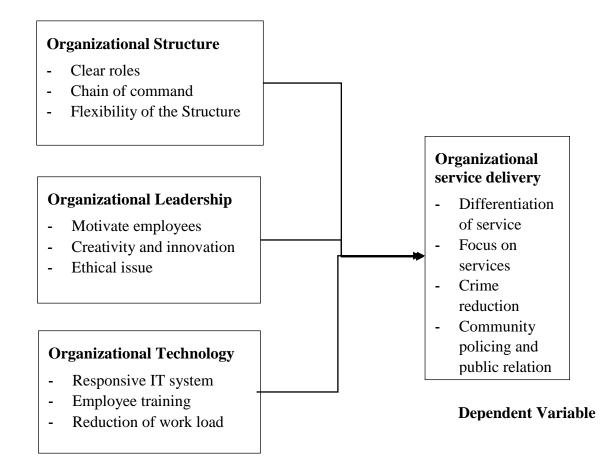
The objective of the study was to determine the influence of Organizational leadership changes on Service Delivery of the National Police Service in Garissa County.

THEORETICAL LITERATURE REVIEW

The theories that supported the research were Mintz Berg and Quinn's Model of Change, the Contingency Model of Change, and Kurt Lewin's Change Model. Mintz berg and Quinn's (2003) suggest four wide evidential elements which can impact the scope to which an organization can change. These components are the firm's span and magnitude, the applied methods of the organization, the firm domains and the essence of authority employed from diverse sources. Organizational lifetime and dimensions is the most important ingredient according to Mintzberg and Quinn. In this component, approved conduct is observed in mature firms, while big firms extra detailed composition and bigger formations review the span of the industry since it got confirmed junior organization that are fairly in the beginning phase have moderately slight form and consequently spend less time on setting-up conventional heritage and applications, which ultimately behave as an obstacles to conversions, consequently the matured firms accommodate with the change and take. Moreover, the contingency model is a wide sort of Lewin's three steps in which Dunphy and Stace (1993) describe the procedure of conversion from an innovative firm's perspective. Dunphy and Stace (1993) proposed a condition or possibility model of conversion, that stress the reality that firms will differ their implementation plans in accordance with the surrounding change for coming at a perfect apt. It additionally talks about that firms vary with regards to structures procedures and basic value which it embraces, and because of the distinctions, the firms are not permitted to be controlled by an equivalent conditional variable. Dunphy and Stace (1993) by their eventuality model suggest that turning on against the domain, the two, the executive as well as the change representative should differ their conversion plans. Both they distinct on the surroundings element besides the vigor of leadership which take part in a decisive part in any change. Additionally, Kurt Lewin in 1951 suggests an organized perspective on organizational change. He largely concentrated on how categories make decisions, implementation of the determination and the change. Later in 1958 Lewin major points was group behavior. Hussain et al. (2016) assume that Lewin change management model is the most acceptable model with regard to of commencing a change management capability. In his model he approved three steps that should be kept for change to be carried out effectively. They include refreezing, change and refreezing. As stated by Hussain et al. (2016), Lewins conversion control model can be executed in three forms i.e. converting the conduct, views and expertise of the individuals, changing of the existing firms' composition, arrangements and procedures and changing the organization heritage, climate and how they interact with other people.



CONCEPTUAL FRAMEWORK



Independent Variables

EMPIRICAL LITERATURE REVIEW

Police leadership has long been an area that attracts research studies it looked such an interested tool within policing. It c tracked back to traditional leadership theories and is not considered in the essential developments on leadership and res theory that have occasion in the last decade (Huu et al.2021). The police service in England and wales have established a attitude on police leadership where individual from outside the police service can now be directly recruited to a leadership r Initial studies established that officers places substantial value on being commanded by individual who has an experience being a serving police officer. Embracing a social identity perspective, the findings on both qualitative and qualitative data police officers believe on a direct entry and existing police leadership captured as part of wider national survey of police of in England and Wales. Recent finding of the police service in England and Wales have enabled commentators to suggest that

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facing some of the most controversial and biggest challenges in the last six decades (Brian, 2018). In Africa, military interversion politics has continued to receive scholarly attention (Cockcroft, 2019). The internal leadership process of the armed for especially as they transform to meet domestic and external commitments under democratic control has practically become analytic black hole. This research looks to fill this lacuna by using the Nigerian army as case study. In Nigeria two major conspecific events have had the farthest-reaching influence on the Nigerian army since year 1999 when democracy governances returned back. These attempts culminated in the adoption and execution of Nigerian army transformational agenda (NATA lieutenant General Onyeador Azubuike who served as a chief of army staff (COAS) from October 2010 to January 14th 2014

In Kenya the current changes in the police had come with a change in leadership command where the services were under command of their respective service commanders previously. The Kenya police command and leadership hierarchy was case to the provincial, divisional, station, post and patrol base commands coupled with units and formations that performs special functions equally the Administration police service command and leadership hierarchy was also cascaded through provind district, divisions and post with unit and formation commands. From the study, change of leadership contributed in the enthusiasm. Strong leadership in the NPS enhances communication. These results concur with those of Kenge and Anyieni (2 who established that organizational leadership had a significant effect to quality of service delivery. Likewise, Rigii et al. (2 found out that organizational leadership positively affects service delivery at the NPS in Garissa County. Organizational leadership styles on organizational performance indicated that leadership strategies positi influence service delivery for corporations. The study recommended that leaders should formulate appropriate policies to act organizational goals.

RESEARCH METHODOLOGY

A descriptive research design was applied. The research targeted a population of 852 National Police Service officers stationed at Garissa county headquarters including of all cadres both junior and senior officers of which a sample of 171 respondents were selected. Questionnaires were issued to the selected respondents. The information was presented in graphs, tables, and charts. A multiple regression model was used to explain the dependent variable (service delivery of the National police service) in terms of the independent variables. The model was:

$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \varepsilon$

Where: Y is Service Delivery of the National Police Service β_0 is a constant (β_i ; i=1, 2, 3} are the Beta coefficients X₁ is organizational structure changes X₂ is organizational leadership changes X₃ is technology changes ϵ is the error term



RESEARCH FINDINGS AND DISCUSSION

In addition, the study sought to establish the degree to which organizational leadership changes influence the service delivery of the National Police Service in Garissa County. The results are shown in Table 2.

Organizational Leadership Changes			
	Ν	Mean	Std. Deviation
Change of leadership play vital role on employee's motivation.	158	4.09	0.956
Change of leadership enhances creativity and innovation on job execution.	158	3.94	1.078
Change of leadership improve significantly ethical issues in the work place.	158	4.04	1.049
Change of leadership encourage and promote focus on service provision.	158	3.00	1.392
Change of leadership contributed in the work enthusiasm.	158	3.80	1.214
Strong leadership in the NPS enhances communication	158	3.90	1.090
Aggregate Mean		3.78	

The overall mean of 3.78 indicates that organizational leadership changes influence the service delivery of the National Police Service in Garissa County. These results concur with those of Kenge and Anyieni (2021) established that organizational leadership had a significant effect to quality of service delivery. Likewise, Rigii et al. (2019) found out that organizational leadership positively affects service delivery at the NPS in Garissa County.

Moreover, the study sought to investigate change management practices and service delivery of the National Police Service Garissa County headquarters. The results are shown in Table 4.

Service Delivery Descriptive	N	Mean	Std. Deviation
The officers at Garissa County headquarters work with professionalism	158	3.89	1.111
The police and policing services at Garissa County headquarters are easily accessible.	158	3.85	1.124
The police officers at Garissa County headquarters are more responsive to security issues.	158	4.04	0.967
Police officers at Garissa county headquarters are more customer/client focused.	158	3.37	1.284

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There is enhanced community policing in Garissa county.	158	3.46	1.203
There are low crime rates in NPS Garissa County headquarters.	158	3.58	1.180
Aggregate Mean		3.69	

The overall mean of 3.69 indicates that change management practices affect service delivery of the National Police Service Garissa County Headquarters. These findings concur with those of Mugambi (2017) who established that service delivery had improved as a result of better technology and organizational leadership change. Additionally, Wakinyo (2019) explored change management practices and the performance of the national police service, where he observed that change management in the police force is positively related to service delivery. Linear regression results reveal that organizational leadership change is statistically significant in explaining service delivery of the National Police Service in Garissa County (β = 0.765, p <0.05). This indicates that a unit increase in organizational leadership changes will result in a 0.765 unit's improvement in service delivery of the National Police Service in Garissa County

The study also carried out an ANOVA test

ANOVA showed that the significance level for the population parameters was 0.000. This indicates that there was a considerable association between the independent and dependent variables. The estimated value of F was more than the critical value of F (2096.098 > 2.669). This shows that changes in organizational leadership changes affect the service delivery of the National Police Service in Garissa County. The study computed the coefficients where a multiple regression model was used to explain the dependent variable (service delivery of the National police service) in terms of the independent variables. Table 4.14 indicates the model as:

 $Y = -0.013 - 0.071 X_1 + 0.765 X_2 + 0.294 X_3 + e$

Where:

Y is the service delivery of the National Police Service in Garissa County changes, X is organizational leadership changes, and ε is the error term. Holding organizational leadership changes, to a constant zero, the service delivery of the National Police Service in Garissa County would be at a constant value of -0.013. Organizational leadership change is statistically significant in explaining service delivery of the National Police Service in Garissa County (β = 0.765, p <0.05). This indicates that a unit increase in organizational leadership changes will result in a 0.765 unit improvement in service delivery of the National Police Service in Garissa County.

CONCLUSION

There was a positive and significant influence of organizational leadership changes and service delivery of the National F service in Garissa County. Thus, from this study's findings, organizational leadership changes have a significant effect on se delivery of the National Police service in Garissa County. Leadership plays a vital role on employee's motivation in NPS se delivery. Additionally, change of leadership enhances creativity and innovation on job execution. Change of leadership imp ethical issues in the work place. Moreover, change of leadership encourages and promotes focus on service provision. From

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study, change of leadership contributed in the work enthusiasm. Strong leadership in the NPS enhances communica Organizational leadership should continuously audit their organization structures and become an effective tool for improrelationship hence enhancing service delivery.

RECOMMENDATIONS

Based on the findings, the study recommends the following:

1. The need for the police service to develop and implement a formal change management process in organizational leadership is to encourage and promote focus on service provision to the general public and establishing mutual relationship between the police and the public hence reducing crime levels at a lower cost.

2. The need for the police service to provide training to all staff on the change management process on organizational leadership is to provide capacity building and inculcate an element of leadership to the police officer, that will promotes professionalism in the service and ensure effective service delivery and enhanced customer satisfaction.

3. The need for the police service to create a culture of change within the organization in order to realize and encourage work enthusiasm among the police officer which eliminates absenteeism, enhance motivation among the officer and enable achieving of the organizational goals.

4. The need for the police service to set up adequate and elaborate communication structure, for this will enable promotion of two way communication system from the previous one way communication system which improves the flow of information that allows quick decision making processes that enable proactive security measure executed which is a deterrence measure of risk occurrence and allow continuous audit of the organization structure.

AUTHOR'S CONTRIBUTIONS.

Dekow Mohamed Diis wrote the concept paper and proposal. The entire research proposal was guided and supervised by Dr, Peter Butali and Dr John Gitau Kagumu. They got permission from the County Commissioner's office, Garissa, and NACOSTI for ethical consideration.

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CONFLICT OF INTEREST DECLARATION.

I declare that there exists no conflict of interest pertaining to this publication. High ethical standards were applied during the whole research process.

BIBLIOGRAPHY

- Bharati, B., & Sahu, K. (2022). Effect of COVID-19 pandemic on home delivery of contraceptives by community health we in India: Time to (re) evaluate and innovate. Journal of Family Medicine and Primary Care, 11(5), 1 https://doi.org/10.4103/jfmpc.jfmpc_1930_21
- Chege, S. M., Wang, D., & Suntu, S. L. (2020). Impact of information technology innovation on firm performance in K Information Technology for Development, 26(2), 316–345. https://doi.org/10.1080/02681102.2019.1573717
- Cockcroft, T. (2019). Institutional hybridity and cultural isomorphism in contemporary policing. *International Journal of F* Science and Management, 21(4), 218–229. https://doi.org/10.1177/1461355719889462
- Creasy, R. (2017). The taming of education: Evaluating contemporary approaches to learning and teaching. The Tamin Education: Evaluating Contemporary Approaches to Learning and Teaching (pp. 1–224). Springer Internat Publishing. https://doi.org/10.1007/978-3-319-62247-7
- Dunphy, D., & Stace, D. (1993). The Strategic Management of Corporate Change. Human Relations, 46(8), 905https://doi.org/10.1177/001872679304600801
- Errida, A., & Lotfi, B. (2021). The determinants of organizational change management success: Literature review and case s International Journal of Engineering Business Management, 13. https://doi.org/10.1177/18479790211016273
- Hussain, S. T., Lei, S., Akram, T., Haider, M. J., Hussain, S. H., & Ali, M. (2016). Journal of Innovation Conceptual paper Lewin's process model for organizational change: The role of leadership and employee involvement: A critical rev Suma de Negocios, 1–7. Retrieved from http://dx.doi.org/10.1016/j.jik.2016.07.002
- Huu Ban, N., Anh Son, D., Manh Tuan, V., & Thi Thuy Hanh, N. (2021). Current Situation of Oral Diseases among Police Off and Soldiers of Nam Dinh Provincial Public Security Department in Vietnam, in 2019-2020: Examination, Diagnosi Intervention with Some
- Karemu, G., Nyakora, M., Thoronjo, E. M., & Mandere, E. N. (2021). An Investigation of the Influence of Organizational Stru on Performance of Mobile Telephone Network Operators in Kenya. *European Journal of Business and Manage Research*, 6(3), 200–207. https://doi.org/10.24018/ejbmr.2021.6.3.908
- Kenge, I. K., & Anyieni, A. G. (2021). Organizational Leadership and Quality Service Delivery in Faith Based Hospita Kiambu County, Kenya. *The International Journal of Business & Management*, 9 https://doi.org/10.24940/theijbm/2021/v9/i11/bm2111-023
- Lauer, T. (2023). Success Factors of Change Management. In Quick Guide Change Management for all Cases (pp. 31 Springer Berlin Heidelberg. https://doi.org/10.1007/978-3-662-66625-8_2

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- Lannes, H. (2021). Effect of Organizational Communication on Organizational Climate and Organizational Effective Undergraduate Journal of Psychology, 3(1), 31–39.
- Lewin, D. (1951). Strategic management of cooperate change. New York.
- Loveday, B., & Jung, J. (2021). A Current and Future Challenge to Contemporary Policing: The Changing Profile of Crim the Police Response. Examples of Policing Fraud in Two Police Jurisdictions: England and Wales and South K *Policing (Oxford)*, 15(3), 1633–1650. https://doi.org/10.1093/police/paab034
- Lovely, W., Darlington Onyiyechukwu, O., & Daniel Joseph, J. (2020). Effects of Change Management on the Productive Organizations in Nigeria. *International Journal of Business & Law Research*, 8(1), 153–158. Retrieved www.seahipaj.org Amenia, W. H., & A, s. (2007).
- Martínez-Caro, E., Cegarra-Navarro, J. G., & Alfonso-Ruiz, F. J. (2020). Digital technologies and firm performance: The red digital organisational culture. Technological Forecasting and Social Change, https://doi.org/10.1016/j.techfore.2020.119962
- Mbah Takwi, F., & Atabongfua Mavis, A. (2020). The Effects of Logistic Management on Enterprise Performance: A Ca Gas Depot Atem in Yaoundé Cameroon. *American Journal of Operations Management and Information Systems*, 5(3 https://doi.org/10.11648/j.ajomis.20200503.12
- Mbiti, J., & Misango, S. (2021). Organizational Culture and Structure as Determinants of Service Delivery in the Co Government of Kitui. European Journal of Business and Strategic Management, 6(1), 72 https://doi.org/10.47604/ejbsm.1385
- Mintzberg, H., & Quinn, J. B. (2003). The Strategy Process (4th Edition) (Book). Mt Eliza Business Review, 6(1), 9. Mahesh S., & Vohra, V. (2018). Role of training and development practices in implementing change. *International Journ Learning and Change*, 10(2), 131–162. https://doi.org/10.1504/IJLC.2018.090911
- National Police Service Policy Framework Strategy (2018) Ministry of Interior and Coordination of National Government
- Ramoroka, T. (2012). Building safer urban human settlements in South Africa: A case of the National Development Plan 2 *Journal of Public Administration*, 321–333.
- Rigii, P., Ogutu, M., Awino, Z. B., & Kitiabi, R. (2019). The Effect of Ethical Practices on the Relationship between Strate Leadership and Service Delivery of County Governments in Kenya. *Strategic Journal of Business & Change Manager* 24(4), 75–83. Retrieved from www.strategicjournals.com
- Timmons, J. C., Kamau, E., Lyons, O., & Enein-Donovan, L. (2019). Provider strategies on ten elements of organizat transformation. *Journal of Vocational Rehabilitation*, 50(3), 307–316. https://doi.org/10.3233/JVR-191012
- Tsou, H. T., & Chen, J. S. (2021). How does digital technology usage benefit firm performance? Digital transformation str and organisational innovation as mediators. Technology Analysis and Strategic Manager https://doi.org/10.1080/09537325.2021.1991575
- Wachira, Lilian & Anyieni, Abel. (2015). Effect of Change Management Practices on Performance of Teachers Se Commission. 6. 6-391. 10.21275/ART20173189.
- Muchemi, A., &Wakonyo, E. N. (2020). Change Management Practices and Performance of the National Police Servi

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UasinGishu County, Kenya. International Journal of Current Aspects, 4(1), 1–21. https://doi.org/10.35942/ijcab.v4i1.95

Mugambi, C. N., Muindi, F., Munjuri, M., &Ogutu, M. (2022). Human Resource Management Practices, Employee Dispose and Employee Performance at National Police Service of Kenya. *European Journal of Business and Manage Research*, 7(1), 166–169. https://doi.org/10.24018/ejbmr.2022.7.1.1068

