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## The Role of Police Administration in Infusing Collective Safe Disposal Behavior: An Empirical Study on The Djiboutian Citizens

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### ABSTRACT

While Djibouti City's total solid waste production (without including other regions and rural municipalities) was only approximately 3 million tons in 2018, whereas, it is anticipated to increase to about 10.2 million tons by 2025. Despite the fact that landfilling is the only official treatment for the city of Djibouti's rising waste output, residents' management of general waste is nevertheless negatively impacted by the absence of waste segregation, owing to improper disposal methods and the lack of proper disposal sites which in retrospect led to illegal waste disposal. Therefore, the present study investigates the role of police administration in promoting collective safe waste disposal behavior among citizens. To do so, we conducted a comprehensive two-month open questionnaire on various Djiboutian social media platforms, ultimately garnering responses from 290 participants. Subsequently, we applied structural equation modeling. The findings indicate that police effectiveness and performance significantly and positively influence citizens' willingness to cooperate, subsequently fostering safe disposal behaviors. Conversely, police procedural justice had no significant impact on cooperation however, a direct positive effect from police procedural justice to safe disposal behavior had been detected. These insights aim to aid Djiboutian authorities in steering citizens toward more sustainable waste management practices.

**Keywords:** Waste disposal, SEM, public management, police-citizen relationship, sustainability

### ABSTRAK

Meskipun produksi total limbah padat kota Djibouti (tanpa termasuk wilayah lain dan desa-desa) hanya sekitar 3 juta ton pada tahun 2018, namun diperkirakan akan meningkat menjadi sekitar 10,2 juta ton pada tahun 2025. Meskipun landfilling adalah satu-satunya metode pengelolaan limbah resmi bagi kota Djibouti yang menghadapi peningkatan produksi limbah, namun pengelolaan limbah umum oleh penduduknya tetap terpengaruh secara negatif oleh beberapa faktor. Hal ini termasuk ketiadaan segregasi limbah, metode pembuangan yang tidak tepat, dan kurangnya tempat pembuangan yang sesuai, yang pada akhirnya mengakibatkan pembuangan ilegal limbah. Oleh karena itu, penelitian ini menginvestigasi peran administrasi polisi dalam mempromosikan perilaku pembuangan limbah yang aman secara kolektif di kalangan warga. Untuk melakukannya, kami melakukan survei terbuka selama dua bulan di berbagai platform media sosial Djibouti, akhirnya mengumpulkan tanggapan dari 290 partisipan. Selanjutnya, kami menerapkan pemodelan persamaan struktural. Temuan kami menunjukkan bahwa efektivitas dan kinerja polisi secara signifikan dan positif memengaruhi kemauan warga untuk berkooperasi, yang pada gilirannya mendorong perilaku pembuangan limbah yang aman. Sebaliknya, keadilan prosedural polisi tidak memiliki dampak signifikan pada kerja sama, namun efek positif langsung dari keadilan prosedural polisi ke perilaku pembuangan limbah yang aman telah terdeteksi.

**Kata Kunci:** Pembuangan limbah, SEM, manajemen publik, hubungan polisi-warga, keberlanjutan

## INTRODUCTION

In order to fight violence and maintain public peace, police services are required to uphold and implement legislated rules on safety and social order. Generally speaking, police personnel are supposed to deliver certain security duties in a prompt, objective, economical, devoid of corruption, and transparent fashion (Davidovitz & Cohen, 2022). Nevertheless, governance structures, such as governmental management mechanisms, cohesion, controls and balances, program implementation, and supervision, among others, are believed to have a substantial impact on how a particular security force provides stability to a community (Hand & Catlaw, 2019).

The cardinal role of police-citizen has been discussed in literature. First, it is impossible to overestimate the value of developing connections of trust with the public when it comes to police operations. The formation of solid relationships with the community is crucial for effective police operations (Masood & Azfar, 2021). Effective police-community interactions encourage residents to interact and work with the administration to enhance local protection and stability (Döring, 2021). The credibility of the police is understood as a three-dimensional structure. According to Porumbescu et al. (2019), citizens' impressions of the police acting in the public good are reflected in the first aspect of integrity and kindness. The second factor, ability, is the belief that the police have the knowledge and tools required to maintain public safety. The third factor, sincerity, is related to the belief that police are trustworthy and reliable.

Second, the police engage in confrontation with people in a variety of manners and for a variety of causes. There are regulatory interactions, such as when a person is detained by an officer whether on the street or in a car in order to investigate. There are service-style interactions, such as when someone comes forth to provide evidence crucial to police intel or to disclose a recent target of violence to the police. There are also unintentional contacts, such as when people witness police officers cruising their neighborhoods and engaging with locals (Paoline et al., 2021). Whatever the circumstance, interactions between police and citizens occur often and are frequently, if not always, quite significant for both sides. There is a huge amount of data to support the idea that police-citizen interactions are "life lessons" where individuals revise their views on trustworthiness (Kaiser & Reisig, 2019).

Moreover, Police legitimacy and integrity play a vital role in law enforcement, significantly influencing individuals' compliance with the law, reporting of crimes, cooperation with authorities, and their overall trust in the justice system (Oliveira et al., 2021). It is imperative that law enforcement officers maintain respectful interactions with the public, as the level of public cooperation profoundly affects the efficacy of police operations. Without public support, investigations may falter, suspects evade capture, arrests decrease, and crimes remain unresolved (Terpstra & van, 2021). Furthermore,

there is a growing body of empirical research exploring the impact of administrative fairness on public perceptions of police legitimacy (Owens et al., 2018). To enhance their credibility, law enforcement agencies should prioritize procedural justice by improving decision-making processes and social engagement. This, in turn, fosters greater public trust and compliance with the law, creating a positive feedback loop between police credibility and public cooperation (Mazerolle & Terrill, 2018).

In addition to its role in crime reduction, the police force also plays a significant role in promoting sustainability within communities. This is particularly evident in the attention paid to Safe Waste Management (SWM), particularly in developing nations (Rigasa et al., 2017). The rapid urbanization and migration of rural populations to urban areas in pursuit of employment and improved living conditions have led to a notable increase in the volume of solid waste generated in urban settings. This issue is further exacerbated in instances of rapid urbanization, leading to the emergence of informal housing (Alzamora & Barros, 2020).

Managing waste has become increasingly challenging for municipalities due to the escalating waste volume. Moreover, many emerging nations, upon gaining independence from colonial rule, have adopted a conventional waste management approach where local government entities hold centralized control over waste management. In this framework, waste collection fees are typically regulated by the government, and waste management is predominantly perceived as the responsibility of local authorities (Sinthumule & Mkumbuzi, 2019).

The management of municipal solid waste (MSW) has become increasingly challenging and costly due to factors such as urbanization, population growth, environmental concerns, and the introduction of new products. These challenges are pervasive across nations despite varying circumstances and approaches (Boateng et al., 2019; Fernando, 2019). In addressing this complexity, securing funding for MSW services is crucial, as enhancements in waste collection, processing, and disposal inevitably come with higher costs. Communities may adopt different strategies, including waste minimization (reduction, reuse, recycling) and fee systems, to improve their situations. Regardless of local conditions, financial resources are essential for providing high-quality, environmentally-conscious services.

Lohri et al. (2014) suggest potential sustainability solutions based on their study of an Ethiopian city. These include expanding the value chain by selling products made from recycled organic waste, diversifying income sources and financing methods, optimizing costs, and enhancing cost-effectiveness. Additionally, they propose combining fees for solid waste collection and water delivery to further enhance the value chain.

Some countries are considering individual waste management charges, similar to how water and electricity are billed. These charges serve not only to generate funds for waste services but also to convey the notion that these services are not provided for free. Depending on the pricing structure, such charges can also incentivize reduced solid waste generation. Implementing these charges can be complex in practice, as they must balance revenue generation for public administration with fairness for users (Park, 2018).

Nevertheless, it is generally known that the authority alone cannot do this; without the participation of other parties, the Management of solid waste would continue to be undesirable. Therefore, policies that engage all parties involved, particularly people, are required. Since it is well known that citizen engagement in judgment can increase collaboration, responsibility, and culpability in execution, their involvement is essential for effective waste management (Kala & Bolia, 2020). Biyani and Anantharaman (2017) addressed the tactics for a participatory government and the responsibilities of many stakeholders, including spreading knowledge of waste management. Indeed, improved community involvement has helped several affluent nations manage their trash. For instance, Indian cities with higher levels of public involvement have also done well (Ganesan, 2017). Therefore, accountability, law enforcement, and transparency are emphasized in an effective governance. Without active citizen engagement, these objectives become elusive, as individuals often perceive their input as disregarded. Amplifying community perspectives and their integration into policy advocacy is evidently crucial for meaningful change (Sultana et al., 2021).

Whereby, in Djibouti waste management has become a persistent, widespread problem. The waste management system in Djibouti is plagued by issues that are common in developing nations, such as financial constraints and infrastructure gaps as well as political interference. Additionally, when the nation's biggest landfill was shut down, the absence of a backup plan and constant dependence on ad hoc approaches to handle the solid waste sector culminated in a national garbage catastrophe. The fact of unreserved landfills and scant waste disposal sites are among many issues undermining the country's public waste management. In the same vein, Djiboutian waste disposal behavior is not considered at its best. On a similar trend, illegal waste dumping in public and government-owned lands persists, despite the mayor's efforts to establish designated waste disposal sites, which unfortunately face issues like vandalism. To address this ongoing crisis, this paper aims to outline the role of the police in promoting proper waste disposal practices among Djiboutian households.

Many scholars studied the role of government involvement in solid waste management (Banerjee & Sarkhel, 2020; Rahmandoust et al., 2022; Boubellouta & Kusch-Brandt, 2022), Behavioral aspects of household recycling (Reijonen et al., 2021; Fagariba & Song, 2017; Raghu & Rodrigues, 2020) environmental concerns (Liu & Hsu, 2022) socioeconomic

and demographic factors (Mamady, 2016; Phan et al., 2021; Altikolatsi et al, 2021). Whereby, (Ashenmiller, 2010) tested how policies that promote bottle recycling, while also raising the salaries of low-wage employees could have an impact on lowering petty crime rates. Ironically, despite the knowledge of the cardinal role of the police department in affecting citizens' behavior and attitude, there is no research to our knowledge incorporating police with waste disposal behavior. To explore this idea, the paper considers various dimensions of the citizen-police relationship. In particular, we consider Djiboutian citizens' attitude toward police performance in directing toward healthier disposal behavior, alongside the level of effectiveness of law enforcement, we also take into consideration police procedural justice. We aim to explore if these factors have any specific effect on citizens' willingness to cooperate which in turn leads to safe waste disposal behavior.

## **Brief Theoretical Baseline and Hypothesis Development**

### ***Police Effectiveness***

The effectiveness of the police and the potential consequences they impose on individuals represent instrumental models of policing. This means that some community members expect the police to excel in solving crimes and maintaining order as a prerequisite for viewing them as legitimate authorities. According to the instrumental model, the police are considered effective when their actions and responsiveness contribute to an enhanced sense of security among community members, as elucidated by Sunshine and Tyler (2003). Additionally, the authors posit that for community members to perceive the police as legitimate, it's crucial that they see the police performing their duties competently. In simpler terms, people are more likely to cooperate with the police when they believe that the police are effectively handling social activities regardless of its environmental crimes or it's societal disorder. Building upon the theories established in existing literature, we investigate how effective policing influences the willingness of Djiboutian citizens to cooperate with waste disposal.

*H1: Police effectiveness positively affects Citizens' willingness to cooperate*

### ***Police Procedural Justice***

Extensive research in the field has indicated that the concept of procedural justice is crucial in positively influencing how the public views the legitimacy of the police. This has been discussed by scholars like Dai et al. (2011a), Mazerolle et al. (2013b), and Tyler (2004). Furthermore, in today's society, there is a growing expectation from communities that police departments prioritize fairness in their actions.



While the operationalization of procedural justice may exhibit variations, as discussed by Jonathan-Zamir et al. (2015), the theory of procedural justice places distinct emphasis on four well-defined elements within the context of police-citizen interactions: firstly, the element of respect, wherein community members express a desire to receive respectful treatment; secondly, the element of voice, highlighting the public's aspiration to have the opportunity to articulate their concerns; thirdly, the aspect of neutrality, underlining the public's expectation for the police to function as impartial third parties; and finally, the facet of trustworthiness, wherein the public anticipates the motives of law enforcement to be reliable, as expounded upon in the works of Dai et al. (2011b), Mazerolle et al. (2013a), and Skogan et al. (2015).

A growing body of empirical research, exemplified by Worden and McLean (2017), underscores the increasing significance of procedural justice in shaping public perceptions of law enforcement legitimacy. To enhance police legitimacy, agencies must actively embrace procedural justice principles, focusing on refining decision-making processes and improving interactions with the public (Dai et al., 2011c). When the public perceives police as legitimate authorities, it fosters a sense of civic duty, leading individuals to comply with legal norms. This creates a reciprocal relationship, where greater police legitimacy correlates with heightened public cooperation with law enforcement.

An in-depth analysis of intervention programs addressing police legitimacy, spanning the period from 1980 to 2007, revealed a consistent trend. It became evident that the incorporation of procedural justice principles within these programs played an important role in generating positive results. These positive outcomes included increased citizen compliance, greater cooperation with law enforcement, and heightened levels of confidence in or satisfaction with the police, as highlighted in the research conducted by Mazerolle et al. (2013b). Although procedural justice theory has proven helpful in improving the relationship between the police and community members, its 'efficacy' continues to be tested in several geopolitical contexts. Unexpectedly, results from these studies have seldom been applied in an environmental scope and citizens' waste disposal behavior.

*H2: Police procedural justice positively influences Citizens' willingness to cooperate*

### ***Citizen Cooperation toward Waste Disposal***

Environmental awareness and ecological knowledge are vital for sustainable practices. Existing literature often emphasizes the importance of environmental consciousness. Zhao et al. (2019) found that environmentally aware individuals are more likely to adopt sustainable lifestyles to protect the environment. Yen et al. (2017) noted that understanding environmental issues influences choices and purchasing habits. Li et al. (2016) highlight that our actions are key in contributing to environmental conservation. Chen (2015)

discusses environmental citizenship behavior, delving into how consumer decision-making aligns with pro-environmental goals, shedding light on the psychological aspects of sustainability.

Studies have also revealed that for the police to effectively ensure community safety, they heavily rely on the active cooperation of community members, as discussed by Pryce et al. (2017). Tyler (2005) also emphasized the essential role of public cooperation in achieving effective crime control. The author also suggested that the fear of getting caught by the police could be linked to a heightened awareness of the risks tied to illegal actions, such as environmental harm. On the flip side, individuals in the community who believe they're unlikely to face consequences for unlawful behavior may feel less compelled to follow the directives of the police. It's worth noting that while these studies have primarily focused on crime rates and social cohesion, there remains a gap in our understanding of how citizen cooperation extends to environmental activities.

Ostensibly, community behavior is one of the factors driving increased complexity in waste management, lack of awareness, and lifestyle of some people who tend to be less in favor of order and compliance with existing rules. However, the purpose of making rules is for the common good, not the interests of a group. as the law can function as a driving force for development, that is, to be able to bring the community forward. In other words, both the rule of law and their enforcers make people think about the future not just for a moment, and direct the community to change the pattern of conversation.

In a noteworthy study carried out by (Hernanda and Ayub, 2020) in the city of Kudus, Indonesia, the enforcement of environmental laws related to waste management in the sacred district was examined using two distinct approaches: preventive and repressive. The findings revealed that both of these approaches had the potential to raise awareness among the local community. Furthermore, it was observed that these approaches aligned with the principles of good governance by actively involving the community in the management of waste.

*H3: Citizen willingness to cooperate leads to positive Safe disposal behavior*

## **METHODOLOGY**

This article's purpose is to deeply examine the role of police administration involvement in Djiboutian was disposal effectiveness and reduction. We hypothesize that law enforcement bodies can play a key role in shaping citizens' waste disposal behavior toward a more environmentally friendly, and cleaner attitude such as consecutive recycling and reduction in illegal disposal activities. in doing so, we adopted two attributive factors to police administration (police procedural justice and police performance) one variable linked to citizens (Cooperation intention), and one dependent variable (effective waste

disposal). To attain these stated objectives, we use a quantitative approach for this study that comprises two software stages one related to examining the internal consistency of the questionnaire and the second is tied to exploring the causal effect of the variables on each other.

### **Data Collection**

An electronic questionnaire was designed for this study. In order to acquire a decent percentage of responders, several Djiboutian-administrated Facebook pages and other social media tools were used as publishing platforms for the questionnaire. The idea behind posting on these platforms can be traced to the fact that most Djiboutian citizens surf these pages, as a result proving a salient participation framework. Similarly, the temporal scope of this study coincided with the summer holiday period, during which a significant proportion of both Djiboutian institutions and residents were observed to be engaged in travel-related activities or leisurely pursuits within their domestic residences.

The questionnaire was ultimately open to the public for two months ranging from August to October 2022. This particular seasonal context posed substantial challenges for the implementation of conventional physical questionnaires, thus prompting a deliberate preference for the utilization of electronic questionnaire administration as a more pragmatic alternative. The questionnaire itself exhibited a structured composition comprising five distinct sections. The first section was primarily dedicated to eliciting demographic information from respondents, strategically designed to cultivate a sense of ease and familiarity among participants. This initial phase served as a foundational preamble before respondents proceeded to engage with the subsequent sections of the questionnaire, each thoughtfully constructed to explore the various dimensions encompassing the selected research variables. Making the questionnaire open with less restriction will permit most Djiboutian citizens including people from the regions to participate and share their desired opinions about rural municipalities and police forces' performance in enforcing green behavior.

The questionnaire was predominantly formulated in the French language, aligning with the official language of Djibouti. This linguistic choice was informed by the empirical fact that a substantial majority of the population possesses a higher degree of proficiency and comprehension in French compared to other languages. After closing the questionnaire, we received approximately 326 responses although only 290 were deemed fit for the study with complete information for data analysis. Overall, our sample size is larger than the absolute minimum population size advised for SEM. (Westland, 2010).

Following the completion of data collection, a data cleaning process was undertaken, involving the removal of incomplete or redundant questionnaire items. Subsequently, the

dataset underwent evaluation for internal consistency using SPSS, and complex structural modeling using Amos software was conducted to enhance data reliability. Importantly, the data processing and analysis phase was efficiently executed within a one-week timeframe, while the visualization component required a more extended period for meticulous development.

### **Questionnaire Design and Measurement**

Measures and items employed earlier on waste management and police administration studies served as the foundation for the current questionnaire's formulation. Questionnaire items on police procedural justice, police performance, and citizen willingness to cooperate were taken from (Woo et al., 2018; Laeequddin et al., 2022; Sun & Hu, 2018; Frempong et al., 2018; Liu, & Hsu, 2022) and items on safe waste disposal were inspired from (Guerrero et al., 2013), as shown in *Table 1*. The questions in the first section of the questionnaire were based on the respondents' demographics, including their gender, age, location, and access to solid waste disposal sites near their homes; the second section contained items for dependent variable and independent variables, which were measured on a five Likert scale.

### **Methods of Analysis**

We used IPM SPSS version 28 to prepare the descriptive statistics, as well as the reliability analysis of the dataset, while Amos version 24 was used to conduct the structural equation technique, mostly, due to its powerful performance in capturing the causal effect and the relationship between the variables (Tommasetti et al., 2017). In the SPSS software, both the Cronbach alpha and explanatory factor analysis were conducted. Similarly, to provide convenience and boost the rate of participation, the questionnaire was fully written in French. Both confirmatory factor analysis and explanatory factor analysis were performed. However, we removed items that affected the model's reliability and validity, and as a result, a new questionnaire composed of 17 items was finally developed.

**Table 1. Scales Adopted for the Study and their Sources**

Constructs	Items	Item ID	Sources
Police Effectiveness PE	The police have been effective in controlling hazardous wastes placed on streets.	PE-1	(Woo et al., 2018; Laeequddin et al., 2022)
	The police do a good job of preventing illegal dumping sites such as (streets, public places, and inhabitant spaces).	PE-2	
	The police had been undertaking a waste separation campaign.	PE-3	
	The police impose fees or other reasonable sanctions on illegal waste disposal.	PE-4	
Police Procedural Justice PPJ	The police try to assist people with recycling, especially older citizens.	PPJ-1	(Sun & Hu, 2018 ; Frempong et al., 2018)
	When the police deal with people in my neighborhood about illegal waste activities they always behave according to the law.	PPJ-2	
	The Djiboutian police department is aware of the country's waste situation.	PPJ-3	
	The police give an honest explanation for their actions.	PPJ-4	
Citizen Willingness to Cooperate CWC	I often report illegal waste disposal to the police.	CWC-1	(Guerrero et al., 2013 ; Liu, & Hsu, 2022)
	I would discuss and recommend to the police department some waste reduction strategies in the city.	CWC-2	
	I will provide information to the police when waste collectors are uncooperative or not coming.	CWC-3	
	I am willing to actively engage in solid waste treatment with interested authorities.	CWC-4	
	I will assist and cooperate with the police to identify and find people who don't respect recycling and fail to portray a safe waste disposal attitude.	CWC-5	
Safe Disposal Behavior SDB	I intend to reduce my waste with the presence of official disposal sites.	SDB-1	(Guerrero et al., 2013)
	I practice using reusable materials	SDB-2	
	I am willing to pay additional charges and contribute to the country's cleanses (Assume you have to pay 250FD; 1.45 USD, every month).	SDB-3	
	I always discard my waste in its intended place.	SDB-4	

## ANALYSIS AND RESULTS

### Descriptive Statistics

290 of our respondents, (n = 114) were female respondents, and (n = 176) were male participants. Further, regarding their level of professional life, people who still attend educational institutions seem to have the highest score (n = 113), for visualization, kindly refer to the spider chart in *Figure 1*. The x-axis on the left shows the number of people who selected students (notice from the graph that the optimal number is 100, it surpasses the fixed number, reaching 113). Whereas people working in the private sector and public sector are estimated between n=49 and n=77, and people who selected Others are n=51, respectively see *Figure 1*. Our sample also identified their age groups, 130 of the respondents fall between 15 and 25 years old, which can be explained by the relative presence on social media platforms, and 84 identified themselves as between 26 and 35, observe *Figure 2*, on the feasible area (15-25) it appears to be lower than 200 and approximately higher than 100. People aged +40 are estimated to be only 20 due to low presence on social media platforms, *Figure 2*. Whereby, it appears most of our responders reside in Djibouti city, Ali-Sabieh, and Dikhil, *Figure 3*. Moreover, alongside general demographic questions, we proceeded to know more formally if the respondents have access to certain solid waste disposal or recycling sites; n=217 had said no whereas n=73 voiced yes.

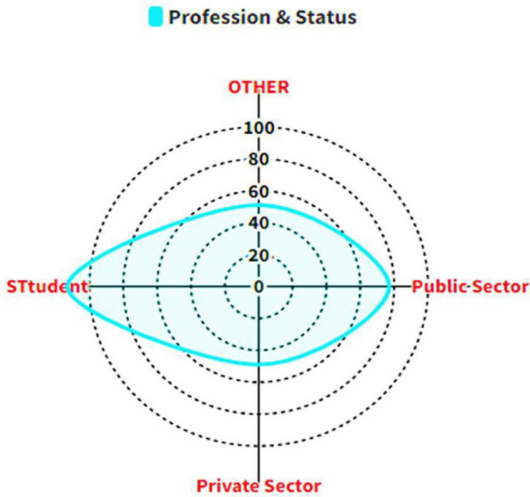


Figure 1. Responder's Profession

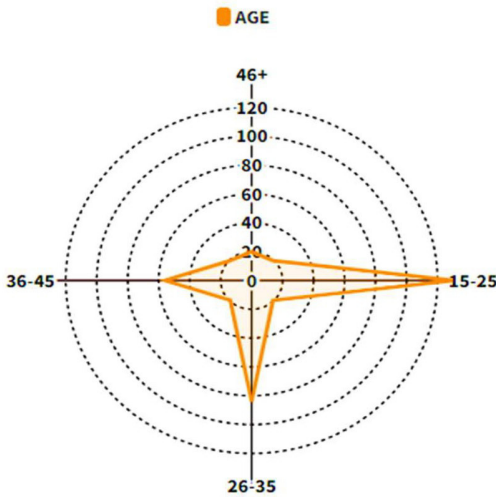


Figure 2. Responder's Age

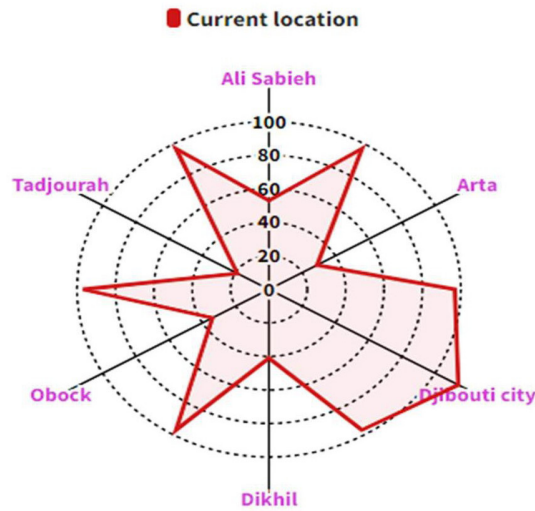


Figure 3. Responder's Location

### Model Measurement Validity and Goodness of Fitness

#### Model Validity

In the Amos model, we examined several reliability analyses concerning our dataset. It can be seen from *Table 2* that all the items have a loading greater than 0.4. The components' convergent validity was then examined using the Average variance extracted (AVE) and composite reliability methods (CR). *Table 2* displays all factor loadings, all of which are greater than the suggested threshold of 0.5 (Chin et al., 2008). Whereas the (AVE) which reflects the overall amount of variance in the indicators accounted for by the latent constructs exceeds the recommended value of 0.5 (Hair et al, 2010b). Similarly, the KMO and the Cronbach estimates for all the variables confirmed the overall measure of sampling adequacy which was 0.809, higher than the recommended value by (Chan,& Idris, 2017) which is >0.60, additionally, Bartlett's test provided support for the appropriateness of the factor analysis which was significant at  $p < 0.01$ .

**Table 2. Discriminant Validity and Reliability of the Measurement**

Indicators	Factor Loading (CFA)	Factor Loading (EFA)	Critical Ratio	Reliability	Ave	Min	Max	Mean
<b>Police Effectiveness</b>								
PE-1	0.854	0.811	0.867	0.861	0.620	1	5	2.55
PE-2	0.832	0.790				1	5	2.91
PE-3	0.783	0.867				1	5	2.78
PE-4	0.770	0.880				1	5	2.71
<b>Police Procedural Justice</b>								
PPJ-1	0.819	0.922	0.941	0.915	0.792	1	5	2.90
PPJ-2	0.952	0.907				1	5	2.85
PPJ-3	0.959	0.912				1	5	2.91
PPJ-4	0.845	0.940				1	5	2.80
<b>Citizen Willingness to Cooperate</b>								
CWC-1	0.743	0.786	0.814	0.806	0.520	1	5	3.96
CWC-2	0.730	0.772				1	5	4.06
CWC-3	0.509	0.626				1	5	3.64
CWC-4	0.736	0.754				1	5	4.02
CWC-5	0.709	0.802				1	5	4.03
<b>Safe Disposal Behavior</b>								
SDB-1	0.862	0.858	0.879	0.865	0.648	1	5	4.10
SDB-2	0.870	0.837				1	5	3.91
SDB-3	0.689	0.808				1	5	4.06
SDB-4	0.784	0.852				1	5	4.04
KMO test: 0.809								
CFA: Confirmatory factor analysis								
EFA: Explanatory factor analysis								

### Model Fitness

The last step of the SEM involves determining how many parameters should be evaluated with the cut-off value of goodness of fit. The model's Goodness of Fit revealed the following values prior to the application of modification indices: CFI = 0.941, TLI = 0.949, IFI = 0.950, RFI = 0.938, NFI = 0.938, and RMSEA = 0.56. The five-factor model, however, showed a satisfactory match when certain changes were made in accordance with the modification indices' advice, and all the values were within their respective common acceptability criteria, as shown *Table 3*. Similarly, the HTMT which assesses the discriminant validity, for instance, a lack of discriminant validity might be inferred if the HTMT value is greater than this cutoff point (0.85) (Jayashree et al., 2021), however our results criterion indicates a value less than the recommended threshold, therefore, further validating the model's internal validity.



**Table 3. The Model's Validity Measurement**

Criteria	Cut-Off Value	Threshold	GOF Condition
CMIN/df	1.621		Closer to 1 better
CFI	0.975	>0.95	Excellent
SRMR	0.043	<0.08	Excellent
RMSEA	0.045	<0.06	Excellent
PClose	0.780	>0.05	Excellent
TLI	0.969	>0.95	Excellent
IFI	0.975	>0.95	Excellent
NFI	0.958	>0.95	Excellent

**Table 4. Summary of Hypothesis Testing Results**

			Estimate	S.E	C.R.	P	Decision
Citizen Willingness to Cooperate	←	Police Effectiveness	0.249	0.056	3.565	***	Supported
Citizen Willingness to Cooperate	←	Police Procedural Justice	-0.030	0.032	-0.48	0.631	Not Supported
Safe Disposal Behavior	←	Police Procedural Justice	0.231	0.035	3.73	***	Supported
Safe Disposal Behavior	←	Citizen Willingness to Cooperate	0.186	0.077	2.433	0.015	Supported

After establishing construct measurement and model properties, we proceeded with hypotheses testing. The path analysis and the estimation summary can be seen in *Table 4*. The level of effectiveness of law enforcement departments positively and significantly affects citizens' willingness to cooperate. For instance, Favorable police performance relatively increases Djiboutian citizens to willingly cooperate by 25% ( $\beta = .249$ ,  $p < .001$ ) which in turn boosts their level of safe disposal behavior by 18% ( $\beta = .186$ ,  $p < .005$ ). Although our respondents manifested the existence of poor police effectiveness and demeanor in the arena, they portrayed a positive attitude toward engaging in solid waste treatment with police authorities. On the other hand, Police procedural justice doesn't have a direct effect on citizens' willingness to cooperate ( $\beta = -.03$ ). However, we decided to check for a direct effect going from police procedural justice to safe disposal behavior, see *Figure 4*. Interestingly, albeit not having an impact on cooperation attitude it has a positive influence on behavioral

safe disposal. This implies that, with an increase of 1% in police procedural justice, safe disposal behavior among Djiboutian residents increases by 23% ( $\beta = .231, p < .001$ ).

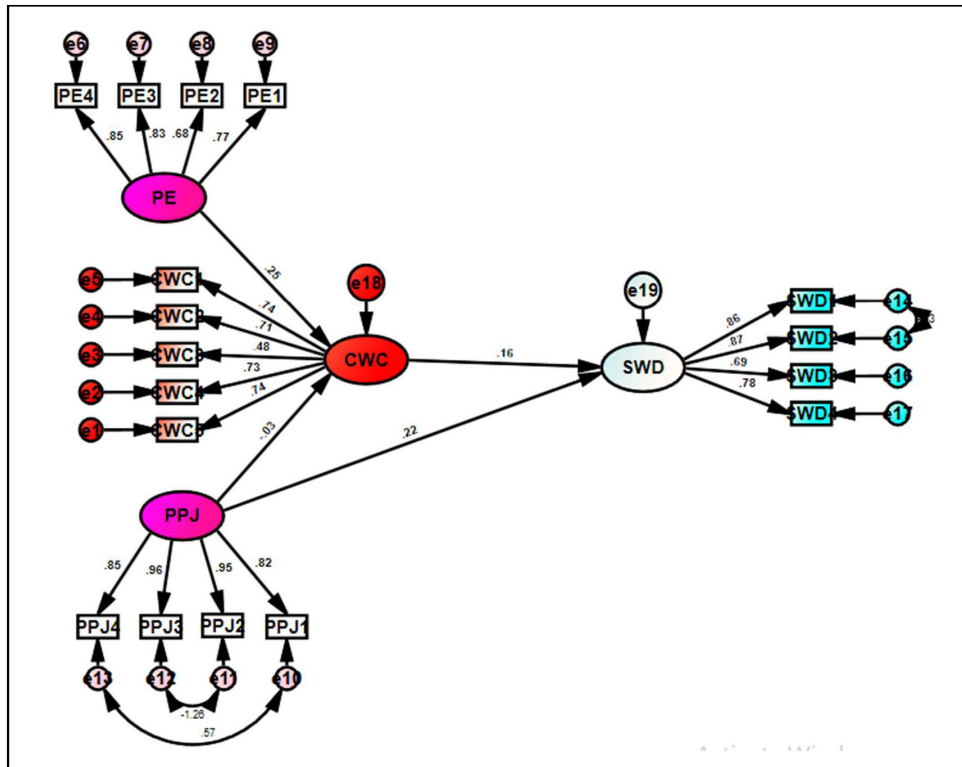


Figure 4. Structure Pattern Diagram

## DISCUSSION

In Djibouti, waste management is actively practiced by the general public and the informal sector, since so many individuals follow correct garbage storage, disposal, waste sorting, and informal recycling. However, due to issues like the politicization of waste disposal and a lack of resources; considering the country’s income status and other potential externalities that interfere with embracing recycling strategies, and the general belief among the community that waste treatment exclusively falls on the government’s responsibility. These impediment factors made the government, operationally and technically, incapable of managing such cumulative waste. Therefore, to make waste disposal successful and sustainable, the Djiboutian government emphasized, the involvement of all stakeholders. Keeping in line with this public collective participation, the current paper aims to study the role of incorporating law enforcement (Police) in infusing safe waste disposal behavior among Djiboutian citizens. Djibouti has continuously experienced illegal waste disposal in unsolicited public spaces and other governmental properties, despite the mayor’s consecutive warnings, public waste management is deteriorating at an unprecedented

pace. It is hoped the empirical findings of this research could provide some assistance to Djiboutian public authority in better addressing the situation.

The results of the hypothesis findings show that police effectiveness created a significant positive influence on Djiboutian citizens' willingness to cooperate, which in turn, indirectly affects their waste disposal behavior. Most responders believed if the current police administration gets involved in waste treatment and preventing illegal waste disposal activities (Which is not entirely the case) the likelihood of portraying positive disposal behaviorism and recycling is more probable. Indeed, safe waste disposal combines a person's mental processes and social concerns by emasculating what is societally relevant (Raghu & Rodrigues, 2020). Although, it is much questionable the extent of civil servants (police) engaging in monitoring safe disposal behavior, since this relative social behavior may be particularly, only linked to citizens' level of awareness about the consequences of practicing illegal disposal of waste (Reijonen et al., 2021; Fagariba & Song, 2017. Which, more formally, translates to, the role of police could, perhaps sufficiently reduce the rate of waste, however, it depends mostly on citizens' way of behaving. However, on average, our responders manifested a low perception of police effectiveness in handling ecological cases and providing convincing answers about their actions.

Furthermore, the role of the police in addressing national waste crises should not be limited to imposing certain fees on mere environmental pollution, rather public working sanctions should be emphasized more, such as providing free cleaning services for a certain limited period of time to compensate such as environmentally degradable behavior. However, according to our participant's responses, additional waste management strategies like waste reduction, recycling, or diversion are not given priority by the Djiboutian public authority. Whereas, it was noted that police authorities only give a scant amount of information about various trash management techniques.

Although, this can't be only blamed on the police administration. Officials, also need to expand the information on sustainable waste options supplied to community members. People who have the necessary knowledge and environmental education abilities are driven to take part in environmental protection plans and actions. Therefore, citizens' knowledge of personal consumption patterns will rise if government officials give education on waste separation, beginning with trash reduction (Liu & Hsu, 2022). In fact, there are several obstacles to sustainability, including public understanding and population expansion. Community members would be more motivated and open to participating if they were made aware of the advantages of source reduction and trash separation (Phan et al., 2021; Altikolatsi et al., 2021; Labib et al., 2021).

On the other hand, police procedural justice, which includes, the way police authorities behave when conducting their duties vis-a-vis citizens, indicated an insignificant impact on citizens' cooperation attitude. Yet, a direct effect was discovered between police procedural justice and safe disposal behavior. This operationalization of police attitudes contributed positively to citizen disposal behavior without fully altering their cooperation status. It is worth noting that when police forces act according to the rule of law, and respect citizens' values and rights, safe disposal behavior materializes. Certainly, law enforcement officers bring criminal charges against violators to encourage everyone in the community to fulfill their responsibilities for trash management. For instance, all sanitary offenses are punishable in several jurisdictions. This includes improper garbage disposal, failing to clean the gutters around one's home, and refusing to participate in scheduled community cleaning programs (Mamady, K, 2016). And the fact, that the Djiboutian community was aware of this plausible scenario of punishable offense despite the government's failure to further implement such measures and citizen's continuous unreasonable waste disposal behavior, retroactively, attests to the authorities' institutional failure to effectively communicate.

Moreover, the relative role of police administration in delivering adequate, safe waste disposal behavior can be restricted by the government's indirect involvement. For instance, Due to their links to higher government officials, offenders frequently avoid penalties and/or fines. Some politicians become involved in cases of sanitary misdemeanors in an effort to maintain their party's support, win over supporters, and expand their political careers. Additionally, financial constraint and limited budgetary allocated to police administrations restrict their extent of engagement in waste disposal monitoring. Surprisingly, sufficient responders showed a favorable positive likelihood of contributing extra fees for municipalities' cleaning and recycling adoption, although without independent proper entities supervising such as monetary usage, waste reduction, solid waste management, and introducing recycling incentives would be challenging.

## RECOMMENDATION

First, Djibouti still lacks a legal framework that sets the institutional foundation for waste management. Hence, along with clear monitoring and feedback systems, a comprehensive national legal framework must be created and implemented. The country's waste treatment structures also call for shifting revenue-generating activities away from the national government and toward subnational ones, which would strengthen the political and budgetary independence of regional governments and minimize the role of the central government. An increase in waste treatment would be encouraged by the updating and implementation of environmental rules and regulations, such as financial incentives and disincentives. Likewise, by establishing cooperation models, local

governments may share the burdens of running solid waste frameworks, lessening their vulnerability and the economic inequalities within their respective regions.

The economic burden placed on local governments would be reduced by including local residents, and NGOs in the operational plan. This would also make it easier to adopt financially demanding frameworks like door-to-door collecting programs. Similarly, the implementation of training and awareness programs that promote the technical and ecological competence of government officials can increase the effectiveness of waste management systems. Furthermore, environmental impact evaluations would help safeguard politically and socially disadvantaged communities by allowing for the selection of disposal locations based on reliable scientific data.

Although the national environmental law adheres to the principle "*polluer payeur*" nonetheless, the country is still yet to adopt the "Pay as you throw" strategy to reduce unnecessary waste rate. Creating an app for trucking waste collectors, the app could include notifying the specific day those trucks are not coming (France and the Japanese governments donated some waste collectors to Djibouti), although many citizens expressed their concerns about how these trucks had not been active in recent years, especially in rural areas. Finally, creating workshop activities incorporating police administration forces and Djiboutian citizens would be cardinal. Since this collective workshop will involve street or public space cleaning, it will not only boost the country's level of cleanliness but will eventually increase the trust between the police and citizens.

## CONCLUSION AND LIMITATION

The study juxtaposed police administration workers with the safe waste disposal behavior of Djiboutian citizens. An online questionnaire in which 290 responders was used for the structural equation modeling. According to our empirical findings, the relative effectiveness of the police department has a positive effect on Djiboutian citizens' willingness to cooperate which adversely affects positively their safe waste disposal behavior. On the other hand, police procedural justice scantily contributes to a cooperation attitude, however, a direct path effect between law enforcement procedural justice and safe disposal behavior was detected, further supporting the role of civil servants in influencing citizens' waste management behavior. These results demonstrate the advantage relative to enforcing and expanding police jurisdiction to environmental and ecological issues. In the same vein, it is hoped the following results will contribute to the Djiboutian illegal waste reduction by providing the government a framework for the active role of the police department in further infusing collective responsible, adequate, and safe disposal of waste behavior. Although the paper has its own limitations. This study used several limited variables that capture citizen-police perceptions, upcoming studies could

incorporate the rate of solved cases and crimes by the police, police transparency, and friendliness. Moreover, despite collecting sufficient datasets, future authors could try to overcome this population gap. Finally, this study can only be generalized to low or medium-income countries that most struggle with illegal waste disposal, future research could focus more on developed nations while taking into consideration the role of the private sector, and the responder's income level while simultaneously making a comparative study between urban and rural area.

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