

Tax Managerial Model of Public Institutions

—Case of Urban Transport Service and Communication Routes

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Abstract

This work deals with the management mode of public institutions in the city of Lubumbashi and more particularly the urban transport service and tricycle and motorcycle communication routes. In the digital age, where technological revolutions continue to follow one another, what can be the contribution to the management method of our public institutions? Starting from an observation that the number of motorcycle taxis had significantly increased in the city, we wondered about the contribution of this proliferation to public revenue. We therefore went to the urban transport and communication routes service to see how this service is managed and, in particular, the collection of motorcycle taxi fees. The result of our study shows that different tasks are decentralized and manual. Thus, we propose a purely automated management model, it goes from the registration of motorcycle taxis, to the collection and control of the road fees which accrue to them, in concrete terms it will be an automatic recovery system, it will be in perfect synchronization with the electronic database of the tricycle and motorcycle transport service, the taxpayer must have an identifier (with bar code) provided by the service, whether it is payment or control, everything must go through the motorcycle taxi identifier. For the controllers, they will have to each time enter the identifier into a telephone or scan the bar code to have the up-to-date situation of the motorcycle taxi fee.

Keywords

Tax Management, Motorcycle Taxi, Collection, Automation, Industry 4.0, Lubumbashi

1. Introduction

The field of NICT is one of the fields which is experiencing the greatest number of changes, today we are already talking about industry 4.0, an industry which claims to be of the future, characterized by several reforms, Industry 4.0 is an industrial

revolution which aims to transform production processes using digital technologies such as the Internet of Things, artificial intelligence, robotics and blockchain. This industrial revolution has implications in many areas, including taxation. Indeed, the use of these technologies can help simplify tax processes, improve the accuracy of tax declarations, detect tax fraud, and even maximize public revenue.

Tax collection is an important subject for any government because it provides the financial resources needed to finance public spending. Taxes are collected from citizens and businesses, and can be used to finance social programs, public infrastructure and other essential services.

In this work, we will focus on taxes and road charges in the city of Lubumbashi. Part of an observation such as taxes and road charges in our city of Lubumbashi only concerns one category of vehicles, namely four-wheeled vehicles. However, we are increasingly seeing a proliferation of motorcycle taxis in the city, which until now are not required to pay any tax or fee whatsoever. However, taking the example of Ordinance-Law 88-029 creating the special road traffic tax, in its article 2 it is stipulated that the special road traffic tax is imposed on all vehicles permitted to circulate on the public road network regardless of the quality of the owner. This represents a loss of revenue for the public treasury.

This is how we asked ourselves the question of knowing; why does the transport service of the city of Lubumbashi not collect certain taxes and road charges for certain motorists? By what mechanism can we optimize the collection of certain taxes and road charges?

Being aware of the interest that the state has in the recovery of public revenues with a view to efficient and optimal management, this work will aim to understand the obstacle that the city of Lubumbashi has and more precisely the transport service and communication routes, the recovery of certain road charges, and to provide a solution thanks to the technological innovations of industry 4.0 which continue to surprise us. Specifically, it will be a question of studying the managerial mode of the transport service and communication routes of the city of Lubumbashi, understanding its limits and providing solutions.

To manage a city, we absolutely need resources, and therefore the optimization of resources becomes a key element in management. As [Schumpeter \(1935\)](#) says, a manager is a strategic actor, he must be able to determine the long-term purposes and objectives of his entity, it must be designed as an organization intended to live as long as possible, and for our case we consider the urban transport service as an entity.

Based on all that follows, the anticipatory answer to the questions asked is as follows:

The urban transport and communication routes service is unable to collect certain taxes and road charges following constraints linked to the identification of motorists and their geolocation. We can optimize the collection of certain road fees and taxes thanks to technological innovations from Industry 4.0.

The explanatory theoretical model below shows us that the study is based on two variables:

- The explanatory variable is innovation in NICTs in industry 4.0.
- The variable explained is the fiscal management of public institutions in the city of Lubumbashi (**Figure 1**).

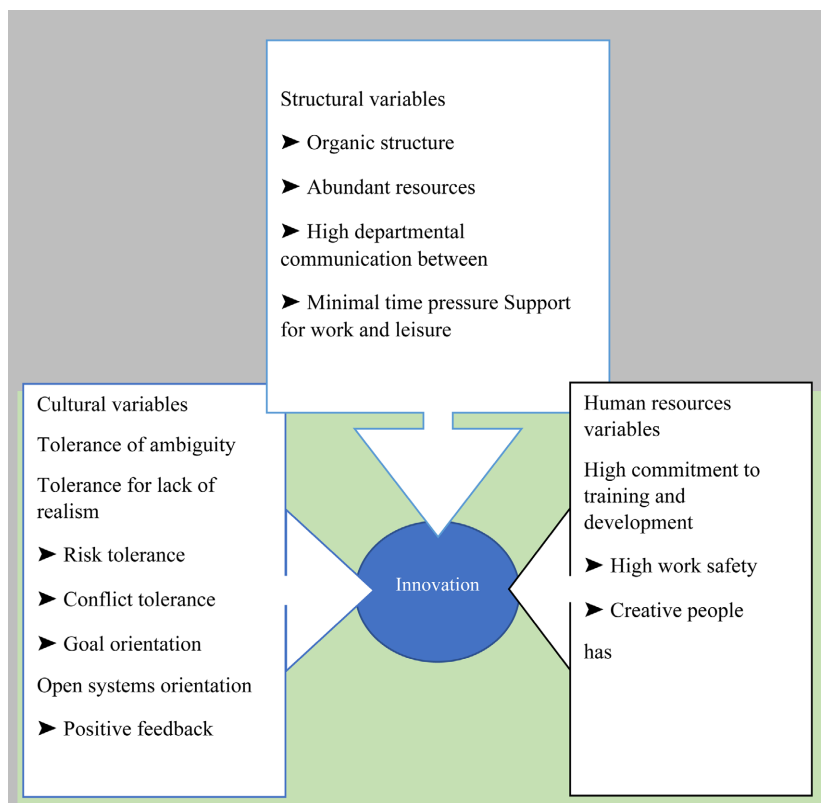


Figure 1. Organizational variables favoring innovation (Robbins et al., 2011).

2. Methodology

Based on an observation made at the Lubumbashi town hall, we will proceed with an inductive approach to generalize the fact.

The qualitative approach will be useful to us in allowing us to analyze and explain the data. This will be accompanied by tools such as the interview grid.

According to Mouchot (2003) the question that the inductive approach attempts to answer is the following: how do we move from a singular statement to general statements. Intuitivists answer: we move from singular statements to a general statement by inductive inference, that is to say by generalization of a series of observational statements into a universal law.

3. Literature Review

Fiscal management in public institutions is a crucial area that influences economic stability, wealth redistribution and the financing of public services. It encompasses all the processes by which governments collect, manage and spend tax resources.

3.1. Roles of Public Institutions in Fiscal Management

3.1.1. Collection of Revenue

Public institutions are responsible for collecting taxes, fees and contributions. This includes the establishment of efficient and equitable tax systems to maximize public revenue, hence it will be important in our work to analyze the current tax system in terms of collecting revenue from Moto taxis in the city of Lubumbashi, see how the state can maximize its revenues while avoiding any shortfall.

3.1.2. Redistribution of Wealth

Tax management helps reduce economic inequalities through redistribution mechanisms. Progressive tax systems, where tax rates increase with income, play a key role, although for the city of Lubumbashi we see that some redistributions of resources are still not palpable in the eyes of the population.

3.1.3. Financing of Public Services

Tax revenue funds essential services such as education, health, infrastructure and security. Effective management ensures that these services are accessible and of high quality.

3.1.4. Economic Stability

Tax policy can be used as a tool for economic stabilization. During a recession, governments may increase public spending or cut taxes to stimulate the economy.

3.1.5. Compliance and Fight against Tax Evasion

Public institutions must put in place mechanisms to ensure tax compliance and combat tax evasion, which requires effective tax administration and incentives to encourage compliance with tax obligations, and for this reason alone, the Industry 4.0 plays a key role in the deployment of more effective means of control in terms of transmission of information in real time and control of irregularities as well as in the efficient production of different collection reports in different areas of the city of Lubumbashi.

3.2. Theoretical Framework

3.2.1. Fiscal Optimum Theory

This theory explores how governments can maximize social welfare through taxation and public spending. It focuses on the balance between economic efficiency and social equity (Musgrave, 1959). As for the city of Lubumbashi, it is a developing city, which needs substantial financial means to accelerate its development in order to achieve social balance, the redistribution of revenue collected from motorcycle taxis could significantly help rebuild the city's infrastructure and at the same time allow the common people to find themselves in their activities.

3.2.2. Social Contract Theory

The social contract postulates that citizens agree to pay taxes in exchange for public services. This highlights the importance of transparency and accountability in tax management (Rousseau, 1762). For this theory, it is a question of a will which must come from both sides, those liable must voluntarily consent to the payment of their taxes, this requires an increased mentality on the part of the individuals concerned.

3.2.3. Civil Service Model

This model examines how tax decisions are influenced by political, economic and social factors. It highlights the role of institutions in the formulation of tax policies (North, 1990). And any tax policy must adapt to the reality and context of the city for it to be effective and sustainable.

4. Results

The city of Lubumbashi is full of several public services, in fact, our observation and our solution concern the transport service and communication routes.

This is a service which takes care of the registration of motorists, the monitoring of vehicle conditions, the monitoring of automobile sales garages, the collection as well as the control of road charges for taxis and motorcycle taxis. dedicated to public transport on behalf of the city of Lubumbashi.

From our descent, we realized that in fact the town hall collects road fees from motorcycle taxis, this is done via partners of social organizations such as ANAMCO, CEMCO, LITEMCO, etc.

These partners carry out semi-manual collections, and they report to the urban transport and communication routes service, which carries out monitoring via a manual register, this register is classified annually, it also lists all motorcycle taxis in the city of Lubumbashi. For certain taxes which are not yet applicable, the DRHKAT service is in operation for an effective implementation of these fees, for motorcycle taxis this involves payments of the automobile sticker which will be annual.

4.1. Current Circuit

4.1.1. Registration

The motorcyclist presents himself at the town hall with his motorcycle, his registration is made in a register where we write; his name, the date of registration as well as the identifiers of the motorcycle.

4.1.2. Payment

Several associations are responsible for collecting road taxes, payment is daily for some of them, the associations collect the money and provide in return a piece of paper which serves as proof. These are the following associations: LITEMCO, CEMCO DEV, CEMCO, AUMCO, ANAMCO, FENATRAD (Figure 2, Figure 3).



Figure 2. Proof of payment.

RECETTES DES MOTOS JUIN 2021			
N°	DATE	MONTANT	CUMUL
1	mardi 1 juin 2021	623 000,00	
2	mercredi 2 juin 2021	587 000,00	
3	jeudi 3 juin 2021	561 000,00	
4	vendredi 4 juin 2021	509 000,00	
5	samedi 5 juin 2021	379 000,00	
6	dimanche 6 juin 2021		
7	lundi 7 juin 2021	570 000,00	
8	mardi 8 juin 2021	605 000,00	
9	mercredi 9 juin 2021	567 500,00	
10	jeudi 10 juin 2021	575 000,00	
11	vendredi 11 juin 2021	560 000,00	
12	samedi 12 juin 2021	410 000,00	
13	dimanche 13 juin 2021		
14	lundi 14 juin 2021	570 000,00	
15	mardi 15 juin 2021	566 500,00	
16	mercredi 16 juin 2021	559 000,00	
17	jeudi 17 juin 2021	492 500,00	
18	vendredi 18 juin 2021	565 000,00	
19	samedi 19 juin 2021	351 000,00	
20	dimanche 20 juin 2021		
21	lundi 21 juin 2021	587 000,00	
22	mardi 22 juin 2021	615 000,00	
23	mercredi 23 juin 2021	589 000,00	
24	jeudi 24 juin 2021	450 000,00	
25	vendredi 25 juin 2021	547 000,00	
26	samedi 26 juin 2021	364 500,00	
27	dimanche 27 juin 2021		
28	lundi 28 juin 2021	560 000,00	
29	mardi 29 juin 2021	573 000,00	
30	mercredi 30 juin 2021		
TOTAL		13 336 000,00	

Figure 3. Monthly report of the urban transport service.

4.1.3. Control

Associations request proof of payment in paper format (Figure 4).

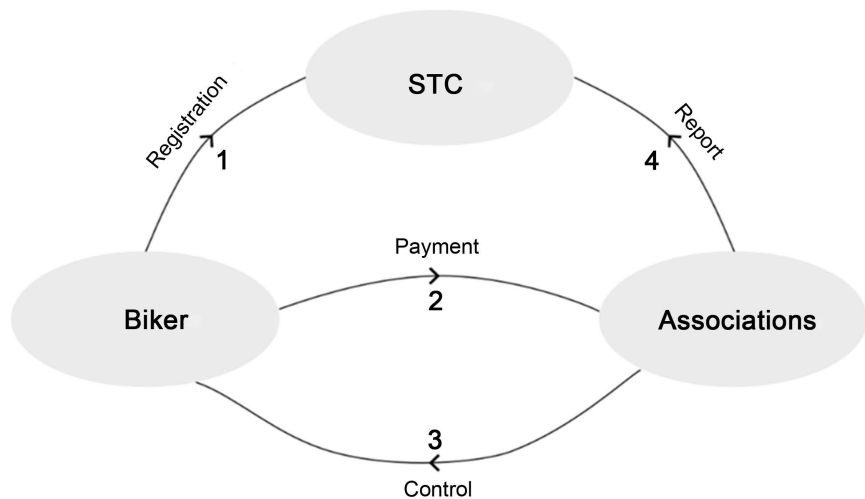


Figure 4. Current management model.

4.2. Problems Noted

4.2.1. Registration

Since 2017 to date, the number of motorcycle taxis has exponentially increased in the city of Lubumbashi, according to the transport and communication service, we now have more than 2000 motorcycle taxis. Given this figure, imagining a manual recording would be tedious, tiring work and could even present risks of loss.

4.2.2. Payment

The proper functioning of an institution relies above all on the resources it has, financial resources are one of the most important, say that the collection of road

fees from motorcycle taxis is done by agents and that it is up to them to report to the transport service and communication routes can have harmful consequences on the functioning of the service, or even the town hall, in the sense that the report can be erroneous, may have disparities in the sense that there is no counter-verification, the collection period and that of the report are far apart with a risk of infidelity, Considering the number of taxis, the resources deployed for these collections are not cannot produce a complete job throughout the city, hence many motorcycle taxis can defraud,...

4.2.3. Control

Proof of payment in paper format is easy to get lost and cause misunderstandings, carrying out the manual control for so many motorcycles can be difficult, etc.

4.3. Proposed Solution

4.3.1. Registration

In a system with information: the name, the identifiers of the motorcycle, after registration a sticker with an identifier with bar code must be given to the motorcyclist.

4.3.2. Payment

The service must provide the various financial institutions with its section, to allow each motorcycle cyclist to pay by the means that suits them: Airtel money, mpesa, bank, etc. So once the payment is made, the registration database is refreshed.

4.3.3. Control

The controllers will just be equipped with a telephone or a device allowing the bar code to be scanned, once scanned, they will have all the information concerning the motorcycle, thus avoiding loss of time and/or proof of payment.

4.4. Necessary IT Infrastructure (Figure 5)

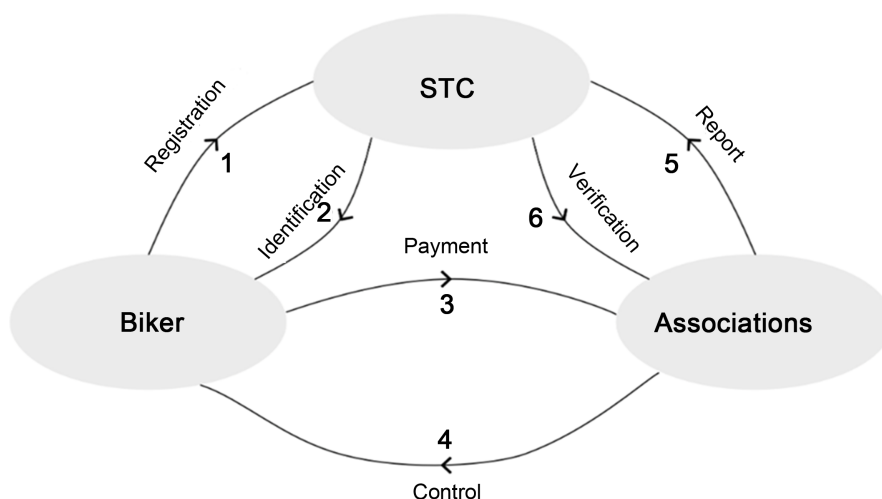


Figure 5. Computerized managerial model.

4.5. Necessary IT Infrastructure (Figure 6)

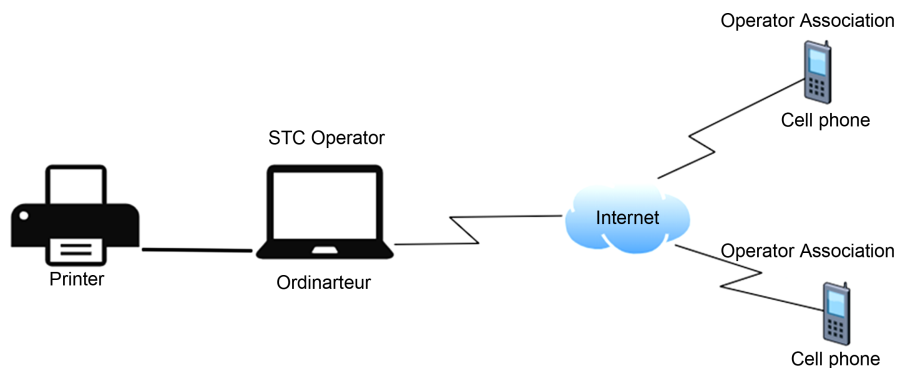


Figure 6. Diagram of the IT infrastructure prerequisite.

5. Discussion

Although Industry 4.0 offers many advantages in the area of taxation, there are also disadvantages to consider. Here are some of them:

5.1. High Costs

Generally speaking, the adoption of technologies such as AI and blockchain can be costly for public institutions which are already struggling to mobilize the necessary resources to meet the fixed and basic costs incurred by them, for example, the urban transport service of our city is still not computerized, the tasks are still manual for the majority.

5.2. Need for Technical Skills

The implementation of these technologies requires technical skills, which can be a challenge for some of its sub-services, this amounts to an upgrade of the different actors, an action which refers to a Another problem is that of the acceptance of this technological migration in a country where resistance to change reigns for certain actors. This comes down to an increased willingness of leaders to change.

5.3. Data Security

Collecting and storing large amounts of tax data can be vulnerable to cyberattacks, which can compromise data security given the various factors linked to our African context.

5.4. Complex Tax Regulations

Although automation can help simplify tax processes, tax regulations are often complex and constantly changing, which can make compliance with tax regulations difficult.

6. Some Solutions

To deal with each of these disadvantages, the urban transport and communication

route service of the city of Lubumbashi can adopt the following strategies:

6.1. High Costs

- Budget Planning: Establish a detailed financial plan to allocate resources for technology adoption. This may include return on investment (ROI) analyzes to justify spending.
- Public-Private Partnerships: Collaborate with private companies and local universities to share implementation costs and benefit from their expertise.
- Grants and Funding: Look for government grants or international funding that supports technological innovation.

6.2. Need for Technical Skills

- Training and Development: Invest in training programs for staff to develop the skills needed to use new technologies.
- Collaboration with Universities: Establish partnerships with academic institutions to train students and recruit qualified talent. This can start from professional integration during internships and follow up until hiring.
- Mentoring and Knowledge Exchange: Establish mentoring programs where experienced employees can train their colleagues on new technologies.

6.3. Data Security

- Implementation of Security Protocols: Develop robust data security policies, including encryption, multi-factor authentication and continuous monitoring.
- Security Awareness: Train staff on data security best practices to minimize human errors.
- Regular Audit: Perform regular audits to identify and correct vulnerabilities in systems.

6.4. Complex Tax Regulations

- Expert Consultation: Engage tax and regulatory experts to navigate complex laws and ensure the institution remains compliant.
- Adaptation of Internal Processes: Update internal processes to integrate regulatory requirements into daily operations.
- Advocacy for Favorable Policies: Collaborate with other institutions to advocate for tax policies that support innovation and technological adoption.

7. Conclusion

In summary, although Industry 4.0 offers many benefits in the area of taxation, it is important to consider the potential downsides and ensure that the benefits outweigh the costs and risks associated with the adoption of these technologies. More precisely, it will be a question of taking into account the context in which the public institutions of our country evolve and more particularly the transport service and communication routes of the city of Lubumbashi. The political, social,

economic and security situations are also factors to take into account before any migration to this management method.

Conflicts of Interest

The author declares no conflicts of interest regarding the publication of this paper.

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