Adoption Of E-Mobility And Perfomance Of Sustainable Development Goals In Nairobi City County, Kenya.

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DOI: 10.29322/IJSRP.13.09.2023.p14122
https://dx.doi.org/10.29322/IJSRP.13.09.2023.p14122

Paper Received Date: 16th August 2023
Paper Acceptance Date: 19th September 2023
Paper Publication Date: 26th September 202

Abstract: The chief impartial was to inaugurate the relationship between adoption of E-mobility and performance of sustainable development in Nairobi, and the specific objectives remained: economic situation, social situation, environmental situation, technological situation on performance of sustainable development in Nairobi. The study was theoretically guided by the endogenous growth theory, sustainable livelihoods approach, resource dependency and technology acceptance model.

Keywords: Economic situation, social situation, environmental situation, technological situation and performance of sustainable development

1.1 Introduction

Development Studies is a multi- and inter-disciplinary field of study which seeks to understand the interplay between social, economic, political, technological, ecological, cultural and gendered aspects of societal change at the local, national, regional and global levels according to the European Association of Development research and training Institute. (Sumner 2022) Various scholars highlight that Development Studies emerged as a result of the decolonization process itself from the 1950s and 1960s onwards (Shaw, 2004) with a strong emphasis on economic development and Development Economics. Over the years, the basic commonality of developments studies has been to investigate the processes and outcomes of development where processes are alienated as the real agencies that facilitate economic development whereas outcomes are CHmajorly quantitative indicated by rising average income and improved human development indices across nations (De Hanaan et al,2019).

1.1.1Endogenous Growth Theory

Endogenous growth theory has redefined the concept of economic growth. It assumes that the long-run rate of growth is primarily determined by endogenous variables that are internal to the system, such as human capital, innovation and investment capital; rather than exogenous factors where technological and scientific process are independent of economic forces. Accordingly, population growth and innovation have more impact on growth than physical capital (Wathne & Heide, 2004). The theory explains how differences in wealth between developed and underdeveloped countries could persist, if investment in physical capital like infrastructure is subject to diminishing returns. In a knowledge-based economy, supported by robust intellectual property rights, there are no diminishing returns to capital accumulation thanks to positive spillover effects from investment in technology and people. Productivity growth is determined by differences in spending on Research & Development (RD) and education in endogenous models. And this feeds back into faster technological progress. It calls on Economies to ceaselessly transform themselves, take technological changes in order to develop if they are to enjoy sustainable prosperity and become more productive AFREPEN/WP 2009).

1.1.2 Resource Dependence Theory (RDT)

Resource dependence theory was thought to be relevant in this study in order to understand its effect of economical situation on performance of sustainable development goals in Nairobi City County, Kenya, hence it gives a theoretical background of this study. According to Wathne and Heide (2004), this theory studies the how external resources of organizations originate ultimately originate from an organization's environment, which considerably contains other organizations. In essence the resources that an

organization needs are thus often in the hands of the other. In the context of e-mobility, several players including the government, private partnerships and citizens themselves can be able to stir e-mobility. Government Agencies such as NEMA, formulate policies such as a renewable energy feed-in-tariffs (REFIT) a policy aimed to stimulate market penetration for renewable energy technologies by making creating enabling market conditions. (AFREPEN/WP 2009). And the Climate Change Act 2016 and the most recent Energy Act 2019. Formulation of the 17 SDGs itself is integrated in that they identify that act in one part will disturb consequences in others, in the dependence setting and that thus progress must balance social, economic and environmental sustainability that rely on resources availed by others to adopt on e-mobility and contribute to growth and sustainability (Wathne & Heide, 2004).

1.1.3Technology Acceptance Model

The technology acceptance model recommends that apparent affluence of usage and usefulness of a technological tool determines the extent of consumer acceptance and the continued implementation of a wide range of technologies both by individuals and within organizations, user acceptance remains a significant area of study. The question of why people decide to accept or reject a particular technology continues to be an important issue (Sharp, 2007). A maintainable progress of transport skills has the view to authorize societies and upsurge growth and output, by generating new work chances and life models. Also, the alteration in engine technology may help upsurge living values by improving air effluence and consequently health hazards. By undertaking so, worldwide environmental purposes such as energy effectiveness and health decided upon in the Paris Agreement may be encountered (Donnerstag,2018). This theory will help the study in examining the technological situation of e-mobility by identifying external variables influencing perceived usefulness.

2.1 Economical Situation

The economical situation in this study presents a critical component of e-mobility that is indicated with the opportunity cost for investing in e-mobility projects, the sunk cost, supply and demand and trade wars. The opportunity cost in this component highlights the benefits individuals can get from using an alternative means or set of service as opposed to the other. This will cover the ability to produce and consume in a circular loop, whereas Sunk cost as a component shall present the initial layout costs of capital and big push towards e- mobilty. This cost is one which will never affect future decisions of a firm. Supply and demand present the ability to constantly produce services and output that the public and end users are willing and can afford to whereas buy (Ongeri & Osoro, 2021). Trade wars are a critical component of the economical situation as there is a vibrant transport sector that is almost circular, introduction of an alternative can bring in undesired competition that could cause trade wars in the market from assembly, recharging of Evs, power supply and policy regulations such as carbon taxation or tax incentives foe Evs.

2.1.1 Environmental Situation

The environmental situation in this conceptual framework looks at major components of the environment surrounding sustainability of e-mobility. Resource dependency which is a multiplier effect of the increasing population, urbanization and rural urban migration, emission from the road transport sector which is a big contributor to greenhouse gas emission,(Sovacool,2009)strides towards renewable energy which makes up 80 % of Kenya’s energy and a circular loop that encourages recycling or steady state situation where resources are used up at the same time as they are replenished(Daly & Farley 2004)Over the last few years, Kenya and the horn of Africa region at large have started to feel the repercussions of climate change and its impact on human health, agricultural production and economic losses. The global transition to a low carbon economy has never been more urgent than it is today. Since the early 2010s, Kenya has been working diligently to position itself at the forefront of the energy transition race in East Africa (Siemens Stiftung 2020)

Recycling

2.1.2.Social Situation

The social situation forming up the adoption if E-mobility shall evaluate social factors of population increase, rural urban migration, urbanization, poverty and inequality. These factors are critical for development and sustainability of the same development in any society. Nairobi metropolitan had a projected population of 10.8 million by 2022 from the 2019 census. The Kenya National Bureau of Statistics Census of 2019 also showed that the national population Beurre had grown to 47.6 million in 2019 from 37.7 million in 2009. The migration of people from Kenya’s rural areas into Nairobi city is a common phenomenon. It’s easy to find youngsters as old as 18 years moving to the cities upon their high school completion. Most of the youths are perhaps inspired by the perceived upward

social mobility associated with city life. However, according to Mallach (2018), This component therefore shall look at the demographics of this urban dwellers, the poverty and inequality indexes and the level of education to combine the average HDI and therefore translate to how the aggregated demographic evidences can affect sustainability of e- mobility in Nairobi County, Kenya.

2.1.3 Technological Situation

To be successful, technological models need to be easily understood and operated by the users, should be human centered, innovative and efficient.(Sadirac2020) This variable shall exhaust the technological components including the extend of Awareness of e- mobility and its implications, the effect of innovations in EV production, assembly and maintenance, the efficiency from sustainable power supply to user benefits and evaluation of standards of policies applied to the E-mobility on sustainable development. This results in the failure to secure investment, in addition to which investors prefer more lucrative ventures. Similarly, it is hard to access financial services to support RET, and microfinance has not succeeded in this sector in Kenya. Despite technological strides, the market share for RET remains small mainly because of lack of competitiveness, limited funding, low demand and compartmentalization of actors. (Kimuyu et al 2015)

2.1.4 Performance of Sustainable Development Goals

This is the dependent variable of this study, closely guided by some selected Sustainable Development Goals which include reasonable and spotless energy, maintainable cities branded by spherical improved commercial opportunity models, infrastructure development and policy development. The supervisory SDGs for this sustainability are; SDG ; Reasonable and clean energy: Endorse sustained, comprehensive and sustainable financial growth, complete and creative employment and attired work for all. SDG ; Sustainable metropolises. This purposes to make metropolises and human payments inclusive, safe, hardy and sustainable and to deliver admittance to safe, affordable, available and sustainable transport schemes for all, refining road sanctuary, notably by rising public transport, with special thoughtfulness to the needs of those in susceptible situations, women, families, persons with incapacities and mature persons (Ongeri & Osoro, 2021).This calls for high utilization of transport resources by improving mobility patterns where studies across Europe have put forth evidence in support of such as carpooling and utilization of road spaces for e-bikes, three wheelers and Essayed mobility modes are more efficient when it comes to utilization of road space and should, therefore, be propagated (Berger-Schauer, 2015).

Research Methodology

This study used a cross sectional survey research design was concerned with questionnaire formulation in social and behavioral sciences whereby a population was identified, a sample selected, and systematically questioned and the results generalized to the population and reported to meet the information needs (Alreack &Settle 1995). The study used a cross sectional descriptive research survey as it examined social issues in a cross section of the population at a point in time, focusing on links among a number of key variables based on written questionnaires and interviews (Mugenda & Mugenda,2008)

2.2 Economical Situation

Plaintiffs were requested to give their view on the flexible economical situation designated by supply and demand, opportunity cost, sunk cost and local trade wars. From table 4.7, the plaintiffs solidly arrangement that economical situation has effect on performance of sustainable progress goalmouths in Nairobi City county (M=3.731 SD=1.1491); Finished valuation of supply and demand, the county has remained talented to brand rational choices on precedence and non-priority reserves near performance of sustainable development goals (M=3.722, SD=.8051); Chance costs in economic situation demonstrations that it has subsidized to the superiority and improvement of economical models for performance of sustainable progress goals (M=3.844, SD=.8123); monetarily the ruined cost and capital costs are significant to put in place rapid conveyance and maintain investment levels for e-mobility(M=3.172, SD=.8524); in Nairobi City county performance of sustainable progress goalmouths has also been heightened by scenery instrument and fast rejoinder to native trade wars (M=3.841, SD=1.1761),Monitoring of economic situation augments performance of Sustainable growth in County (M=3.841, SD=.8021 . These findings were in line with the findings of Ominde et al. (2022), who observed that clear description of economic situation, can enhance effective performance of sustainable development goals in Nairobi City county, Kenya..

Table 1.1: Economical Situation

Statement	Mean	Std. Dev.
Economical situation in e-mobility has result on performance of SDG	3.832	1.1491
Supply and demand for e-mobility has scheduled performance of SDG	3.372	.8051
Chance cost for e-mobility has outcome on performance of SDG	3.844	.8123
Sunk cost for e-mobility has consequence on performance of SDG	3.172	.8524
Native trade wars arising from e-mobility has upshot on SDG	3.841	1.1761
Orderly Monitoring of economic situation augments performance of Sustainable progress in County	3.841	.8021

2.**2.2 Social Situation**

Since table 1.2, plaintiffs agreed that: Valuation of social situation has an upshot on performance of sustainable growth goalmouths (M=3.812, SD=.8080); Populace has consequence on performance of sustainable development in Nairobi city County (M=4.181, SD=.7442); Country urban migration has consequence on performance of sustainable development goalmouths in Nairobi City county (M=4.426, SD=.8291); inequality has consequence on performance of SDG in Nairobi City County (M=4.409, SD=.7316);poverty has consequence on performance of sustainable development goalmouths in Nairobi City county, Kenya (M=4.582, SD=.8304); Thorough social situations management enhances performance of sustainable development goalmouths in Nairobi City county, Kenya (M=4.303 SD=.8299) . This findings agrees with the result of Eshiwani (2019). It is indispensable for social situation to be well accomplished in a appropriate manner in command to understand the demographic patterns of users for successful implementation of e- mobility projects and maintain control over the performance of sustainable development goalmouths in the county.

Table 1.2 : Social Situation

Statement	*Mean*	*Std. Dev.*
Valuation of social situation has consequence on performance of SDG	3.812	.8080
People have consequence on performance of SDG in NCC	4.181	.7442
Country urban migration has result on performance of SDG in NCC	4.426	.8291
Inequality has consequence on performance of SDG in NCC	4.409	.7316
Poverty has result on performance of sustainable development in NCC	4.582	.8304
Thorough social situation management touches performance of sustainable development goalmouths in NCC	4.303	.8299

Model Goodness of Fit

Regression examination was rummage-sale to create the strengths of relationship amongst the performance of sustainable development goalmouths (dependent variable) and the forecasting variables; s economic situation, environmental situation, social situation and technical situations (Independent variables). The consequences exhibited a correlation value (R) of 0.724 which illustrates that there is a decent linear dependence amongst the independent and dependent variables. This outcome is in line with the answers of Mogoi and Osoro (2022). They detected that this also to illustrate the implication of the regression examination done at 95% confidence level. This infers that the regression model is noteworthy and can thus be rummage-sale to estimate the association amongst the dependent and independent variables. This result concurs with the answers of Okumu and Bett (2019), they detected that examination of variance statistics scrutinizes the differences amongst group means and their associated measures.

Table 1.3 Model Goodness of Fit

R	R2	Adjusted R	Std. Error of the Estimate
0.734	0.702	0.716	0.075

Through an R-squared of 0.702, the model displays that economical situation, environmental situation, social situation and technological situations at can donate up to 70.2% on performance of sustainable development goalmouths in Nairobi City county, Kenya, while 29.8% this difference is elucidated by other pointers which are not comprehensive in this study or model. A measure of goodness of fit outlines the difference amongst detected values and the values expected under the model in query. This result is in line with the answers of Nyile et al. (2021).

Conclusion

Consequently, from the preceding, this study accomplishes that adoption of e-mobility has a noteworthy influence on performance of sustainable development goalmouths of Nairobi City County, Kenya. The answers conclude that any e- mobility scheme should struggle to look into and chiefly consider and evaluate the four mechanisms of e-mobility on performance of maintainable development with the refining live hood in Kenya. When public-private companies are involved through community rendezvous, community division, economical assessment, technological exercise and environmental acquiescence, the community brands paces towards improved performance of sustainable development goalmouths in Nairobi City County, Kenya.

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