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SMART CITY NARRATIVE AND TALENT POLICY: THE CASE OF TALLINN CITY

Master's thesis

Technology Governance and Digital Transformation

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ABSTRACT

The importance of effective and efficient international talent attraction and retention policies for a country cannot be over emphasized. Evidently, attracting and retaining international talents to a country creates more room for economic, socio-cultural and political growth or development of the said country. Now more than ever, countries and government institutions are directing their efforts towards attracting and retaining international talents. At the same time, the importance of smart people has increasingly been emphasized in the smart city literature. One can expect that cities that try to label themselves as smart cities are increasingly directing their attention on talent management. This research study discusses international talent attraction and retention in Tallinn City in the context of adapting the smart city narrative. Tallinn City has been selected as the focus and scope of this research study. This study places paramount focus on whether or not the adoption of smart city narrative has imparted Tallinn City and its strategy regarding talent management.

Keywords: talent attraction and retention, smart city initiatives, talent policies, Tallinn City

1. INTRODUCTION

The importance of an effective and efficient international talent and retention program or policy for a country cannot be over emphasized nor can it be overstated (Keisha, 2016). Evidently, attracting and retaining international talents to a country creates room for economic, socio-cultural and political growth and development of the said country. There is ample evidence to suggest that now more than ever, countries and government institutions are using smart city initiatives in attracting and retaining international talents (Thite, 2011). This research study thus explores international talent attraction and retention policies in Tallinn City in the context of adapting the smart city narrative. From a theoretical perspective, smart city initiatives or narratives have the capacity to undoubtedly change the strategic language of a city.

This research study serves as an intellectual contribution to smart city research focusing on people. This study also goes further to ascertain whether or not the smart city initiative/concept which increasingly emphasizes the importance of smart people has been taken into consideration at a practical level. More so, academics, researchers, and enthusiasts will discover the findings of this research study to be of immense academic importance.

1.1 Problem Conceptualization.

Evidently, Tallinn City has been selected as the focus and scope of this research study, primarily because the city has in recent years experienced some challenges and problems in its labour market (Urke *et al.* 2020; Browne *et al.* 2018). Some of these challenges and problems include but are not limited to shortage of highly skilled labor, emigration struggles, demographic decline, labour market developments of neighbouring counties and aging population (Urke *et al.*, 2020; Browne *et al.*, 2018; Baltic Development Forum, 2014). The need for this research study is underscored by the fact that the existing local labour market in Tallinn City is unable and struggling to meet the needs and wants for a highly qualified labour

force. It thus reasonably follows that in order to address this deficit in the labour market, more foreign and international talents or employees are required (Kirss *et al.*, 2014). At the same time, Tallinn City has adopted the smart city narrative/concept (Müür, 2021; Sarv and Soe, 2021). The discussions around the smart city development have largely focussed on the integration of ICT solutions into different aspects of city life (Benevolo, *et al.*, 2016). However, an increased focus on smart people can be identified in the smart city literature (Sarv and Soe, 2021). In this context it can be assumed that cities will increasingly direct their focus on attracting and retaining talent. The research study in essence examines the use of smart city narrative in changing the strategic language of Tallinn City and whether it addresses talent attraction and retention.

1.2 Research Questions and Objectives

The research questions below amongst others would be addressed and answered in the course of this research study.

i. Has the adoption of smart city narrative changed the strategic language of Tallinn City?

ii. Has the adoption of smart city narrative impacted Tallinn City and its strategy regarding talent management?

1.3 Progression of Argument.

To appreciate the line of thoughts and progression of argument in this research study, it is necessary to highlight how this research paper was developed. This research study is delimitated into six chapters. Chapter one introduces the research study; it gives a background overview and problems of the research. Chapter two provides a literature review of relevant concepts and ideas referred to in the project. Chapter three identifies the research

methodologies and approaches on how the researcher conducted paper analysis in the course of this project research. Chapter four constitutes an analysis of the three selected city/development plans of Tallinn City vis-a-vis smart city components. Chapter five states the final discussions of the research study. Finally, chapter six which is the concluding chapter summarizes the entirety of this research study.

2. LITERATURE REVIEW

2.1 Talent Policies

To understand and appreciate "talent policy,*"* we need to have a background understanding and knowledge of the concept of "talent." According to Andersson *et al*. (2014) "talent" refers to skilled professionals who possess reasonable and stellar tertiary educational training and they further state that international and national students engaged in higher education or learning fall within the concept of "talent." In another parlance, "talent" refers to skilled professionals engaged for a particular purpose. (*Ibid*). Additionally, Kirss, *et al.* (2014) contend that "international talents" are highly qualified or skilled professionals and students who reside in a particular country irrespective of their nationality and citizenship. Most importantly, Andersson *et al*. (2014) define "talent polices" as guidelines or efforts directed towards attracting, welcoming, integrating and retaining international and national talents in a country. It is instructive to note that talent policies generally address national strategies and approaches on talent policy management in a country. More so, talent policies provide a review or analysis of relevant stakeholders and their respective roles in the policy management and implementation plan of a country. *(Ibid.).*

2.2 The Importance of Talent Policies

Florida has argued that the importance of talent policies in our global and economic world are too numerous to count (Naylor, 2003). He states that talents and talent policies are very fundamental to the innovativeness, growth, development and success of countries, companies, government institutions as well as corporate organizations (*Ibid*.). More so, where there is an absence or lack of these requisite international talents and attendant talent policies, the economic growth, development and advancement of an economy or nation cannot be guaranteed. Janczak (2011) adds that the global competitiveness of a country will be largely

dependent on its ability and long-term capacity to gainfully attract, retain, and develop the needed talents and manpower.

To this end, a large number of countries try to mitigate talent shortages by allowing and accommodating migrants (i.e., global talent). The United Nations (2012) and Keisha (2016) support this assertion by alleging that immigrants contributed to 70% increase in the labour force in Europe and 47% increase in labour force in the United States of America (USA). Leikuma-Rimicane *et al.* (2021) further reiterate the fact that good talent policies largely contribute to the economic development of a country. According to these authors, this economic development is triggered as a result of the concentration of talented people/individuals in a specific geographic area as well as the presence of supportive talent policies. Resultantly, the presence of these effective talent policies allows room for the formation/creation of industries and creative clusters that are catalyst(s) for economic developments in a country (*Ibid*.). Parilla and Liu (2019) further state that world economies have more potential to grow when they develop policies where talents can maximize their productive potentials. Clearly, a healthy talent policy has the benefit of creating room for increased diversity, inclusion and equity/equality in a country (Marc, 2021).

More practically, the existence of a healthy talent policy in a country inviting foreign talents presupposes that such a country is open to receiving/welcoming persons with diverse cultural, ethnic and racial backgrounds. This diversity can foster increased innovation, creativity and problem solving in such a country (Anja, 2018). Notwithstanding the above, Kirss *et al.* (2014) advise that heavy reliance on migrants is not sustainable and will be largely insufficient in the future/coming decades. The necessary implication of this is that countries/governmental institutions/business organizations that are heavily dependent on these migrants would need to strategize and rethink polices and approaches on talent.

2.3 Overview of different measures used in the context of talent policies and management

Different measures and strategies have been used and enacted in the context of talent policies worldwide. These polices all strive to attract and retain international talents to a particular geographic location. There are no hard and fast rules as to which policies work. Stahl *et al.* (2012) posit that a successful and effective measure in respect of talent process and policies must of necessity include recruitment, staffing, succession planning, training, development, and retention management. Huiyao (2020) adds that these measures are very useful in combating emerging development issues in a country as well as maintaining stable growth and development. Lastly, Minasyan (2020) stated that talent attraction (marketing), talent reception (welcoming), talent integration both socially and professionally, talent reputation (branding) are the fundamental cornerstones of talent measures. A few of these measures include the following:

    i.   **Immigration packages** - Immigration package here covers immigration policies, rules of permanent residency, citizenships, consideration for family members, validation of education certificates and qualifications etc. (Papademetriou & Sumption, 2012). An immigration package weighs heavily in the mind of a foreigner when deciding whether or not to move to a particular country. Accordingly, government institutions seek to address these considerations by providing very attractive, accommodating and comprehensive immigration packages (*Ibid*.).

    ii.   **Temporary to permanent visa pathways** - In line with the above policy consideration, visa allocations affect(s) both long- and short-term decisions of attracting foreigners and international talents to a country (Harvey, 2014). This policy approach allows foreigners to be temporarily admitted into a country and further provides a transparent and definite process for permanent residency to be granted to desiring applicants (Papademetriou & Sumption, 2012). It also impacts positively the confidence of both

investors and foreigners when deciding on a country to migrate to. A very good example in this regard is the US H-1B system (*Ibid.*).

iii. **Retaining top foreign students** - Countries with effective policies aimed at retaining foreign students record more success in attracting and retaining international talents (Papademetriou & Sumption, 2012). Scholarship opportunities and student mobility must also be factored in under this policy (Geddie, 2014). Essentially, where a country gives due consideration to international students and educational opportunities, the needed international talents are ultimately attracted and retained.

iv. **Tax incentives and rebates** - Some countries provide commendable tax incentives to foreigners who wish to reside and do business in their countries. These tax incentives encourage more investors, foreigners and even international companies.

v. **Investment opportunities and ease of doing business -** This measure/approach envisages the creation of an enabling environment for foreigners/migrants and visitors to invest in a particular country/city. For example, most countries do not place a lot of restrictions of foreigners who desire to register/incorporate foreign businesses and transact/buy and sell their services. More so, countries allow foreigners to own 100% stake in their business without insisting they divest a portion of their companies. Resultantly, a good number of foreigners are more likely to reside, invest or visit countries that have good investment opportunities and can guarantee returns on investment. (Papademetriou & Sumption, 2012)

vi. **Employment opportunities** - International talents are very interested in available employment and job offers in a target foreign country. Agreeably, these employment opportunities provide some form of comfort, quality of life and decent living conditions. Kerr (2020) further notes that the need for better opportunities drives people

to relocate and migrate. Accordingly, governmental bodies should allow policies that create ample employment opportunities for international talents (*Ibid.*).

vii. **<u>Legal and regulative measures</u>** - This policy approach presupposes the creation of requisite legal protections and safeguard for foreigners and internationals who wish to reside in a country. This measure ensures that foreigners are well protected and safe guarded when they desire to become citizens of the country (Papademetriou & Sumption, 2012). A good example in this regard is the legal and regulatory provisions available to a white, Latin or black person who chooses to reside in a foreign country.

viii. **<u>Quality of life</u>** - This policy measure is further subdivided into two categories: essential services and the environment.

    a. <u>Essential services</u> - Donald (2001) reports that the quality of life of a country is directly tied and related to its economic competitiveness and attractiveness. There is also ample evidence to suggest that internationals and foreigners are interested in countries that provide better and decent quality of life and essential services for its citizen. For example, Canada has recorded huge foreigners migrating into its country because of the standard and better quality of life that an average Canadian citizen enjoys. In the same vein, Thite (2011) adds that good quality of life is evidenced in the availability of essential and pertinent services such as effective healthcare services, affordable housing, reliable security, good transport systems, internet services, available educational opportunities, etc. Unequivocally, a good number of countries adopt this policy measure in attracting the right set of international minds, investors and foreigners.

    b. <u>Environment</u> - Healthy, sustainable and quality environmental conditions can attract the right set of investors and foreigners to a country (Tendeiro, 2019). More so, the sustainable exploration of environmental resources can improve the general

quality of life of occupants of such an environment. The "environment" as a policy measure envisages the following incentives: reduced CO2 emissions, reduced traffic waste, improved environmental quality in urban space, sustainable recycling methodologies (i.e., green environment), efficient environmental protection laws and regulations, and finally, optimized energy consumption by using renewable energy. These environmental safeguards and incentives attract foreigners into a country.

2.4 Smart cities

It is interesting to point out that different authors and writers have suggested different definitions and conceptions of the idea of "*smart cities.*" The concept and idea of adopting smart city initiatives has also increased and has been widely discussed over the past few decades (Caragliu and DelBo, 2018: Giffinger 2015). Giffinger *et al.* (2007) posit that a smart city is a city with smart industries such as the information and communication technology (ICT) industry. These authors further posit that smart cities involve an education of inhabitants and a unique relationship between the representatives of government, administration and its citizen (Giffinger *et al.*, 2007). More so, a smart city presupposes that such a city engages modern technology for the purpose of generating social, economic, technological, political and cultural values for the individuals and citizens who live there (Gavin, 2022). According to Matos *et al.* (2017), smart cities are living organisms with the capabilities of reasoning and learning.

According to Kiran *et al.* (2016) smart cities (also referred to as "*system of systems*") can create room for the generation of large amounts of data and information. This reality becomes more possible especially as cities around the world gain more access to data/information from sources such as mobile phones, government agencies, and sensors. Benevolo *et al.* (2016) add

that smart cities are cities that effectively and efficiently engage ICT in a bid to improve the quality and performance of urban services, especially for the purpose of solving energy, pollution, and transportation problems. In addition, Kiran *et al.* (2016) report that data concepts and techniques are very relevant and crucial to the future of smart cities around the world and can also enhance a good number of processes that are expedient and essential to a city. For example, data techniques and concepts can be used to determine quality of research, spot business trends, prevent the outbreak of a diseases/viruses, effectively combat crime, and determine real-time roadway traffic conditions. Giffinger *et al.* (2007) argue that certain characteristics act as roofs under which a more detailed list of factors can be added. These include smart mobility, smart economy, smart living, smart environment, smart governance and smart people (*Ibid.*; Gupta *et al.*, 2017).

Kiran *et al.* (2016) posit that smart city or smart city initiatives are basically evolutionary in nature and include the key elements or characteristics like digitization of services, ICT, Internet of Things (IoT), big data, open data, social innovation, and knowledge. Dameri and Cocchia (2013) add that features and strategies for smart cities should always include applications of technology in order to achieve increased quality of life and standard of living; delivery of better public and private services such as public transport services and health services; reduced CO_2 emissions; traffic waste; improved environmental quality in urban space; and optimized energy consumption by building effective renewable energy.

Nam and Pardo (2011) note that smart cities are comprised of three major components. They include "*People*" which involves social learning for the benefit of strengthening human connections or infrastructure and also collective decision-making processes; "*Technology*" which assists to ensure that existing infrastructures are more effective and efficient; and "*Institutions*" which includes the context of governance for institutional improvements/developments and the engagement of citizens.

Furthermore, social infrastructure (education, healthcare, housing), institutional infrastructure (governance, security, taxation, ICT-based service delivery), physical infrastructure (power, water supply, cyber connection, airports, roads) and economic infrastructure (market growth, job creation, GDP contribution) have been identified as the four fundamental pillars or features of a smart city (India View, 2022). To this end, Kiran *et al.* (2016) argue that cities like Dubai, New York City, Seoul and London are very good examples of smart cities in the world today. Thite (2011) posits that good quality of life as evidenced in effective healthcare services, reliable security, affordable housing, good transport systems, environmental quality, internet services, available educational opportunities, are some of the features or characteristics of a smart city. Finally, the smart city literature analysis by Stübinger and Schneider (2020) divides the smart city research under five sub streams. The five sub streams include *smart infrastructure*, *smart economy & policy*, *smart technology*, *smart sustainability*, and *smart health*. For context, **smart infrastructure** presupposes a city that easily connects the environment/society and institutions/buildings in a smart and intelligent manner (Stübinger and Schneider, 2020). Smart city factors such as innovative spirit, participation in public life, flexibility, creativity, public and social services, transparent governance, political strategies & perspectives would all suffice in this regard. These factors were addressed in each of the development plans analysed above.

In addition, **smart economy** presupposes the existence of policies and strategies that aid better decision making on an economic landscape (Stübinger and Schneider, 2020). Factors such as participation in decision-making, social and ethnic plurality, international embeddedness, economic image & trademarks, entrepreneurship, productivity, flexibility of labour market, etc would all suffice in this regard. **Smart technology** on the other hand engages the use of technical devices and systems. (Stübinger and Schneider, 2020). Hence, smart city factors such

as availability of ICT-infrastructure, cosmopolitanism/Open-mindedness and ability to transform would suffice under this concept of smart technology.

Smart sustainability as identified by Stübinger and Schneider (2020) presupposes the effective and efficient use of resources with due regards and consideration for future generations. City factors such as sustainable resource management. Sustainable, innovative and safe transport systems, environmental protection, and attractivity of natural conditions readily suffice in this regard. Finally, and according to the same authors, **Smart health** is the provision of efficient and electronic health services through the instrumentality of smart city infrastructures. Clearly, there is an existing relationship between smart health and smart infrastructure. In other words, the existence of smart health depends on the existence of available smart infrastructures. In addition, Stübinger and Schneider, (2020) argue that smart health is an element of electronic health that adopts ICT systems to reduce overhead cost and improve efficiency, output and effectiveness.

2.5 The relationship between talent management and smart people

Smart cities are so called because of the presence of smart people. It is interesting to point out that smart people constitute a very large portion or component of a smart city. Gupta *et al.* (2017) add that these smart people are comprised of open-minded individuals who have a lifelong zeal to learn. This is very important because smart people have the flexibility to adapt to environmental changes and also possess the creativity to contribute to the efficiency and smooth administration of a smart city initiative. Additionally, these smart people create a more conducive environment for international or local talents to be attracted and retained (Soe *et al.*, 2021). Smart and talented people are a precondition for a city to transform itself into a smart city (Caragliu *et al.*, 2009).

On the other hand, Novera and Akhtar (2018) identify talent management as the effective management and control of a workforce/employees/talents/people in order to meet future needs/wants. Talent management is strategic in nature and is directed towards building organizational and personal capacity (Novera and Akhtar, 2018). Consequently, the bridge, relationship or connection between smart people and talent management is that smart people are talents, and they must be managed effectively so as to ensure the proper functioning of technological companies, financial institutions, creative and innovative industries, government institutions, academia, production/manufacturing industries in a smart city (Soe *et al.*, 2021). To this end, talent management must be at the forefront of policy makers and relevant governmental institutions. Furthermore, smart people can affect the nature and structure of talent policies/talent management in a country and vice versa. Consequently, there must be adequate provisions for the attraction and retention of smart people as well as relevant foreign talents in the talent management policy documents of a country. In other words, talent policies must take into consideration the attraction and retention of foreign expertise, smart people, and international talents. It is safe to reasonably conclude that the effective and efficient talent management can create room for better control or organization of smart people (Gavin, 2022).

2.6 Difference between smart city initiatives and smart city narratives

For clarity, smart city initiatives are fundamentally different from smart city narratives. Although, these terms are used interchangeably, they have different meanings and connotations. For example, smart city initiatives do not only focus on technological changes, but also place focus on human capital investments as well as changes in urban living conditions and practices (Neirotti *et al.*, 2014). These authors go further to contend that smart city initiatives can also include investments in human capital usually aimed at promoting learning and innovation capacity of a city. Essentially, smart city initiatives are concrete smart city

projects. On the other hand, smart city narratives connote the interconnectedness of ICT, e-Government, creative business, innovations, smart mobility and entrepreneurship (Gonella, 2019). More so, Florida (2003) contends that a smart city narrative invites people/individual in a city to become smart, connected, creative, healthy, happy, safe and culturally vibrant and this requirement according to the author is quite ambiguous. Strüver and Bauriedl (2020) express their concern(s) that an ideal smart city narrative is utopian. Notwithstanding the above contentions, London has been perfectly described as having a model smart city narrative (Gonella, 2019).

Mora *et al.* (2019) add that the journey towards being a smart city involves creating more room for needed smart city experimentations; promoting and encouraging more strategic interactions between different social groups in a city; ensuring that the process of becoming a smart city remains open and inclusive; providing support to interested stakeholders or parties who might not be heard during the process; breakage of unnecessary silos; providing orientations on the processes of smart city innovations; facilitation of interactive learning processes related to urban issues and possibilities; provision of guide technology developers; and keeping the transition process oriented towards a fully sustainable path.

3. RESEARCH METHODOLOGY

This chapter highlights the proposed research methodology, research design and data collection used and engaged in this thesis. Research methodology involves the collection, analysis and evaluation of data/information on an identified research topic (Saunders *et al.*, 2012). This chapter would aid the researcher to determine the general practicability, suitability, and feasibility of the research study. The source of the data/information as well as how these data were utilised would be addressed (Creswell and Plano, 2011). In order to achieve the aims and objectives of this research study, the qualitative research approach will be adopted. For emphasis, the qualitative (or inductive) data collection technique involves the use of non-numerical data/information. For example, one-on-one interviews, questionnaires, case study research, record keeping, focus groups, and analysis of secondary sources such as documents etc (Creswell and Plano, 2011). This qualitative analysis involved a careful observation and analysis of the current situation of the strategies in Tallinn City.

In addition, this researcher has chosen to adopt the descriptive research design which seeks to describe the population, situation, or phenomenon of a sample accurately and systematically (Leedy & Ormrod, 2010). More so, this research design has the capacity to capture views, thoughts, and behaviours of a population on an identified problem (Collins, 2010). The researcher made an attempt to investigate international talent attraction and retention in Tallinn City and whether the adoption of the smart city narrative has changed the strategic language of Tallinn City. Evidently, the nature of this research study is explanatory because it primarily seeks to provide and understand a '*how'* based question.

This selected descriptive research design allows the researcher to assume an observatory role which can create more room for future and advanced research work. For example, this role as an observer would permit the researcher to observe what residents in Tallinn City think with regards to whether or not how the adoption of smart city narrative has changed the strategic

language of Tallinn City. Finally, the researcher herein engages the longitudinal research design as it provides an opportunity for the collection and analysis of data from a population over a long period of time. This research would collect and analyse secondary sources of data. The main sources are the last three development plans of Tallinn City. Specifically, one of the focuses was to look whether the strategic language of Tallinn City has changed due to adoption of smart city narrative. For that, priorities, activities and measures described in the development plans were compared with the smart city factors developed by Giffinger *et al*. (2007). In addition, the strategic language of the development plans was analysed by looking at the presence of keywords related to smart city based on Stübinger and Schneider (2020). In order to answer to the second research question, an additional analysis was conducted to find which of the talent policy measures first listed in the literature review are present in the development plans.

4. CASE ANALYSIS - TALLINN CITY

Estonia has witnessed the emergence of new and innovative industries, especially in ICT. However, the smallness of the country has several limitations. First, smallness also means that the local market is limited, and global focus is of utmost importance (Mets, 2016). Second, global focus of Estonian companies and small population has also increased the need to hire more highly qualified workers/employees and industry specific specialists from abroad (Mürk, 2011). The City of Tallinn is the economic centre and capital city of Estonia. Tallinn City's priorities, policies and related measures are captured in its development plans. Every 5 - 7 years, a new strategy is adopted for Tallinn City by the city council. These strategies give its citizens an idea as to where the city was, where it currently is and where the city intends to be in the future with regards to developmental, economic and political strategies and policies (i.e. smart city components).

4.1 Smart city factors in the 3 selected Tallinn City's development plans.

This section of the research study will attempt to discuss, examine, compare and contrast the last three development plans of Tallinn City. The aim is to map which of the smart city factors proposed by Giffinger *et al.* (2007) are covered in each of the three development plans.

4.1.1. Smart city factors in the Tallinn Development Plan 2009 - 2027

This development city plan was based on goals/objectives set in the Development Plan of Tallinn 2006 - 2021 (Tallinn City, 2009). This particular development plan placed more focus on policies surrounding the environment, businesses, education, culture, tourism, social welfare, health care, security, and governance (*Ibid.*).

i. *Analysis of the smart city factors under the development plan of Tallinn 2009 - 2027*.

A. Smart economy (Competitiveness)

a. <u>Innovative spirit</u>: Innovative spirit is linked with Objective 1 of the strategy. More specifically, Secondary Objective 1.1 addressed this factor of smart economy. Skill acquisition is a prerequisite for innovation and creativity. In the same vein, the objective was to create more opportunities for enhancement of the skills and knowledge of the labour force through providing training opportunities for the employed as well as the unemployed. More so, the provision of higher educational institutions, competence centres and research and development institutions were engaged as a means to increase the innovative culture and awareness of entrepreneurs.

b. <u>Entrepreneurship</u>: Entrepreneurship is Objective 1 of the strategy. More specifically, Secondary Objective 1.1 addressed this factor of smart economy. Promoting business and business competitions was used as a means of improving entrepreneurship amongst Tallinners. This objective also sought to create sustainable conditions for the development of knowledge intensive, high productivity entrepreneurship in the city. Other means for improving entrepreneurship in the city include the organisation of short training programs, relevant subsidies for Start-up companies and the provision of other support services for new working spaces and environments. In conclusion, the goal was to strive towards creating an efficient labour market, such that citizens of Tallinn were competitively paid in a bid to achieve a highly productive economy and an efficient/effective labour market.

c. <u>Economic image & Trademarks</u>: This factor was not addressed under the development plan of Tallinn 2009 - 2027.

d. <u>Productivity</u>: This factor was not addressed under the development plan of Tallinn 2009 - 2027.

e. <u>Flexibility of labour market</u>: This factor was not addressed under the development plan of Tallinn 2009 - 2027.

f. <u>International embeddedness</u>: This factor was not addressed under the development plan of Tallinn 2009 - 2027.

g. <u>Ability to transform</u>: This factor was not addressed under the development plan of Tallinn 2009 - 2027.

B. <u>Smart people (Social and Human Capital)</u>

a. <u>Level of qualification</u>: Level of qualification is addressed in Objective 3 of the strategy. More specifically, Secondary Objectives 3.1, 3.2 and 3.3 addressed this factor of smart people. To improve the general level of qualification amongst Tallinners, basic education and secondary education were made easily available and accessible. In addition, pre-vocational training was introduced in general education schools. Vocational guidance and career planning were also made easily available in all general education schools. More so, developing general education institutions for adults and introducing study opportunities as well as enabling vocational study for people without basic education were all explored as a means of increasing the general level of qualifications amongst Tallinners.

b. <u>Affinity to life-long learning</u>: It can be deduced that Affinity to lifelong is addressed in Objective 3 of the strategy. More specifically, Secondary Objectives 3.1, 3.2 and 3.3 addressed this factor of smart people. The goal under this factor was to create learning environments that meet contemporary

requirements in schools. Unequivocally, conducive learning environments can stimulate a continuous thirst for knowledge and the urge/need for life-long learning. As a means of ensuring affinity to learning, (and as stated above) basic education and secondary education was made easily, as well as the provision and enhancement of ICT capability in schools. According to the strategy, competitions that support development and conducive learning were organized in furtherance and support of an affinity to learning amongst students and Tallinners in general.

c. <u>Social and ethnic plurality</u>: It can be deduced that social and ethnic plurality is addressed in Objective 3 of the strategy. More specifically, Secondary Objective 3.2 addressed this factor of smart people. Amongst other objectives and aspirations, this secondary objective was aimed at adopting international curriculum in schools within the jurisdiction of Tallinn City. As earlier emphasized, this measure is a hint that the city government anticipated more international people to arrive to the city for work and schooling. (i.e., the government can be seen to be very open minded and cosmopolitan by this approach).

d. <u>Flexibility</u>: Flexibility is addressed in Objective 1 of the strategy. More specifically, Secondary Objective 1.3 addressed this factor of smart people. Flexibility can be deduced from the ease of getting a new job. Additionally, the barriers for entering the labour market were fundamentally addressed whilst contemporaneously providing support for new and innovative workspaces. More so, efforts were directed towards allocating training support to enterprises and also allocating subsidies for practical training instructors of the enterprises. This measure also took into consideration improving the availability of training

and retraining opportunities for employed and unemployed Tallinners. In addition, citizens were encouraged to participate in enhancing higher and vocational education/qualification proceeding from the labour market needs in the city. Finally, career counselling systems were executed in all general education schools in the city.

e. <u>Creativity</u>: Creativity is addressed in Objective 2 of the strategy. More specifically, Secondary Objective 2.2 addressed this factor of smart people. The objective was to encourage/motivate creative activities and also create adequate/supportive conditions for new activity forms. The primary measures adopted here (amongst others) included providing support for relevant creative activities and also cooperating with state and private sector initiatives or organisers.

f. <u>Cosmopolitanism/Open-mindedness</u>: Cosmopolitanism/Open-mindedness is addressed in Objective 3 of the strategy. More specifically, Secondary Objective 3.2 (measure 2) addressed this factor of smart people. Measure 2 was aimed at improving the quality of study, motivating students and expanding options by providing support and conducive environments for multicultural learning. Essentially, this measure is a hint that the city government anticipated more international people to arrive to the city for work and schooling. (i.e., the government can be seen to be very open minded and cosmopolitan by this approach).

g. <u>Participation in public life</u>: Participation in Public life is addressed in Objective 6 of the strategy. More specifically, Secondary Objective 6.6 addressed this factor of smart people. Measures and strategies adopted under this factor include provision of support for civil associations (more particularly, fire-fighters),

cooperation with councils of individuals and civil associations, round table conversations with relevant stakeholders and providing support for domestic peace forums.

C. <u>Smart governance (Participation)</u>

a. <u>Participation in decision-making</u>: Participation in decision-making is linked with Objective 6 of the strategy. More specifically, Secondary Objective 6.6 addressed this smart governance characteristic. Honest conversations or communication between citizens, politicians and interest groups with an aim to improve participatory democracy has been considered as one of the ways to improve public dialogue which in turn enables to reach long-term agreements related to developing the city. According to the strategy, different activities were planned to increase such participation. The list included round tables and cooperation councils of people and civil associations and their involvement in decision-making, continuing the activities of domestic peace forum, and direct support (e.g., financial) for civil associations (e.g., voluntary firefighters) and citizen activity.

b. <u>Public and social services</u>: Provision of quality public and social services is partially addressed in Objective 6 of the strategy. More specifically, Secondary Objectives 6.4 addressed this factor of smart governance. In a bid to achieve this objective, improving the city governing and conditions for providing needed services to people were explored. This strategy involved the creation of new administrative buildings for the city government, creation of shopping centre covering the city authorities and redesign of the Särgava guesthouse at Särgava Alley 4 etc.

c. <u>Transparent governance</u>: Transparent governance is particularly addressed in Objective 6 of the strategy. More specifically, Secondary Objectives 6.6 addressed this factor of smart governance. It is trite that facilitating/creating room for more involvement of citizens allows for a better and transparent government. In the same vein, this strategy sought to ensure the dissemination of information materials ushering in target services, facilitate representative publications for the city, produce PR products, encourage round table conversations between civil societies in a bid to allow their involvement to decision processes. The underlying reasoning is that if citizens are well informed and involved in critical decision-making processes, government officials would be more accountable and transparent.

d. <u>Political strategies & perspectives</u>: Political strategies and perspectives is also addressed in Objective 6 of the strategy. More specifically, Secondary Objectives 6.6 addressed this factor of smart governance. In tandem with the previous factor (Transparent governance), it can be deduced that ensuring a more transparent and accountable government is a political strategy aimed at driving Tallinn City towards being a more democratic state, as true democracy entails a government being for, and by the people.

D. <u>Smart mobility (Transport and ICT)</u>

a. <u>Local accessibility</u>: Local accessibility is dealt with in Objective 5 of the strategy. More specifically, Secondary Objectives 5.1 addressed this factor of smart mobility. This measure was directed towards ensuring easy access to schools, hospitals, other health care facilities, markets etc. in order to achieve

this objective, regular public transport services were developed, thus bringing these services into accordance with the life and business needs of people.

b. <u>(Inter-)national accessibility</u>: To a reasonable extent, Inter-(national) accessibility is partially dealt with in Objective 1 of the strategy. More specifically, Secondary Objectives 1.4 addressed this factor of smart mobility. Notwithstanding the above, the measures under sub-objective 1.4 ("*Tallinn is internationally known city providing quality tourism service*") are rather related to improve the reputation of the city as a tourist destination. Suffice it to note that no measures/strategies were directly linked to improve the connection of Tallinn to wider world, for example via airport connectivity.

c. <u>Availability of ICT-infrastructure</u>: Availability of IT/ICT infrastructure is partially in Objective 6 of the strategy. More specifically, Secondary Objectives 6.5 addressed this factor of smart mobility. More focus was placed on creating and developing an integral IT infrastructure and organising IT support service for the city. According to the strategy, other measures were put in place to manage information systems and technical support was provided where and when needed. More room was allowed for continuous cooperation with developers and managers of state information systems and finally, public and e-services were provided in libraries. Consequently, the need for the creation, update and implementation of IT development strategy of city authorities could not be over-emphasized under this strategy.

d. <u>Sustainable resource management</u>: Sustainable, innovative and safe transport systems is partially in Objective 5 of the strategy. More specifically, Secondary Objectives 5.1 addressed this factor of smart mobility. The main activities directed towards achieving this objective were the organisation of public

transport, conducting research and projects in respect of public transport, expansion of rail transport networks between communities, development of school bus service, renewal of available transport parks with due considerations for the needs of children and senior citizens. In order to further ensure a sustainable, innovative and safe transport system, more efforts were directed towards collecting data and using them in developing the road networks, better maintenance of road structures. More so, street lighting systems and passenger tunnels were better maintained to enable safe and sustainable transport systems. Finally, this strategy explored the option of repairing and reconstructing streets and roads, and also building new junctions for grade separation etc.

E. <u>Smart environment (Natural resources)</u>

a. <u>Attractivity of natural conditions</u>: This factor is addressed in Objective 5 of the strategy. More specifically, Secondary Objective 5.2 and 5.5 dealt with this factor of smart environment. It is safe and reasonable to deduce that where natural conditions are habitable, clean and safe, it becomes attractive. Thus, the end goal was aimed at protecting the environment. Measures adopted under this factor include maintenance and reconstruction of green areas of the town, maintaining cemeteries and providing cemetery services, creating organisational preconditions for collecting the sorted waste, organising animal protection, providing public services and amenities of buildings and plots, guaranteeing order in bathing and recreation areas etc. Finally, the reconstruction of Tallinn City Hall, Kultuurikatel (Culture Cauldron) and development of Park Kadriorg, Tallinn Zoo and Tallinn Botany Garden was in the interest of the attractiveness of Tallinn.

b. <u>Pollution</u>: Pollution is addressed in Objective 5 of the strategy. More specifically, Secondary Objective 5.5 dealt with this factor of smart environment. As with all strategies, preventing the wilful degradation and pollution of the environment weighed heavily in the minds of the strategists. Accordingly, efforts were directed towards preventing pollution of the air, water, marine, land and the environment in general. Stringent monitoring processes were adopted and preparation of an action plan in collaboration with relevant Ministries were at the forefront for these strategists.

c. <u>Environmental protection</u>: Environmental protection is addressed in Objective 5 of the strategy. More specifically, Secondary Objective 5.5 dealt with this factor of smart environment. In tandem with preventing pollution and environmental degradation, protecting the environment also weighed heavily in the minds of the strategists. In fact, the need to protect the environment cannot be overstated nor can it be overemphasized. As with other strategies, cleaning the forest stands, green areas and parks in Tallinn were focal points of this development plan. In order to further protect the environment, measures were taken to prevent the depreciation of terrestrial ecosystems and aquatic ecosystems, and also preserve the biodiversity of water-related aquatic life.

d. <u>Sustainable resource management</u>: Sustainable resource management is addressed in Objective 5 of the strategy. More specifically, Secondary Objective 5.2 focuses on urban space maintenance, waste management sustenance and environment functionality. One of the measures focuses on creating organisational preconditions for collecting sorted waste, covering activities such as the management and collection of hazardous and/or municipal waste.

F. Smart living (Quality of life)

a. Cultural facilities: Cultural facilities is in Objective 2 of the strategy. More specifically, Secondary Objectives 2.1, 2.2, 2.3 and 2.4 addressed this factor of smart living. Efforts were directed towards the development of relevant regional and cultural centres like Ülemiste City and Tallink City and modernise infrastructure of Kopli Peninsula. More so, measures were also directed towards ensuring that the old town of Tallinn as a site in UNESCO world heritage does not get destroyed and modern solutions would strengthen the integrity of the urban space of Tallinn. More so, the reconstruction of Tallinn City Hall, Kultuurikatel (Culture Cauldron) and development of Park Kadriorg, Tallinn Zoo and Tallinn Botany Garden also weighed heavily under this factor. Finally, reconstruction and re-building of the connection roads of Tehnika-Veerenni-Filtri streets and reconstruction of Pärnu Road were aimed at strengthening relevant cultural facilities in Tallinn City.

b. Health conditions: Health conditions is in Objective 4 of the strategy. More specifically, Secondary Objectives 4.5 and 4.6 addressed this factor of smart living. The objective amongst other things was to ensure the availability of public and private services that could aid the disabled/incapacitated as well as provide them with opportunities for coping adequately and enjoying an active life.

c. Individual safety: Individual safety is in Objective 4 of the strategy. More specifically, Secondary Objectives 4.7 addressed this factor of smart living. The fundamental objective here was to ensure and guarantee the safety of the average Tallinner. This objective was achieved by involving community to prevent of crime and promoting collaboration among different enterprises in

preventing the crime in the city. More so, there was relevant collaborations with non-profit and private sector in guaranteeing public order as well as individuals' safety.

d. <u>Housing quality</u>: Housing quality is in Objective 5 of the strategy. More specifically, Secondary Objectives 5.3 addressed this factor of smart living. The objective here was to manage, and maintain target buildings in the city, manage single apartments in the city and finally promote the management and implementation of IT opportunities that would guarantee the provision of better housing quality.

e. <u>Education facilities</u>: Education is addressed in Objective 3 of the strategy. More specifically, Secondary Objectives 3.1, 3.2 and 3.3 addressed this factor of smart living. As stated earlier, the objective here in improving and developing education facilities included developing services for multicultural learning environments, introducing pre-vocational training opportunities, providing vocational guidance and career planning, developing general education institutions and finally, enabling vocational study for people without basic education.

f. <u>Touristic attractivity</u>: Tourism and touristic attractivity is addressed in Objective 1 of the strategy. More specifically, Secondary Objective 1.4 addressed this factor of smart economy. The goal was to introduce Tallinn City as a culture/cultural capital by updating permanent exhibitions of cultural heritage, organising exhibitions and events introducing the cultural heritage of the city, supplementing the exhibits of Tallinn City Museum and renovation of the cannon tower of Kiek in de Kök, amongst others. More effort was also directed towards creating quality urban space around old town and improving

movement possibilities for tourists. Finally, efforts were directed towards developing the Park Kadriorg as well as the Song Festival Ground in a bid to incorporate them as integral recreation areas/centres.

g. Social cohesion: Social cohesion is addressed in Objectives 3 and 4 of the strategy. More specifically, Secondary Objectives 3.1, 3.2, 4.3 and 4.4 are all linked to the concept of social cohesion. For emphasis, social cohesion indicates the strength/reliability of relationships and the sense of solidarity between Tallinners. In the same vein, providing support services to families having difficulties in coping, taking care of children without parental care in a family, taking care of children without parental care in the children's home, determining and paying the child benefit and family benefit and finally, providing services for favouring coping of children and families are all indicators/strategies aimed at achieving social cohesion in Tallinn City.

4.1.2 Smart city factors in the Tallinn Development Plan 2014 - 2020

This development strategy was built on the Tallinn Development Plan for 2009 - 2027 above (City of Tallinn, 2014). The crux of this development plan was ensuring a socially safe and clean-living environment. This plan/strategy also sought to boost employment, as well as manage the consequences of long financial crisis. (*Ibid*.).

i. ***Analysis of the smart city factors under the development Plan of Tallinn 2014 - 2020***

A. Smart economy (Competitiveness)

a. Innovative spirit: Innovative spirit is addressed in Objective 1 of the strategy. More specifically, Secondary Objective 1.1 addressed this factor of smart economy. The bulk of the measures were geared towards creating an

entrepreneurial labour market where Tallinners were well-paid and highly motivated. It also sought to ensure high activity of entrepreneurship such that a good number of companies could successfully leave business incubators in the city. Finally, measures such as promoting entrepreneurship and entrepreneurship competitions were adopted in ensuring high-quality employment of the population thus reducing the barriers of entry into the Tallinn labour market.

b. Entrepreneurship: Entrepreneurship is addressed in Objective 1 of the strategy. More specifically, Secondary Objective 1.1 addressed this factor of smart economy. Clearly, ensuring a sustainable and friendly business environment for start-ups and creative enterprises was a pressing need/objective, because these start-ups and creative enterprises had the potential of positively impacting the economy of Tallinn City. This objective also sought to create sustainable conditions for the development of knowledge intensive, high productivity entrepreneurship in the city. Other means for improving entrepreneurship in the city include the organisation of short training programs, relevant subsidies for start-up companies and the provision of other support services for new working spaces and environments.

c. Economic image & trademarks: Economic Image & trademark is addressed in Objective 1 of the strategy. More specifically, Secondary Objective 1.3 addressed this factor of smart economy. Efforts were directed towards the foreign marketing of the business environment of Tallinn City. The end goal was to improve the economic image of the city. Thus, measures such as the presentation of the business environment and the investment opportunities of Tallinn City at trade fairs and other contact making events as well as the

preparing and distributing information materials (such as brochures, multimedia, web, advertising, articles and broadcasts) that introduce the city's business environment and investment opportunities were adopted to achieve this developmental strategy.

d. <u>Productivity</u>: Productivity is addressed in Objective 1 of the strategy. More specifically, Secondary Objectives 1.2 and 1.3 addressed this factor of smart economy. In other to increase productivity of Tallinners in general, a number of measures were highlighted and adopted such as improving the innovative culture and raising the awareness of entrepreneurs, in conjunction with educational institutions, competence centres, and research & development organisations, development of technology parks (i.e., Tehnopol, Ülemiste City), providing support for clusters and establishment of more cluster centres and finally, collaborating with professional associations (e.g, the Estonian Chamber of Commerce, Enterprise Estonia etc) and other support structures.

e. <u>Flexibility of labour market</u>: Flexibility of labour market is addressed in Objective 1 of the strategy. More specifically, Secondary Objective 1.3 addressed this factor of smart economy. In ensuring that the labour market was flexible, the goal was to lower the barriers of entry into the Tallinn labour market. To achieve this objective, the following measures were highlighted and adopted: adoption and execution of projects designed to restore good work habits, reintegration of the unemployed, inactive and discouraged citizens back into the Tallinn labour market, providing requisite support for the creation of new job opportunities. It is expedient to point out that this creation of job opportunities also extended to persons/individuals with reduced mobility.

f. <u>International embeddedness</u>: To some extent, international embeddedness is addressed in Objective 1 of the strategy. More specifically, Secondary Objective 1.4 addressed this factor of smart economy. The strategy here was directed towards ensuring innovative, effective and reliable tourist information services, organisation of tourism research, establishment of a multifunctional conference centre, and foreign media amongst others.

g. <u>Ability to transform</u>: This factor was not addressed under the development plan of Tallinn 2014 - 2020.

B. <u>Smart people (Social and Human Capital)</u>

a. <u>Level of qualification</u>: Level of qualification is addressed in Objective 3 of the strategy. More specifically, Secondary Objectives 3.1, 3.2 and 3.3 addressed this factor of smart people. As pointed out earlier, the proponents of this development strategy envisioned a city where every Tallinner had a competitive level of qualification. Accordingly, to achieve this goal/objective, efforts were directed towards including and providing adequate support for pupils/individuals with special educational needs, duly recognising and awarding best graduating students, development of a multicultural learning environment, provision of vocational training opportunities to individuals without basic education, creation of flexible learning opportunities, organising competitions, trainings, conferences and recognition events for students, and providing support for the development of requisite digital competences.

b. <u>Affinity to life-long learning</u>: Affinity to life-long learning is addressed in the title of Objective 3 of the strategy. In a bid to encourage and support life-long learning amongst Tallinners, the following measures/strategies were relied on:

establishment of a multicultural learning environment for citizens, organising information events in schools, and youth centres, provision of IT/ICT tools necessary for learning activities, creation of new youth centres, providing support to various youth associations, organisation of intermittent youth conferences, and finally organising competitions that recognise young people.

c. <u>Social and ethnic plurality</u>: Social and ethnic plurality (i.e., multiculturalism) is addressed in Objectives 3 and 2 of the strategy. More specifically, Secondary Objectives 3.2 and 2.1 addressed this factor of smart people. The proponents of this development plan sought to ensure that all citizens in Tallinn City had equal opportunity and also equal access to social, health, welfare and educational amenities. For example, efforts were directed towards ensuring the development of welfare and institutions and also introducing learning possibilities. More so, another objective of the development plan was to ensure that the needs of the citizens and community members are met whilst contemporaneously providing opportunities for self-development.

d. <u>Flexibility</u>: This factor was not addressed under the development plan of Tallinn 2014 - 2020.

e. <u>Creativity</u>: Creativity is addressed in Objectives 1, 2 and 3 of the strategy. More specifically, Secondary Objectives 1.1, 2.2 and 3.5 addressed this factor of smart people. To foster more room for creativity, residents (i.e., creative citizens/individuals) were allowed to introduce their work and also experience art. Furthermore, as a result of the fact that the concepts of creativity, innovation and entrepreneurship are intertwined, strategies were put in place aimed at promoting entrepreneurship, flexible opportunities for hobby education and recreational activities. Other activities included organising relevant creative and

entrepreneurship events/competitions, execution of an entrepreneurship development program, development of Nature Houses and learning gardens, provision of short training courses, provision of modern environments for learning and understanding the environment, nature and technology and finally, business consulting opportunities, amongst others.

f. <u>Cosmopolitanism/Open-mindedness</u>: Cosmopolitanism/open-mindedness is addressed in Objectives 2 and 3 of the strategy. More specifically, Secondary Objectives 3.2 and measure 2 addressed this factor of smart people. This factor strived to organise general opportunities that provided support for the development of learning environments, provide for the needs of citizens, and develop a multicultural learning & business environment. The objective at the end of the day was to create a city or community that embraced the spirit and culture of togetherness, equal opportunities, oneness, fairness and open-mindedness.

g. <u>Participation in public life</u>: Participation in public life is addressed in Objective 6 of the strategy. More specifically, Secondary Objectives 6.1, 6.2 and 6.6 addressed this factor of smart people. Clearly, the management of public data platforms/bases and the availability of these public data is a prerequisite for participation in public life.

C. <u>Smart governance (Participation)</u>

a. <u>Participation in decision making</u>: Participation in decision-making is linked with Objective 6 of the strategy. More specifically, Secondary Objective 6.6 addressed this smart governance characteristic. Suffice it to note that this was basically a repetition from the development plan of Tallinn 2009 - 2027.

b. <u>Public and social services</u>: Provision of quality public and social services is partially addressed in Objective 6 of the strategy. More specifically, Secondary Objectives 6.4 addressed this factor of smart governance. Suffice it to note that this was basically a repetition from the development plan of Tallinn 2009 - 2027.

c. <u>Transparent governance</u>: Transparent governance is addressed in Objective 6 of the strategy. More specifically, Secondary Objectives 6.1, 6.2, 6.3, 6.4 and 6.5 addressed this factor of smart governance. The goal was to ensure a governing council/ central government that was transparent, fair, equitable and just when leading the country and executing policies for the benefit of all citizens. More particularly, developing and implementing new methods of public staff recruitment, executing development programs for employees etc., were strategies used and engaged to ensure transparent governance.

d. <u>Political strategies & perspectives</u>: This factor was not addressed under the development plan of Tallinn 2014 - 2020.

D. <u>Smart mobility (Transport and ICT)</u>

a. <u>Local accessibility</u>: This factor was not addressed under the development plan of Tallinn 2014 - 2020.

b. <u>(Inter-)national accessibility</u>: This factor was not addressed under the development plan of Tallinn 2014 - 2020.

e. <u>Availability of ICT-infrastructure</u>: Provision of requisite ICT infrastructure is partially in Objective 6 of the strategy. More specifically, Secondary Objectives 6.5 addressed this factor of smart mobility. Actions/efforts were directed towards creating and developing an integral ICT infrastructure and organising

ICT support service for the city. More so, more room was allowed for continuous cooperation with developers and managers of state information systems and finally, public and e-services were provided in libraries.

c. <u>Sustainable, innovative and safe transport systems</u>: Sustainable, innovative and safe transport systems is partially in Objective 5 of the strategy. More specifically, Secondary Objectives 5.1 addressed this factor of smart mobility. Under this strategy, focus was placed on public transport organization, expansion of rail network, creation of the public transport control centres and the development of effective public transport information systems. More so, focus was placed on the development of public transportation fleets, with due consideration for needs of the elderly and children, and finally, optimisation of public transport routes and infrastructures.

E. Smart environment (Natural resources)

a. <u>Attractivity of natural conditions</u>: This factor was not addressed under the development plan of Tallinn 2014 - 2020.

b. <u>Pollution</u>: Pollution is Objective 5 of the strategy. More specifically, Secondary Objective 5.5 addressed this factor of smart environment. The goal was to ensure the healthy condition of the natural environment and prevent air, water, marine, land or noise pollution. In a bid to prevent environmental pollution and degradation, the following critical measures were taken: monitoring of noise levels and ambient pollution, monitoring of potential flood risks, proper and effective removal of unused/old bore wells with elements of residual contamination, preparation of an action plan for noise reduction, preparation of an action plan in collaboration with the Ministry of the Environment for the

reduction of fine solid particles, and organising the research necessary for achieving good ambient air quality, etc.

c. <u>Environmental protection</u>: Environmental protection is Objective 5 of the strategy. More specifically, Secondary Objective 5.2 and 5.5 addressed this factor of smart environment. This particular development plan focused on the preparation of urban storm water management schemes as well as facilities for preventing floods caused by rainwater. It also sought to improve the infrastructure of beaches and facilitate better water supply. Finally, tidying the forest stands, parks and green areas in the city were focal points of this development plan. In a bid to further protect the environment, measures were taken to prevent the deterioration of the aquatic ecosystems and terrestrial ecosystems, and also preserve the biodiversity of water-related aquatic life.

d. <u>Sustainable resource management</u>: Sustainable resource management is Objective 5 of the strategy. More specifically, Secondary Objective 5.2 and 5.5 addressed this factor of smart environment. Under this objective, focus was placed on ensuring proper eradication of unused bore sites with residual elements, purification of soil and groundwater, maintenance of emergency reserve wells, sustainable use of water reserves, enacting principles for groundwater bodies and water resources, conservation of natural riverbeds, protection of groundwater from pollution as a result of toxic substances, and finally, organising the adaption global health and environmental standards.

F. <u>Smart living (Quality of life)</u>

a. <u>Cultural facilities</u>: Cultural facilities is addressed in Objective 2 of the strategy. More specifically, Secondary Objectives 2.1, 2.2 and 2.3 addressed this factor

of smart living. Again, and as earlier emphasized, the goal was to ensure that the needs of the residents/citizens were met with cultural and self-development opportunities. This entailed providing support needed by cultural facilities, reconstruction of the Tallinn Festival Grounds, providing support for Song-and-Dance Festivals, ethnic minority organisations and other relevant cultural projects. This factor of smart living also involved financing cultural and recreational centres, development of additional cultural centres/facilities, organisation of cultural heritage events and digitising of Estonia's oldest documented cultural heritage and providing online access to it.

b. <u>Health conditions</u>: Health conditions is in Objective 4 of the strategy. More specifically, Secondary Objectives 4.5 and 4.6 addressed this factor of smart living. The objective was to improve available health care facilities, and nursing care services. Some of the measures included covering health care costs for uninsured persons, compensation of pharmaceutical expenses for disadvantaged people, provision of nursing support and care services, creation of health-promoting networks, raising awareness about diseases, and attendant prevention of infectious diseases, prevention of drug use and finally, reducing risk behaviour among injection drug users.

c. <u>Individual safety</u>: Individual safety is addressed in Objective 4 of the strategy. More specifically, Secondary Objectives 4.7 addressed this factor of smart living. In order to ensure and guarantee individual safety, mechanisms were put in place to combat crime and ensure compliance with law and order. To further ensure individual safety of Tallinners, the following measures were engaged; organisation of crime-prevention and safety awareness projects, providing support for joint crime prevention projects of the city and the police and also

cooperating with the non-profit organizations and private sector in maintaining public order and safety. In addition, efforts were directed towards reinforcing the Municipal Police and improving on Tallinn's video surveillance network.

d. <u>Housing quality</u>: Housing quality is addressed in Objectives 4 and 5 of the strategy. More specifically, Secondary Objectives 4.1, 4.3 and 5.3 addressed this factor of smart living. Strategies under this factor included construction of new housing units, maintenance, technical servicing and upkeep of single dwelling units in the city, provision of social housing units that cater to the special needs of citizens, building of social accommodation units and social housing according to needs of the citizens, and provision of interest-rate subsidies for apartment associations. In conclusion, suffice it to note however that more focus was placed on improvement of available housing funds as against improvement of housing quality.

e. <u>Education facilities</u>: Education is addressed in Objective 3 of the strategy. More specifically, Secondary Objectives 3.1, 3.2 and 3.3 addressed this factor of smart living. To improve the general level of qualification amongst Tallinners, basic, tertiary and secondary education were made cheap and easily available. In addition, pre-vocational tutelage was introduced in schools. Career planning and vocational guidance were also made easily available in all schools. More so, creating educational institutions, introducing study opportunities and sponsoring vocational trainings for individuals without basic education were all explored as a means of increasing the general level of qualifications amongst Tallinners.

f. <u>Touristic attractivity</u>: Tourism and touristic attractivity is addressed in Objective 1 of the strategy. More specifically, Secondary Objective 1.4

addressed this factor of smart economy. This plan further sought to ensure that Tallinn was an internationally renowned city offering high quality tourism and was highly recognized as a breeding ground for the activities of museums, and heritage collection. Major objectives here include introducing Tallinn as a destination for conference tourism and training of conference tourism operators. More so, focus was also placed on developing a cultural tourism project in Tallinn city, and ensuring one festival in Tallinn is internationally known and recognized worldwide or within the region (a very good example in this regard is the Savonlinna Opera Festival, and the Venice Biennale).

g. Social cohesion: This factor was not addressed under the development plan of Tallinn 2014 - 2020.

4.1.3 Smart city factors in the Tallinn Development Plan 2035

This particular development plan placed more emphasis on environmental protection, culture, viable business environment, education, health and healthcare, youth work/empowerment, mobility, social welfare, urban landscape, planning and utility networks (City of Tallinn, 2020). It is safe to conclude that this action plan made the most progressive efforts in providing for all the components of a smart city (i.e., smart economy, smart people, smart environment, smart governance, smart mobility, smart living etc.) as identified by Giffinger *et al.* (2007).

i. **Analysis of the smart city factors under the development Plan of 2035**

A. Smart economy (Competitiveness)

a. Innovative spirit: Innovative spirit is provided for in strategic goal 2 of this development Plan. This city plan allowed more room for Tallinn to be known as a reputable centre of innovation, where international companies also bring

new products and services to the market. More so, this strategy allowed new approaches and new solutions to be tested in the management of the city without the fear of making mistakes, but with mistakes seen as opportunities for learning and development.

b. <u>Entrepreneurship</u>: Entrepreneurship is provided for in strategic goal 2 of this development Plan. This city plan also placed focus on increasing the interest and awareness of citizens towards entrepreneurship and smart production of services with high added value. Clearly, the underlying objective here is that an attractive business environment, will attract the business leaders and foreigners to Tallinn and increase the international recognition of the city. Finally, the general business and living environment in Tallinn City is competitive in contrast with other European cities and this factor no doubt, attracts foreigners with the requisite skills, expertise and knowledge. Tallinn City is also geared towards allowing start-up companies easily thrive and exist and is a conducive meeting place for digital nomads.

c. <u>Economic image & trademarks</u>: This factor was not addressed under the development plan of Tallinn 2035.

d. <u>Productivity</u>: Productivity is provided for in strategic goal 2 of this development Plan, which is aimed at ensuring a creative global city. Creativity, innovativeness and productivity go hand-in-hand. In other words, productivity is the brainchild of innovation and creativity. Thus, the hitherto labour-intensive business models are aimed to be replaced by business models that were "research-based, nature-friendly and resource-efficient." The newly adopted business models also support the active use of digital technology in the business

and public sectors. The usefulness of trainings and education in stimulating productivity cannot also be overstated.

e. <u>Flexibility of labour market</u>: Efforts were directed towards ensuring the flexibility of the labour market to favour the interest of an average entrepreneur in Tallinn City. To achieve this flexibility, newer technologies would be embraced and more innovative and smart solutions would be adopted to facilitate better market competitiveness. This goal also sought to increase social cohesion and equal opportunities in education as well as the general labour market. Finally, the flexibility of the Tallinn labour market would eventually attract more nationals, investors and foreigners to the country.

f. <u>International embeddedness</u>: To achieve this objective of international embeddedness, efforts were directed towards identifying Tallinn City as an open learning space where continuous learning and accumulation of new information is the new reality and a natural part of the everyday life of an average Tallinner such that it helps people easily adapt flexibly to the changes occurring in society. Suffice it to note that there is a relationship between international embeddedness and affinity to lie-long learning. More so, the wellbeing of the city is hinged on a knowledge-intensive economy in conjunction with smart production and provision of services that deliver high added value.

g. <u>Ability to transform</u>: This factor was not addressed under the development plan of Tallinn 2035.

B. <u>Smart people (Social and Human Capital)</u>

a. <u>Level of qualification</u>: Level of qualification is provided for in strategic goal 2 of this development Plan, which is aimed at ensuring that Tallinn is a city of research, innovation and experimentation. One of the core mandates of this strategy is to establish and identify Tallinn City as a city that allows ample room for new initiatives, trends, higher learning and products to be launched. This is interesting because Tallinners are very much open-minded to these new discoveries and technologies. The resultant effect is that the general level of qualification for an average Tallinner is positively impacted on. Finally, this factor encouraged opportunities where foreigners could acquire basic and general education in English language (as well as other languages) as a means of supporting their arrival and acclimatization process into the Tallinn society/community. It is interesting to point out that this support is also enabled to facilitate general digital literacy.

b. <u>Affinity to life-long learning</u>: Affinity to life-long learning is provided for in strategic goal 2 of this development Plan. Agreeably, lifelong learning is the new reality and a natural part of everyday life that helps people adapt flexibly to the changes occurring in society. This plan creates numerous opportunities for lifelong learning, for example, nursery schools and childcare establishments, schools and universities, cultural and sports institutions, cinema and theatre, facilities for hobbies, exercising and playing, etc.

c. <u>Social and ethnic plurality</u>: Social and ethnic plurality is provided for in strategic goal 6 of this development Plan. For emphasis, this strategy is aimed at ensuring that Tallinn City is a kind community. Consequently, a kind community is at the heart of Social and ethnic plurality. In conclusion, more

efforts were directed towards ensuring that the Tallinn community embraced four fundamental tenets which include a strong sense of security, independent coping, a civil society built on the principles of strength and courage and finally, an integrated/unified society. A strong sense of security presupposes crime being reduced to the barest minimum, whilst independent coping presupposes citizens having free access to ask for help and the availability of preventative and timely help which would allow Tallinners cope independently as well as have the guaranteed access to needs-based and human-centred public services.

d. <u>Flexibility</u>: Flexibility is greatly encouraged under this development plan. Firstly, the expectations and nature of work in Tallinn City should be greatly modified by 2035. In order words, workforces should allow more room for flexibility, and mobility. This cannot be over-emphasized because the concepts of flexibility, mobility, social relationships and self-realisation opportunities should be placed above merely having a stable workplace. In addition to the above, this flexibility also extends to the legal and tax environment. One of the goals of this development plan is to create a flexible and stable legal and tax environment that allows ample room for the implementation of business models and conducive living environments. The end goal of this flexibility program is to facilitate the arrival of foreign talents, as well as better investments from international companies to the city.

e. <u>Creativity</u>: As earlier emphasized, strategic goal 2 seeks to ensure Tallinn City is a creative global city. This goal/objective of being a creative global city had five fundamental principles which included ensuring Tallinn was at the heart of a smart economy, ensuring Tallinn accommodated open/accessible learning spaces, ensuring Tallinn was a recognized city of research, innovation and

experimentation, ensuring Tallinn was recognized as a beautiful city of creative people and events and finally ensuring the protection of architectural and cultural heritage. More specifically, ensuring Tallinn was recognized as a beautiful city of creative people and events involved allowing room for creative boldness and a desire for freedom. Finally, this creativity was to expressed in the simplest of things where citizens love and are encouraged to going for concerts, theatre performances, entertainment establishments and sports competitions, amongst others.

f. Cosmopolitanism: Suffice it to note that the Action Program 2 (AP2) addressed this factor. For context, the business development of the plan envisaged a commercially viable city where entrepreneurship, innovation and the commercialisation were encouraged and testing of new technology and business models were heavily supported.

g. Participation in public life: This strategy aimed at increasing the unity of governance and ensuring the smooth functioning of the state in order to develop the provision of public services. More so, the plan sought to conduct necessary capacity-building trainings for public officials.

C. **Smart governance (Participation)**

a. Participation in decision making: Strategic goal 6 - Kind community addressed this factor of smart governance. For context, participation in decision making envisaged making life really easy and comfortable for Tallinners such that citizens would be better encouraged to get actively involved in the decision-making processes both about governance and leadership.

b. <u>Public and social services</u>: In addition, it is interesting to note that strategic goal 6 - Kind community also addressed this factor of smart governance. Under this factor, the availability of essential public and social amenities for example, good roads, better community, efficient transport systems etc) are to be made readily available to enable better, healthier and easier living in Tallinn City.

c. <u>Transparent governance</u>: Strategic goal 6 - Kind community - addressed this factor of smart governance. For context, transparent governance presupposes a governing council that acts in the best interest of Tallinners such that the leaders are accountable, responsible and transparent with the citizens they lead. This factor of transparent governance also leaves room for the citizens to freely express their political desires as well as impeach leaders who do not act in their best interest.

d. <u>Political strategies & perspectives</u>: Finally, Strategic goal 6 - Kind community - addressed this factor of smart governance. For context, political strategies and perspectives envisages a city that allows room for freedom of expression political thoughts and strategies, such that citizens (i.e., Tallinners as well as foreigners) are not discriminated on grounds of their political choices, strategies or perspectives.

D. <u>Smart mobility (Transport and ICT)</u>

a. <u>Local accessibility</u>: The development plan approved task force accessibility. This helped to increase the accessibility of the living environment and society in both the physical environment (public transport, buildings, road infrastructure) and the information environment (e.g. e-environments, media).

This plan also sought to provide a needs-based interoperable transport service that includes all means of transportation.

b. (Inter-)national accessibility: This factor was addressed under strategic goal 2 of the development plan which sought to ensure Tallinn City is a creative global city. This entailed ensuring that public and basic amenities like; the railway station, the airport, market, hospital, ICT facilities, the harbour and the city centres - are well connected and easily accessible with the rest of the urban space in Tallinn City.

c. Availability of ICT-infrastructure: This strategy also engaged steps aimed at creating a regulatory environment conducive to the adoption of new ICT technologies and business models and to develop the digital economy. In addition, this objective seeks to ensure the availability of information services for foreign nationals and their employers who need to live and work in Estonia - Tallinn. This is one of the underlying reasons why Tallinn has been as the top 20 cities by the Global Expat Index Ranking. This is an indicator of the remarkable smart city progress being made in the country. In addition, a number of key courses of action were enacted/adopted to support foreign specialists and new immigrants. One such action is the; "*recruitment and adaptation programme of the International House*."

d. Sustainable, innovative and safe transport systems: Sustainable, innovative and safe transport system is provided for in strategic goal 3 of this development Plan. The overall goal/objective is to ensure that 90% of residents will have a public transport stop within a 400-metre radius of their homes. Essentially, this plan has smart mobility at the core of its objectives, such that great urban and regional transport networks that would promote entrepreneurship and

convenient international connections will be available to improve Tallinn's competences. In addition, this goal sought to combine different forms of mobility conveniently and economically. Public transport vehicles, weather-proof buses, fast public transport connections and tram shelters were largely considered under this development strategy.

E. Smart environment (Natural resources)

a. Attractivity of natural conditions: This factor is provided for in strategic goal 4 of this development Plan - green transformation. The objective under this factor is to ensure that natural habitats and conditions are clean, safe, habitable and sustainable. It is interesting to note that this objective of making natural conditions attractive is closely tied with protecting the environment, green areas recreational parks etc.

b. Pollution: This factor is provided for in strategic goal 4 of this development Plan - green transformation. The strategy projected the use of biological diversity in the fight against pollution, amongst other things. For emphasis, biological diversity (also referred to as biodiversity) refers to the totality of plant and animal life on earth and the ecological complexes, in which they occur, vis-à-vis the ecosystem structure and function.

c. Environmental protection: Environmental protection is provided for in strategic goal 4 of this development Plan. This strategy plan worked towards reducing greenhouse gas emissions (GHG) in Estonia. The plan set an ambitious goal of achieving climate neutrality by 2050. With regards to environmental planning, this development plan sought to ensure a safe and clean environment that will be attractive to locals as well as to those who are spending time temporarily.

Finally, ensuring that Tallinn City is environmentally friendly and protected is the central focus of this strategy

d. Sustainable resource management: This factor involved the sustainable and economic use, management and exploration of resources in Tallinn City such that future generations could also enjoy and have access to these resources. Thus, the goal of becoming a circular economy definitely makes the city more attractive. For example, less waste is generated in the city as a result of the adoption of more informed production and consumption methodologies. In addition, a large majority of municipal waste is properly recycled/managed, and less food/resource is thrown away. Finally, it is instructive to note that resource-efficient industrial enterprises are encouraged to use materials sustainably and take responsibility for re-processing their end/final products.

F. Smart living (Quality of life)

a. Cultural facilities: Cultural facilities is provided for in strategic goal 2 of this development Plan. The goal here is to protect and build cultural heritage as well as keep architectural ensembles as complete as possible. In addition, the languages, cultural heritage and facilities of Estonians and the other nationalities living in Tallinn are protected and developed. More so, it is worthy of note that relevant support and self-realisation opportunities are to be provided to professional creators of culture. In order to further encourage cultural facilities, the following courses of action were proposed; allowing room for more diverse cultural and recreational opportunities, allowing room for the development of viable networks of cultural centres and cultural activities; and

finally cooperating (both nationally and internationally) with relevant cultural citizens and cultural associations.

b. <u>Health conditions</u>: Health conditions is provided for in strategic goal 3 of this development Plan. This smart living concept envisaged by this city plan would allow people to live a stress-free and healthy life. More so, adequate facilities and amenities would be provided vis-à-vis supports for good mental and physical health of its citizens, active life and healthy eating and ensuring that people's lives are not ruled by alcohol, tobacco and other addictive substances.

c. <u>Individual safety</u>: The mission of this strategy is to design and redesign Tallinn in a way that individual safety would be guaranteed, thus ensuring the city would be the best possible home for citizens, attractive destination for tourists and a good starting point for those who wish to live in the city. More so, this factor aimed at creating a safe environment for children to go to school and return home on their own by foot, bike or public transport and play with their friend's outdoor.

d. <u>Housing quality</u>: Housing quality is provided for in strategic goal 6 of this development Plan. The goal is to provide quality, energy efficient and diverse homes that offer protection and security to citizens. The underlying understanding is that there is a home suitable for everyone in Tallinn. More so, efforts were directed towards ensuring that homes have been provided for people with special needs.

e. <u>Education facilities</u>: This factor was not addressed under the development plan of Tallinn 2035.

f. <u>Touristic attractivity</u>: This factor was not addressed under the development plan of Tallinn 2035.

g. <u>Social cohesion</u>: This factor was not addressed under the development plan of Tallinn 2035.

4.1.4 Summary of the analysis

<u>**An overview of how the smart city factors were covered (Summary of analysis instead)**</u>

The answer to the aforementioned question is in the affirmative as the adoption of smart city narrative has definitely changed the strategic language of Tallinn City. **The development strategy of Tallinn 2009 - 2027** directed efforts towards being a smart economy addressing two out of the seven factors. This development plan also embraced **the smart people characteristic, as all seven factors were addressed. On smart governance (participation) characteristics, all four factors were all provided for. More so, this development plan directed efforts towards the Smart mobility characteristic, the four factors were all addressed. On smart environment (Natural resources), also the available four factors were all addressed. Finally, on the characteristic of smart living (Quality of life), all seven factors weighed heavily in the mind of the strategists. **In conclusion, this development plan, addressed twenty-eight factors of a smart city as identified by Giffinger *et al.* (2007).**

The development strategy of Tallinn 2014 - 2020 on the other hand directed efforts towards being a smart economy addressing six of the seven available factors. The development plan did not address the characteristics of ability to transform. This plan also embraced the Smart people characteristic, as six of the seven available factors were also addressed. On smart governance (Participation), three of the four available factors were provided for. Additionally, this development plan directed concerted efforts towards the Smart mobility factor (transport and ICT), two of the four available factors were addressed. On smart environment (Natural resources), three of the four available factors were addressed. Finally, on the characteristic of smart living (Quality of life), six of the factors, weighed heavily in the mind of the strategists.

In conclusion, this development plan addressed twenty-six factors of a smart city as identified by Giffinger *et al.* (2007).

Finally, **the development strategy of Tallinn 2035** directed efforts towards being a smart economy with particular focus on addressing five of the seven factors. This plan also embraced the Smart people characteristic, addressed six of the seven factors. On smart governance (Participation), all four factors were provided for. Additionally, this development plan directed concerted efforts towards addressing all the four factors of Smart mobility factor. (Transport and ICT). On smart environment (Natural resources), three of the four factors were addressed. Finally, on the factor of smart living (Quality of life), four of the seven factors weighed heavily in the mind of the strategists. **In conclusion, this development plan addressed twenty-six factors of a smart city as identified by Giffinger *et al.* (2007).** Based on this analysis, a change in strategic language cannot be identified, due to the fact that all three strategies cover more-or-less the same amount of characteristics.

4.2 Text analysis of Tallinn City's development plans.

The previous analysis shows that all three development plans covered a similar number of smart city factors which does not allow to make conclusions regarding the change of strategic language in Tallinn City. Below is a table representing further analysis of the three development plans. The analysis looks at the presence of keywords that represent the five sub-streams of smart city literature identified by Stübinger and Schneider (2020). The chosen words had the highest presence in the literature. Looking at the latest analysis, we can see a shift in strategic language, based on the text analysis, the Tallinn 2035 development plan have more keywords presence compared to other plans.

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S/N	Keyword	2009 - 2027	2014 - 2020	2035
	Smart infrastructure			
1.	Grid	0	0	1
2.	Mobility	5	7	114
3.	Environment	108	129	162
4.	Home	25	33	75
5.	Meter	0	0	0
	Smart economy			
1.	Project	98	62	23
2.	Governance	0	1	3
3.	Tourism	37	64	16
4.	Region	31	21	65
5.	Government(s)/governmental	68	85	13
	Smart technology			
1.	Digital/digitally/digitalisation	4	3	26
2.	Device(s)	4	4	0
3.	Phone	2	0	0
4.	Objects	11	14	4
5.	Computing	0	0	0
	Smart sustainability			
1.	Growth	8	26	15
2.	Initiative	3	3	6
3.	Sustainable/sustainably/sustainability	19	32	36
4.	Service(s)	217	270	206

5.	Energy	10	12	47
6.	Green	19	22	113
	<u>Smart health</u>			
1.	Person(s)/personal/personnel/personalised	52	27	24
2.	Community	5	10	34
3.	Citizen(s)	24	10	93
4.	Healthcare	0	1	20
5.	Combination	0	0	0

Table 1: This table looks at the presence of keywords that represent the five sub-streams of smart city literature identified by Stübinger and Schneider (2020).

4.3 **Talent management in the 3 selected Tallinn City's development plans**

Suffice it to note that the three development plans analysed above addressed a number of policy measures of talent management discussed under the literature review. As pointed out earlier, different talent management measures and strategies have been used and enacted in the context of talent policies worldwide. These polices all strive to attract and retain international talents to a particular geographic location. There are no hard and fast rules as to which policies work. Hereunder, we provide an analysis of the three selected city/development plans of Tallinn City vis-a-vis talent management policies.

4.3.1 Development Plan of Tallinn 2009 - 2027

    a. <u>Immigration packages</u> - This was not addressed under the development plan of Tallinn 2009 - 2027.

    b. <u>Temporary to permanent visa pathways</u> - This was not addressed under the development plan of Tallinn 2009 - 2027.

c. <u>Retaining top foreign students</u> - This was not addressed under the development plan of Tallinn 2009 - 2027.

d. <u>Tax incentives and rebates</u> - This was not addressed under the development plan of Tallinn 2009 - 2027.

e. <u>Investment opportunities and ease of doing business</u> - Characteristics such as sustainable, innovative and safe transport systems, local accessibility, (Inter-)national accessibility, availability of ICT-infrastructure, transparent governance, economic image & trademarks, social cohesion, and cosmopolitanism/open-mindedness were indicative of driving more investment opportunities. As pointed out earlier, international talents and foreigners are very much interested in available investment opportunities in a target foreign country.

f. <u>Employment/job opportunities</u> - This development plan embraced characteristics of a smart city that sought to create ample employment opportunities and options for the average Tallinner. For example, characteristics such as entrepreneurship, flexibility of labour market, innovative spirit, productivity, and international embeddedness were addressed. In conclusion, this plan directed efforts towards ensuring that international talents and foreigners have access to competitive and decent work/ job opportunities.

g. <u>Legal and regulative measures</u> - This was not addressed under the development plan of Tallinn 2009 - 2027.

h. <u>Quality of life (i.e., Environment and essential services)</u> - This development plan directed efforts towards ensuring that Tallinners had access to decent/conducive standard of living, including factors aimed at improving the standard living of Tallinners. It is also interesting to point out that this strategy was the first to identify and highlight the need to offer international curriculum in some schools in Tallinn.

4.3.2 Development Plan of Tallinn 2014 - 2020

a. Immigration packages - This was not addressed under the development plan of Tallinn 2014 - 2022.

b. Temporary to permanent visa pathways - This was not addressed under the development plan of Tallinn 2014 - 2022.

c. Retaining top foreign students - This was not addressed under the development plan of Tallinn 2014 - 2022.

d. Tax incentives and rebates - This was not addressed under the development plan of Tallinn 2014 - 2022.

e. Investment opportunities and ease of doing business - This development plan emphasized on the following features such as sustainable, innovative and safe transport systems, local accessibility, (Inter-)national accessibility, availability of ICT-infrastructure, transparent governance, economic image & trademarks, social cohesion, and cosmopolitanism/open-mindedness in ensuring that doing business in Tallinn City was easy and beneficial to both the investor and the city.

f. Employment/job opportunities - As with the earlier plan, this development plan also embraced salient features of a smart city that sought to create jobs for the average Tallinner. For example, features such as entrepreneurship, flexibility of labour market, innovative spirit, productivity, and international embeddedness were addressed. In conclusion, this plan directed efforts towards ensuring that international talents and foreigners have access to competitive and decent work/ job opportunities.

g. legal and regulative measures - This was not addressed under the development plan of Tallinn 2014 - 2022.

h. Quality of life (i.e., Environment and essential services) - This development plan also directed efforts towards ensuring that Tallinners had access to decent/conducive

standard of living, including factors aimed at improving the standard living of Tallinners.

4.3.3 Development Plan of Tallinn 2035

a. <u>Immigration packages</u> - This was not addressed under the development plan of Tallinn 2035.

b. <u>Temporary to permanent visa pathways</u> - This was not addressed under the development plan of Tallinn 2035.

c. <u>Retaining top foreign students</u> - This was not addressed under the development plan of Tallinn 2035.

d. <u>Tax incentives and rebates</u> - This was not addressed under the development plan of Tallinn 2035.

e. <u>Investment opportunities and ease of doing business</u> - It is safe to conclude that investment opportunities and ease of doing business were a major objective of this Plan. For proper context, factors such as sustainable, innovative and safe transport systems, local accessibility, (Inter-)national accessibility, availability of ICT-infrastructure, transparent governance, economic image & trademarks, social cohesion, and cosmopolitanism/open-mindedness were indicative of this reality.

f. <u>Employment/job opportunities</u> - This development plan of 2035 also addressed the features of entrepreneurship, flexibility of labour market, innovative spirit, productivity, and international embeddedness etc, that aimed at creating more jobs and employment opportunities.

g. <u>legal and regulative measures</u> - This was not addressed under the development plan of Tallinn 2035.

h. <u>Quality of life (i.e., Environment and essential services)</u> - As with the earlier development plans, this development plan directed efforts towards ensuring that Tallinners had access to decent/conducive standard of living, including factors aimed at improving the standard living of Tallinners. For specific highlight, the English programme introduced into the municipal schools would make the life of an average foreigner more comfortable. In addition, the launch of the International House which serves as a one-stop-shop for many services foreigners required in Estonia generally improves the quality of life of these foreigners. This International House was aimed at ensuring the availability of essential services for foreign specialists and new immigrants.

4.3.4 Short summary of the analysis - An overview of how measures were covered.

The development plan of Tallinn of 2009 - 2027 addressed three out of the eight policy measures of Talent management. In addition, **the development plan of Tallinn of 2014 - 2020** also addressed three policy measures of Talent management. Finally, **the development plan of 2035** similarly addressed three policy measures of Talent management. No plan made comprehensive provisions for immigration packages, temporary to permanent visa pathways, retaining top foreign students, tax incentives and rebates, and legal and regulative measures.

5. DISCUSSION

Under this section, we attempt to provide answers gotten from our analysis to the research questions of this research work. For ease of reference, they include;

i.   Has the adoption of smart city narrative changed the strategic language of Tallinn City?

ii.   Has the adoption of smart city narrative impacted Tallinn City and its strategy regarding talent management?

5.1. Has the adoption of smart city narrative changed the strategic language of Tallinn City?

Our first analysis using smart city factors was quite interesting because there were no massive or distinctive changes between the three development plans. Based on our analysis, no conclusions can be made on the possible changes in the strategic language. It can also be deduced that the development strategy of Tallinn 2009 - 2027 made the most practical step towards being a smart city as identified by Giffinger *et al.* (2007). It addressed twenty-eight factors of a smart city. The development strategy of 2014 - 2020 addressed twenty-six factors of a smart city. Finally, the development strategy of Tallinn 2035 addressed twenty-six factors of a smart city.

As a result of this close tie (28:26:26), the author of this thesis went further to conduct a text analysis of the three development plans (as seen in the table above) and observed a lot of changes therein. Thus, based on the text analysis, it is possible to identify that with the latest strategy (development strategy of Tallinn 2035), it is possible to witness change in strategic language when compared with the previous two strategies.

5.2 Has the adoption of smart city narrative impacted/impacted Tallinn City and its strategy regarding talent management?

The adoption of smart city narrative has not had a big impact on talent policies in Tallinn. Contextually, it is interesting to note that the strategic plans of Tallinn addressed three out of the eight policy measures of talent management. More so, it is important to mention that many of these measures are not under the jurisdiction of Tallinn City. Factors that play a major role in attracting foreigners, are factors already made available by the city, such as provision for good quality of life to the citizens and residents, etc. These factors are not directly linked to foreigners or talent attraction. However, they play a major role in attracting talent. The few activities/initiatives the city has launched specifically for foreign purpose are the international house and the English school programs. Interestingly, the smart city approach in Tallinn is still very much technology-centric. A cursory look at the Development Plan 2035, would reveal that the smart city programme is under the section covering business development, more focus is on technology pilots, innovation procurements etc.

On the other hand, more efforts have been directed towards the areas of investment opportunities and ease of doing business, employment/job opportunities, and quality of life. A cursory examination of all three development plans pointed above would show that the major goal of the proponents and strategists is to improve the general standard of living, comfort, education level, and investment opportunities of the average Tallinner as well and investors and foreigners.

The presence of more talent management features shows whether or not these development plans were "talent management conscious." Accordingly, the three development plans of Tallinn addressed three policy measures of talent management respectively. We can conclude that there is a lot of room for the inclusion of more talent management features. Finally, the city could consider offering scholarships to the top foreign students in order to retain them.

6. CONCLUSION

In conclusion and pursuant to all that has been analysed and juxtaposed above, it is manifestly clear that concept of smart city has become very much acceptable in our today's business environment. This research thesis made a fair attempt in determining whether or not the adoption of smart city narrative changed the strategic language of Tallinn City and whether or not the adoption of smart city narrative impacted Tallinn City and its strategy regarding talent management. Theoretically, smart city initiatives or narratives have the capacity to undoubtedly change the strategic language of a city. The result of this research is summarized as follows; there were no massive or distinctive changes between the three development plans vis-à-vis changing the strategic language of Tallinn City. In addition, the above analysis of the strategic documents of Tallinn City from 2009 - 2035 gives a clear indication that the proponents are desirous of ensuring that Tallinn achieves the status of being a truly smart city. A cursory look at these development plans would reveal that the features of a smart city (i.e., smart mobility, smart economy, smart living, smart environment, smart governance and smart people) have been captured. An in-depth analysis would also reveal that certain salient characteristics of a smart city were featured in these development plans.

This research project also tried to draw a line of connection between the concepts of smart city and talent management. For clarity again, the author of this thesis was able to identify the fact that smart city concepts can be related to talent management policies in a country. For emphasis, smart and talented people are a precondition for a city to transform itself into a smart city. More so, smart people are talents, and they must be managed effectively so as to ensure the proper functioning of technological companies, financial institutions, creative and innovative industries, government institutions, academia, production/manufacturing industries in a smart city. To this end, talent management must be at the forefront of policy makers and

relevant governmental institutions. Furthermore, smart people can affect the nature and structure of talent policies/talent management in a country and vice versa.

In the same vein and as emphasized above, the three development plans of Tallinn addressed three measures of talent management policies. One of the main conclusions is that Tallinn has not specifically focussed on talent attraction and the understanding of smart city development in Tallinn is technology-centric.

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