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Determine the applicability of the fit-for purpose concept in updating cadastral record in Bauchi metropolis, Bauchi state

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Abstract
The research entails to determine the present condition of cadastral Layout plan, because the layout is a document that involve the physical delineation of property boundaries and determine the location of ownership, dimension, area, shape of land and certain right which is associated with properties, the land owner should pay the tax property to state government after processed everything at end of the year. Unfortunately, the 2/3 size of the layout was acquired by land vendors, a plot of 100ft by 100ft which is equivalent to 30m by 30m acquired by vendors was sub-divided in to 6 parts, that is 25ft by 25ft which is equivalent to 8m by 8m, and also sold the plots to general public to build their houses that pit their purposes of living. The aim of the research is to determine the applicability of the fit-for purpose concept in updating cadastral record. The method of data collection of this research is mix approach; The result should be present the in form of cadastral model for each and every individual Land parcel to be stable, edit, retrieve, updating and also the hard copy of cadastral layout should contain the appropriate annotation were added to give it a cartographic outlook.

Keywords: Land administration, fit-for-purpose and cadastral layout

Introduction

1. Background to the Study

Land administration is process of determining, recording and disseminating information about ownership, value and use of land and its associate resources (Williamson, Enemark, Wallace & Rajabifard, 2010) [33]. The principle governance in land administration and effective land administration depend on capacity building and financial provision as well as socio economic condition, such as political will and commitment, the rule of law, regulatory quality and political stability (Amare 2020) [2]. The land administration system can then be upgraded and incrementally improved over time in response to social and legal needs and merging economic opportunities (Enemark, Bell, Lemmen & McLaren 2014) [12]. Gender equity should apply and should be seen first and foremost as a universal human right, independently of any other argument in favor for it (Cole 2022) [7]. This should allow for security of tenure within various kinds of communities and thereby enabling secure land rights for all Building (Simbizi, Bennett & Zevenbergen, 2014) [28].

Why land administration is important because it provides security for land owner and enhance the revenue forward to advancement of government economic (Subedi, 2016) [29]. it support the use of up to date and affordable technologist such as GIS for mapping capability and rectify the imagery nature, computer software was generated true scale aerial photograph and global navigation satellite position fixing GNSS**,** The promoter that negotiation, recordation and dispute resolution committee should be handled through transparent, flexible and simple administrative procedure and utilizing a human right method with all interested and affected parties participating (Pavlova & Uvarova, 2017) [24].

The framework for effective land administration release by the united nation committee of expert on global geospatial information management note that all people have the right to an adequate standard of living, regardless of whether underlying people-to-land relationship are formal, informal, statutory, customary, legal, legitimate, or otherwise in nature (Metaferia, Bennett, Alemie, & Koeva, 2022) [21]. Land tenure is an important part of social, political and economic structures. It is multi-dimensional, bringing into play social, technical, economic, institutional, legal and political aspects that are often ignored but must be taken into account (Pedersen, Spichiger, Alobo, Kidoido, Bashaasha & Munk Ravnborg, 2012) [25].

Land tenure relationships may be well-defined and enforceable in a formal court of law or through customary structures in a community alternatively, they may be relatively poorly defined with ambiguities open to exploitation (Tabingwa, 2017) [31]. Customary land tenure system land administration encouraging has been defined as the system of land holding indigenous to Nigeria, and encouraging relating to family and inheritance systems based on the concept of group ownership (Osita, 2014) [23]. Its absolute rights in land, with individuals acquiring rights and should register their land to establish the basis for access to land resources and the opportunity to use land for productive purposes (Sjaastad & Bromley, 2017) [27]. Land title registration is one way to achieve security of land rights is through land registration, with formal evidence of ownership such as a Certificate of Occupancy and formal documentation of land transactions in public land registries, are essential to the efficient functioning of the land markets (Abdulai, & Ochieng, 2017) [3].The fit-for-purpose land

administration concept considers the culture, social, economic and political context of the country and builds the component of land administration to benefit all people, regardless of their economic or social status (Chigbu, Bendzko, Mabakeng, Kuusaana, & Tutu, 2021) [8]. Furthermore, in recording land occupation and use, it recommends the use of visible feature rather than in visible boundaries based on demarcation **(**Fietta & Cleverly, 2016) [15]. Advantage of Fit-for-purpose is solutions provide opportunities for land administration systems to deliver benefits to a wide range of stakeholders much earlier than conventional Approaches some key benefits are Citizens/Communities (Enemark, McLaren & Lemmen, 2015) [13]. A pro-poor approach will lead to social inclusion, increased equity and better recognition of human rights, all citizens will obtain security of tenure and conflicts over land will be reduced, Security of tenure ability to engage in economic development, Improved local development through investments in housing, agriculture, environment and infrastructure and Participation in an evolving land market (Jayne, Chamberlin & Headey, 2014) [16].

administered according to Yoruba Custom (Davies, 2016) [10]. The first type of land instrument operated in Nigeria was known as Crown Grant and the fir.

Location of Study area and Extent

The study area is vibration tower old airport strip, behind Federal Secretariat Bauchi and also situated in Bauchi metropolis and established in June, 1988, approved by Hon. Commissioner of works, land and housing (Mr Yohana Adamu).and also the area was originally curved out of development plan number 21 Fadaman jaji behind Federal Secretariat Bauchi town, it was later in February, 2017 the State Government was designed and Allocate the plots. The Area lies between latitude 56°04"45" and 11° 56"02"north of equator and longitudes 52°32"34" and11°14"34" east of green witch meridian and cover a total area of 1.5 km2 as show below.

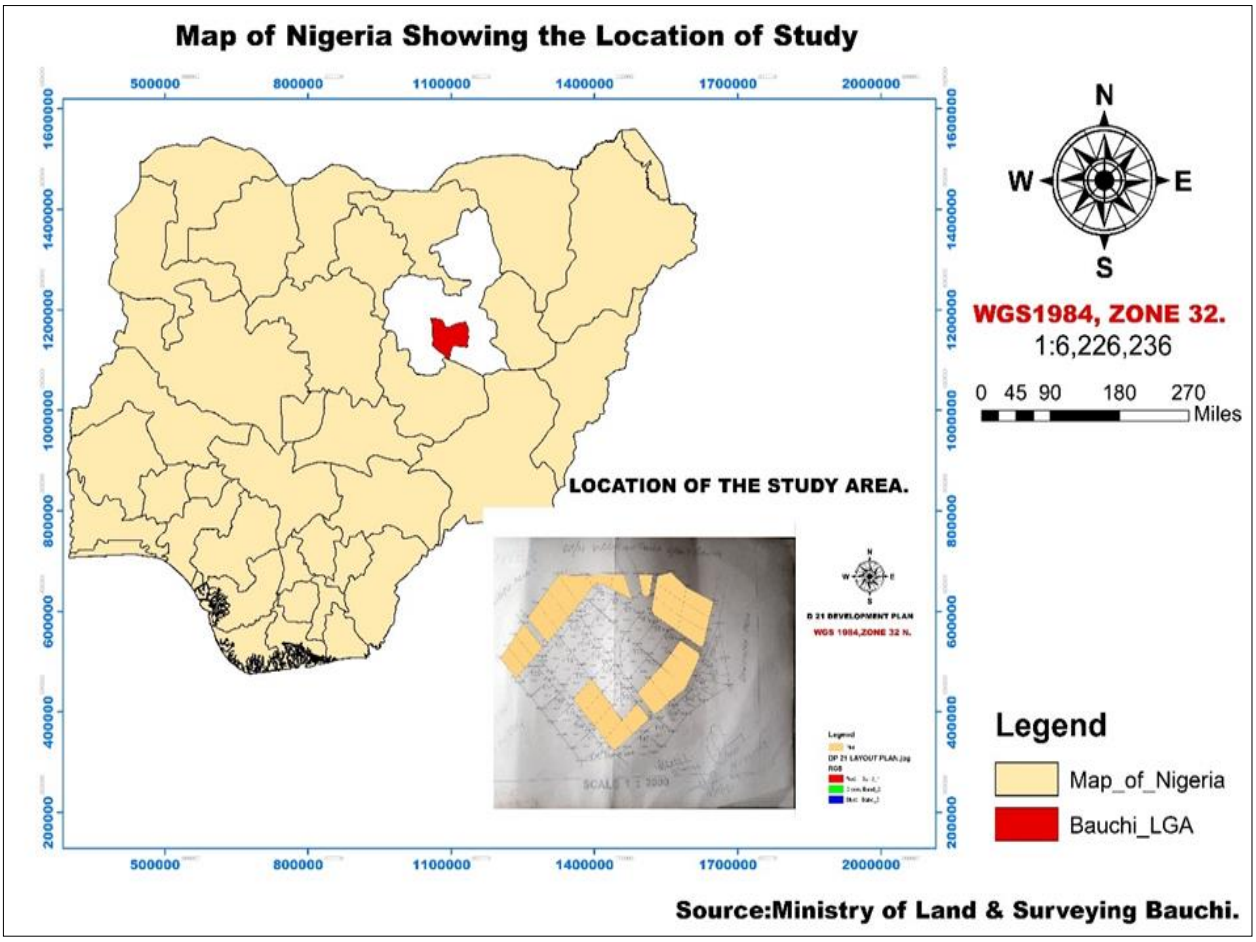


Fig 3: Typical Map of Study Area

1. Research Design

The research design is applicable when a conclusion is accurate or true and research design is the conceptual blueprint within which research is conducted or research design can be considered as the structure of research it is the "Glue" that holds all of the elements in a research project together, in short it is a plan of the proposed research work. The research design strikes a balance between redundancy and the tendency to over design. Where it is responsible, other, less costly, strategies for ruling out potential threats validity cure utilized.

The Research Design

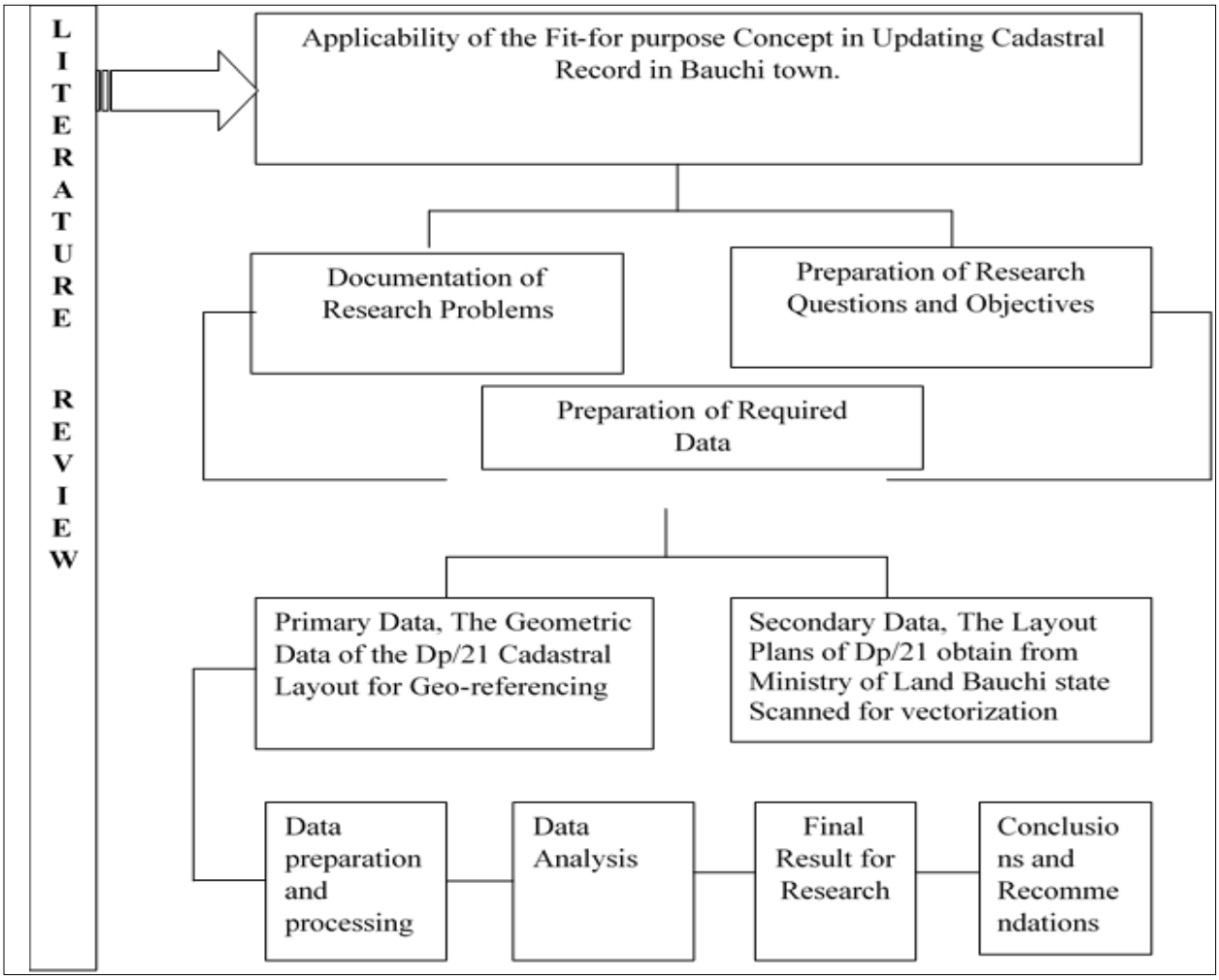


Fig 3.1: Typical flowcharts of Research Design

2. Methods of Data Collection

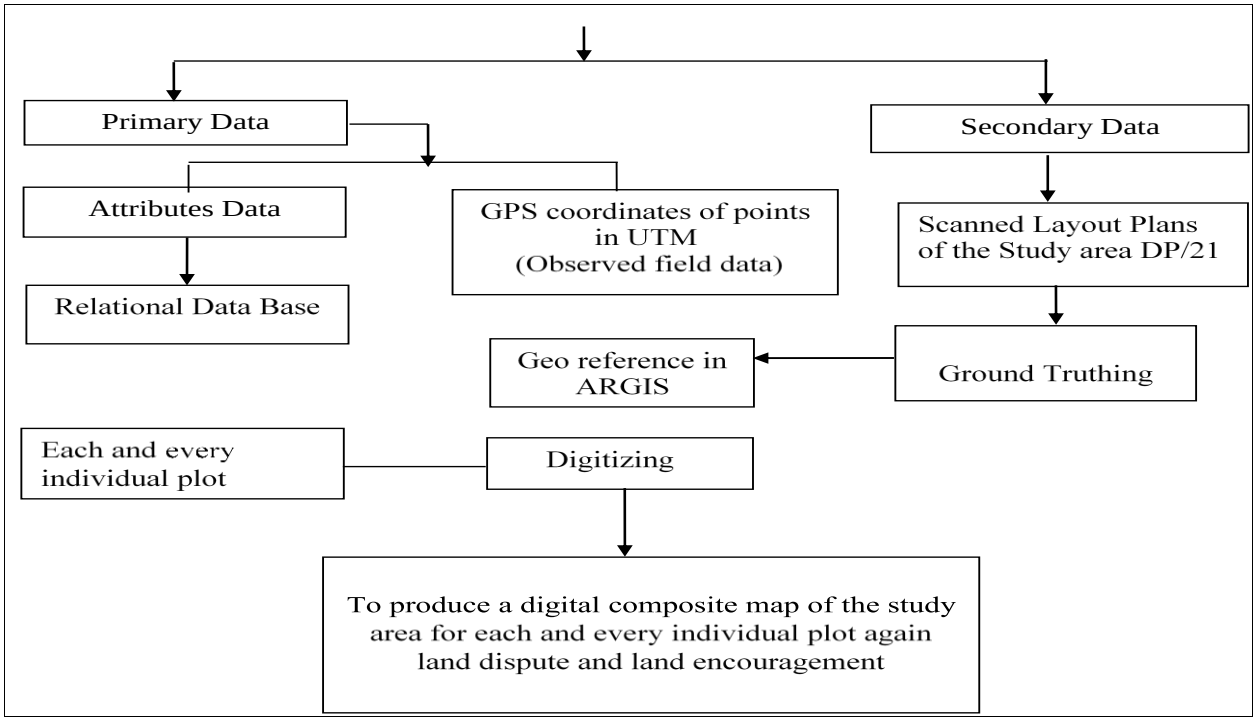
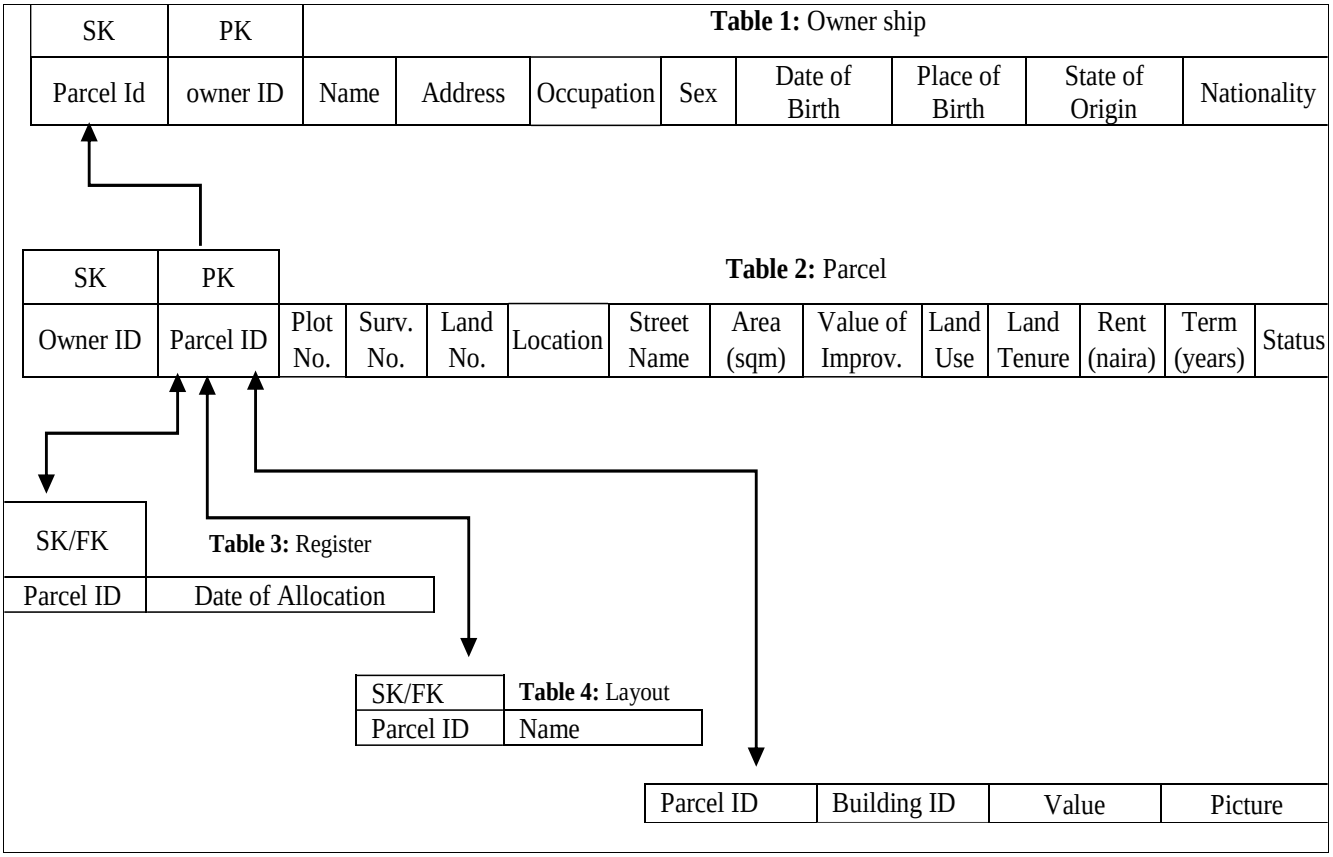


Fig 2: Flow Chart of Methodology

Entity Relation Table



Where PK=Primary Key, SK=Secondary Key and FK=Foreign Key

Table 1: Ownership

Owner_id	Surname	Other_Name	Sex	Occupation	Address

Table 2: Parcel

Parcel_id	Parcel_Size	C of O	Value	Address

Table 3: Transaction

Transaction_id	Previous_owner	Transaction_type	Legal Repre	Approve	Rank

Table 4: Beacon Number

Beacon_id	Beacon_Size	Easting	Northing	Height

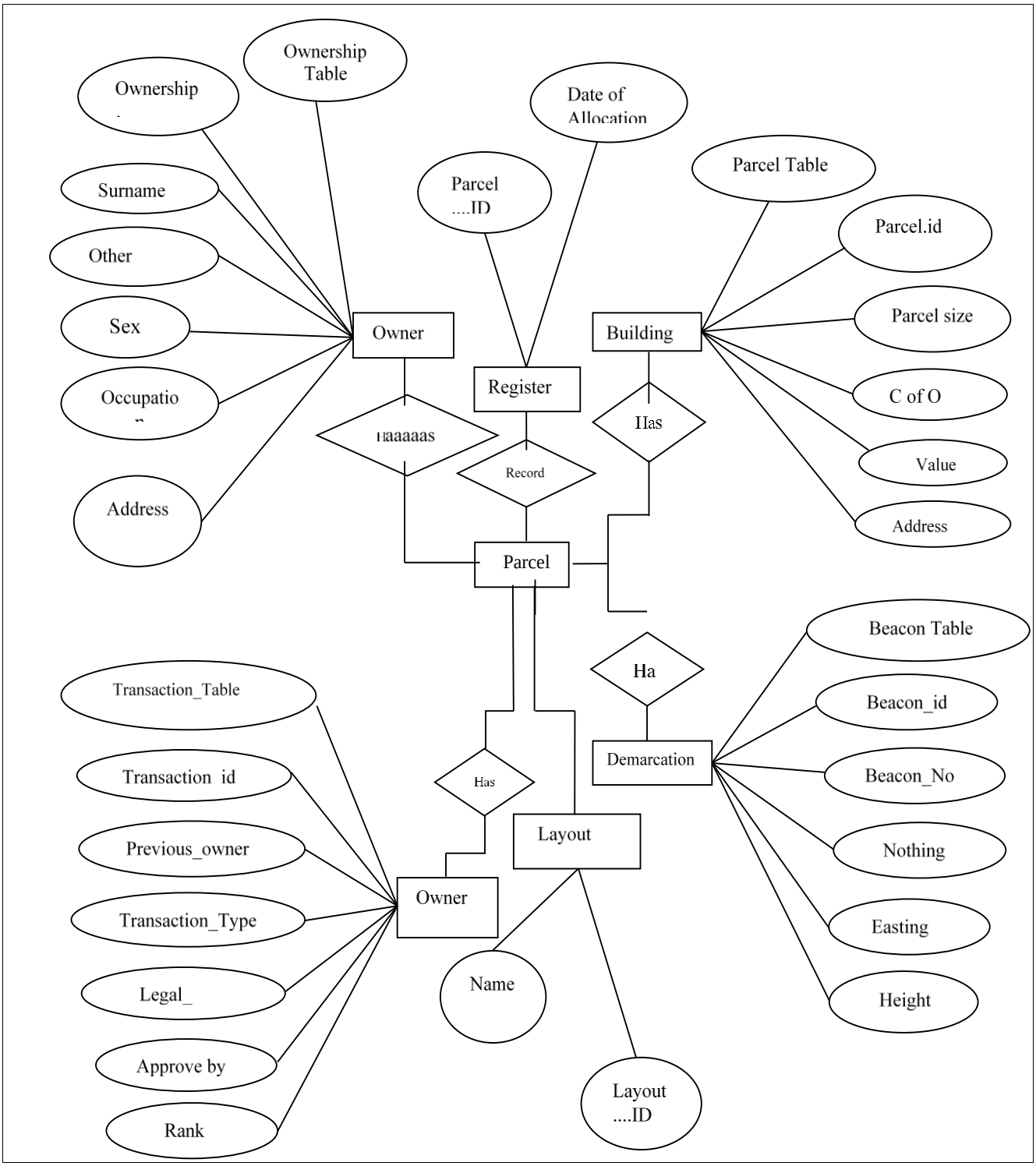
Table 5: Layout

Layout_id	Name

Table 6: Register

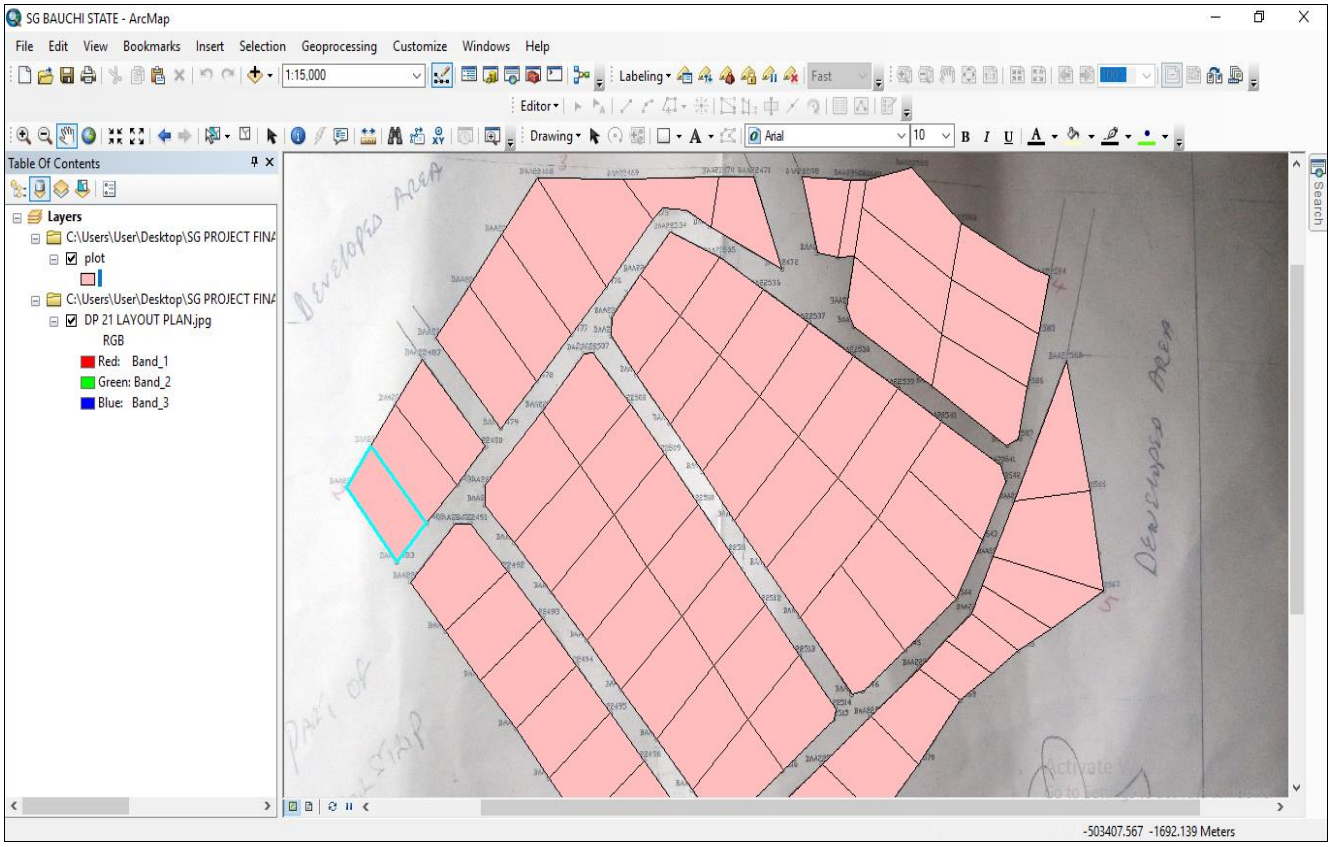
Parcel_ id	Date of Allocation

A Formal Representation of Logical design in a Simple Entity Relation Diagram

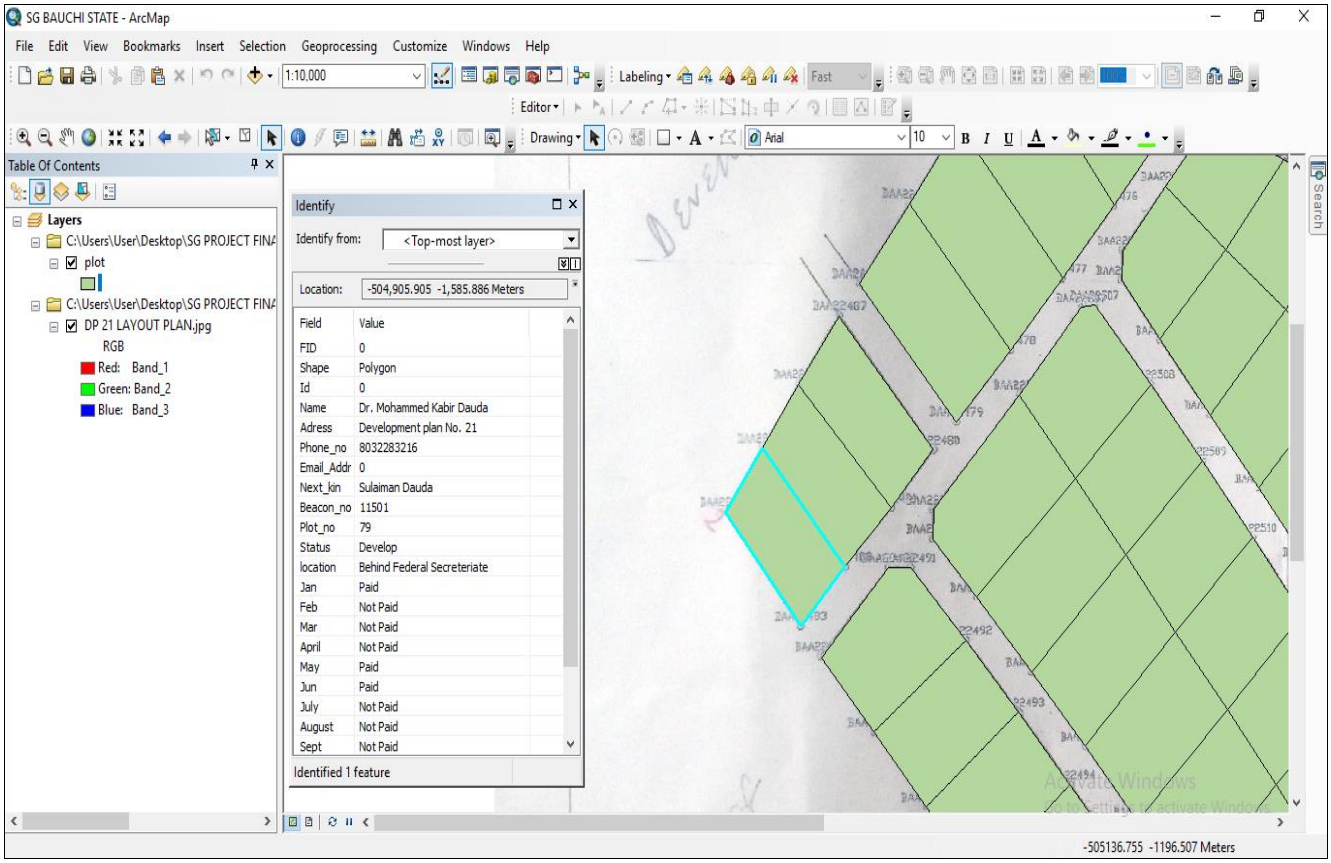


Results and Discussions

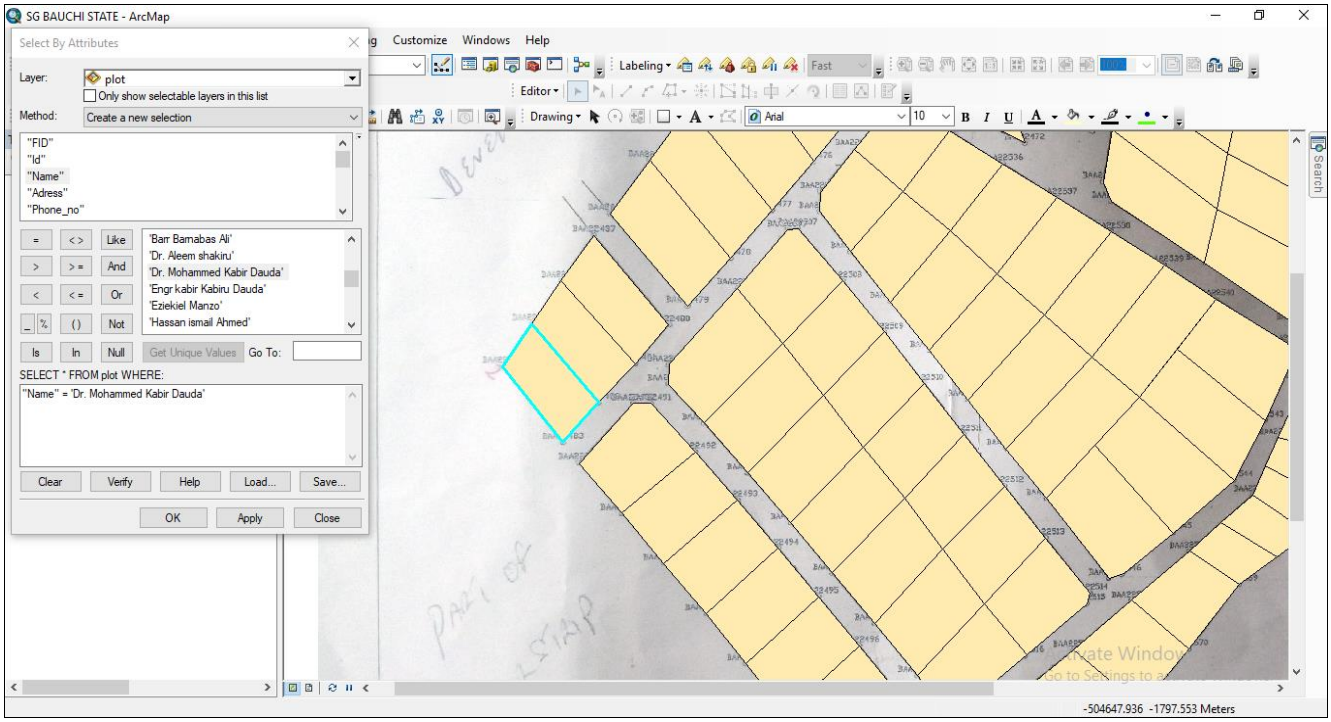
1. The objective one is to inspect the each and every individual Land parcel and collect the attribute information, it has been achieved by compiling the complete analogue file to digital file.



The objective two is to Design and create a relational database that would help to model the information of each and every individual Land parcel to be stable, edit, retrieve and updating and control land dispute and land encroachment.



4.3 Query to identified the plot of land within the layout using name



Summary, Conclusion and Recommendations

1. Summary

This study is a computer-based project whose end product is a comprehensive information about cadastral model. The importance of a digital composite map is less expensive, handy portable, and allows for unlimited sharing of information of the soft copy, the cadastral model be denounced the risk of being destroyed by termites, bad handling or hiding by greedy and selfish individuals. The study shows how computer technology has come to play a vital role in modifying the tedious and manual method of documentaries map. The techniques and the general procedures for digital cadastral model has been fully demonstrated in the study. The study proves that digital surveying equipment in conjunction with Geographic Information System (GIS) software can be a good and sufficient tool for managing map record because of their easy, simple and automatic operations as well as their ability to capture large amount of data in a short period of time. The study also revealed the suitability of GIS software in converting, from hard copy to digital format, the large number of maps and plans stocked in many survey ministries, agencies, organizations, etc. across the country, updates maps that will host the entire existing analogue records maps kept in office files inside cabinets.

2. Conclusion

The remote sensing technology have ability of captured high resolution satellite images of the surface of the earth showing various natural and artificial features area, infrastructures, cadastral layout, railways, major roads high tension wire, water canal, Mountain and other vegetation.

3. Recommendations

This research has no doubt uncovers the current conditions of most Land and Survey ministries, agencies, organizations, etc. in terms of their non-adoption and implementation of GIS techniques in collecting and managing spatial information. Therefore, it is recommended that the bodies concerned should adopt the current trend in order to rescue the large amount of valuable hard copy maps, plans and other related data that are slowly decaying and eating away by insects. The study stops only at update street guide maps without providing a means of accessing it from different offices. Also, it is always easier for a change to manifest if decisions and directives come from the top to the bottom rather than the other way around. Therefore, in order to have a quick transition from analogue to digital system in the ministries, agencies, organizations, etc. that deals with map related matters.

The following recommendations are proffered:

- Digital cadastral model system should be embraced as it assures dimensional stability of storage medium, eliminates loss of data or details by transfer from one medium to the other and maintains positional accuracy since the data are held in numerical form.
- GIS sections should be established so that to handle the responsibility of coordinating and managing map related information.
- Government should make it a condition or requirement for the appointment of the heads of these ministries, agencies, organizations, etc., a knowledge of GIS or any other relevant field.

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