land

MDPI

Article

Geospatial Data Approach for Demand-Oriented Policies of Land Administration

HaeOk Choi

Science and Technology Policy Institute, 508 Building B, Sejong National Research Complex 370, Sicheng-daero, Sejong 30147, Korea; hochoi@stepi.re.kr; Tel.: +82-44-287-2305

Received: 24 December 2019; Accepted: 14 January 2020; Published: 20 January 2020

Abstract: To develop the land administration sector, it is important to examine the difficulties faced and requests made by citizens. Accordingly, this study analyzes the Voice of Citizens data relating to land administration in an attempt to identify characteristics of civil complaints in the spatial sector that are unique to land administration. This research builds geospatial Database by combining civil complaint data and spatial information to the analysis of interest of the civil complaint area in order to identify the major keywords on the map. The analysis reveals that civil complaints relating to land administration pertain mostly to the operational methods and services of institutions in charge of the civil complaints, rather than to the ownership and results of land administration. These results indicate that response and operational methods must be determined prior to the administrative process relating to land ownership. This study further confirms that the civil complaints relating to ownership generally arose out of the mountainous and coastal regions, rather than cities. Going forward, this study could be used as reference material for determining policy priorities focusing, in particular, on the policy consumers' utilizing data on civil complaints in terms of government policy.

Keywords: VoC (Voice of Citizen) data; policy priority; demand-oriented policies; land administration; geospatial data

1. Introduction

There have been multiple studies on new methodologies covering logical structures for land administration [1–5]. There are studies on simulation modeling and systems that have utilized a diverse range of methods [6–11]. Studies relating to land administration have developed further with the onset of the Internet as well as Big Data technologies [12,13]. Policy studies utilizing data have included the analysis of policy preference through data analytics to help establish policy priorities [14–21]. From the data perspective, land administration carries significant spatial data on infrastructure that can help inform efforts in sustainable development [22,23]. The land administration domain model is being developed as a standard for data modeling to help install this infrastructure [24]. However, prior studies typically focused on the development of new technology, which inhibited the ability to present and understand problems experienced by actual users. Therefore, this study reviews the difficulties faced and requests submitted by the actual users of land administration through an analysis of the Voice of Citizens' data.

As participation in the Voice of Citizens increased with technological advancements, like the Internet, the Voice of Citizens began to influence society and politics [25–28]. The government began to take an interest in the opinions of citizens on the Internet [29]. The development of Internet technologies allowed people to overcome geographical distances; as a result, diversity was sought through the opinions of citizens [30–32]. The government applied the open data policy [33,34] as a policy feedback system that utilizes data [35–39]. Studies on the Voice of Citizens' data have concentrated on customer opinions to secure corporate competitiveness ([40], focusing on improving

services, advancing consumer satisfaction [41–46], and developing better managerial procedures to maintain such services [47–54]. In addition to studies asserting the need to provide customer-oriented service by data mining, the Voice of Citizens' data [55–57], there have also been studies on advancing satisfaction through the Voice of Citizens' data. However, studies on the voice of the consumer within firms have focused mainly on singular issues such as frequencies or processes [58,59], and social network analyses have been undertaken using the same data on the voice of the consumers [60]. However, these studies have failed to advance research of the changing trends of spatial patterns and time-series data with respect to how these civil complaints have occurred.

There is no common definition of the conflict in land-use [61]. The different approaches used in the former research that some research focused on spatial aspects [62]. However, others argue the term of land use conflict as a social dispute [63]. This research adapted ideas from land-use conflict that occurs in the interest of land-owners composed of complex shareholders [64,65]. This is important in our research sine we identify how we approach for demand-oriented policies of land administration in the future. The fundamental idea followed: This research means that provided policy implications that used as geospatial data in land management policy in Korea utilizing civil administration-related compliant data. The definition of demand-oriented policies understands the diffusion of innovation through demand [66], unlike policies have been made, measures winner takes all that speed up the development.

VoC(Voice of Customer) are growing with the democracy of the shareholder [67–71] that is defined as participating in the process of organizing, decision-making, and governance has been a new way to demand more representation for legitimacy of policies [72–74]. The support ideas of VoC in democracy is that stakeholder democracy is devalued due to the unrealistic idea implied by interests deciding on everything [72,73]. Taking into account VoC for demand-oriented policies, this research intends following research questions: Do VoC appreciate to be asked for their opinion on a government's strategy and activity for demand-oriented policies? More importantly, do their VoC data utilize on the enhancement of land administration with a geospatial approach?

The purpose of this research is to analyze the voice of citizens collected as raw data of text files to provide policy implications related to land management policy in Korea. In particular, it can be providing data-based administration for selected regions that are priory input into the government support system. For example, recently there are continuous land problems when the government conducts cadastral re-investigation. This research could be useful to determine the policy priorities. This research is also meaningful in that VoC data utilization for land administration policy pursued evidence-based policy implication in determining policy priorities. However, former research to evaluate the utilization of VoC data in land administration is still weak.

Given the characteristics of land administration, it is important to discern the spatial context. This study sought to analyze the region-specific policy demands and their causes through the analysis of the Voice of Citizens' data on land administration based on spatial information. To achieve this objective, this study confirmed the key content of the Voice of Citizens' data on land administration that could be matched with addresses using the semantic network analysis. Regional alternatives are presented by identifying the spatial location for key content groups.

2. Materials and Methods

This study utilized the Voice of Citizens' data on land administration in Korea. Fortunately, because the internet usage has increased dramatically in Korea, there has been a rapid uptick in the amount of available Voice of Citizens' data on land administration in the country. Text mining, geographic information systems (hereafter, GIS), and social network analysis methods were used to analyze the Voice of Citizens' data on land administration. First, text mining analysis was applied to extract annual keywords of the Voice of Citizens data. Next, the social network analysis tool was used to conduct a cluster analysis of keywords, identifying pertinent clusters of words [61].

The data collection and analysis methods used in this research is described in more detail as follows. In order to collect such data, the data was collected by the specialized land administration agency under the Ministry of land, infrastructure, and transport in Korea. The VoC of land administration data, unlike other data, is text-file based on a lot number. This research builds geospatial DB by combining civil complaint data and spatial information to analysis of interest of the civil complaint area in order to identify the major keywords on the map. The civil complaint data related to land administration has characteristics that are composed of classification, address, and location information. This research utilizes geospatial DB classifying the VoC data into categories by geocoding them by location.

Through the clusters of words, group characteristics were analyzed (Figure 1); then, the cluster relationships were analyzed using the two-mode network analysis. The words that were identified in the cluster analysis were mapped, identifying their spatial distribution, and through this, meanings were derived. Pushing beyond the limitation of prior studies that employed only a single tool in deriving their conclusions, this study offered novel results by deriving conclusions from diversified research methods. This study is characterized by the collection of spatial data based on the characteristics of the Voice of Citizens data and includes attributed data of the individuals submitting complaints (Table 1).

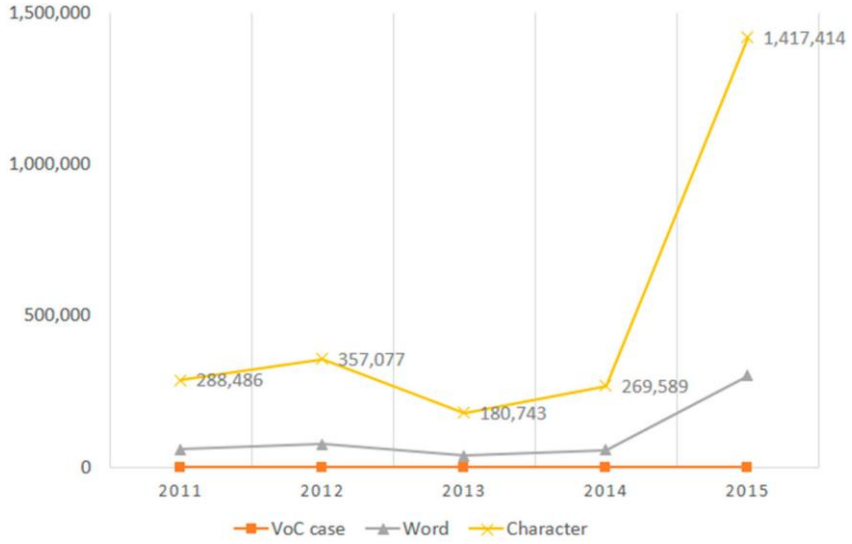

Figure 1. Data attribute graph.

Table 1. Data attributes (* Voice of Citizens).

Year	2011	2012	2013	2014	2015	Total
VoC * data	1344 cases	1700 cases	922 cases	1055 cases	1143 cases	6164 cases
Words	60,758	77,705	38,915	56,751	302,549	536,678
Characters	288,486	357,077	180,743	269,589	1,417,414	2,513,309

This study was conducted in the following order (Figure 2):

1. Voice of Citizens data relating to a cadastral survey was collected for land administration data;
2. Text mining, social network analysis, and GIS analysis methods were selected for structural and spatial analysis of the Voice of Citizens data;
3. Text mining was applied to five years of data (2011–2015). This process extracted keywords and placed them in a matrix. Then, cluster analysis was attempted using the Netminer program, a social network analysis tool;
4. The words grouped using cluster analysis were extracted again from the original text to reverse-track the location where the complaint was received. Then, using the geo-coding and mapping, the spatial significance was determined.

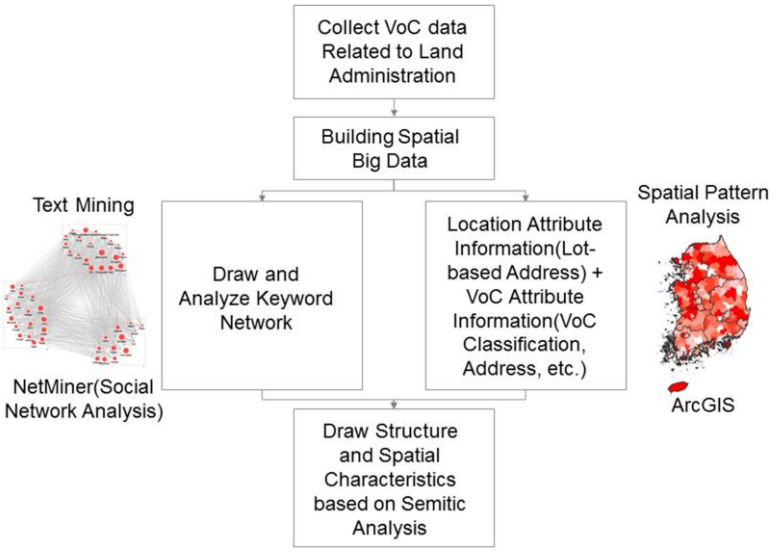

Figure 2. Research process.

3. Results

By text-mining the cadastral survey-related Voice of Citizens data between 2011–2015, some 50 keywords were selected [62]. They were subjected to the Modularity Centrality cluster analysis [63], resulting in three groups (G1, G2, and G3) (Figure 3).

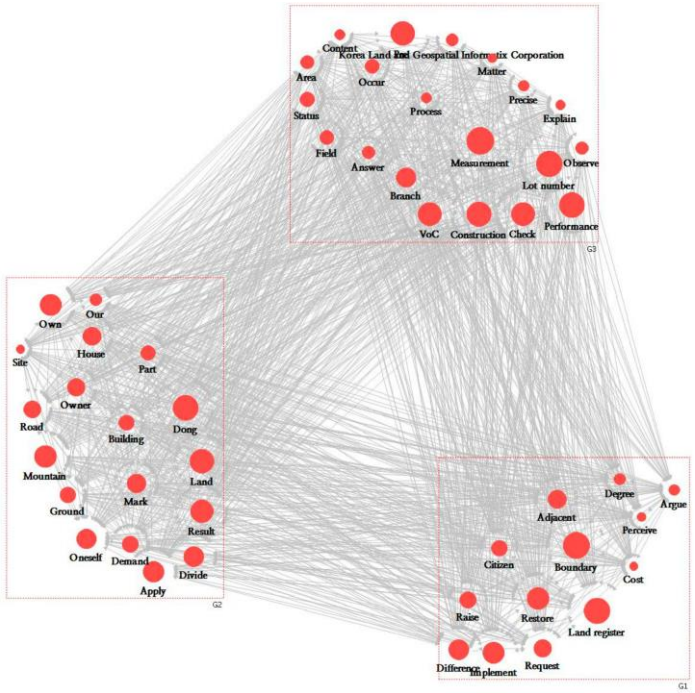

Figure 3. Results of keyword network by clustering.

G1 relates to items on the results of the cadastral survey that contained keywords pertaining to cost, boundaries, and restoration of the individuals submitting the complaints. G2 relates to ownership, including content on the application for division and marking of mountains, land, or roads. G3 relates to items on the land administration service whose content focused on processing as well as explanations of the exact area and measurements (Table 2).

Table 2. Results of keywords network **by groupping.**

G1 Matters about Cadastral Survey Results				G2 Matters about Ownership				G3 Matters about Land Administration Service			
Keyword	**In-Degree Centrality**	**Out-Degree Centrality**	**Eigenvector Centrality**	**Keyword**	**In-Degree Centrality**	**Out-Degree Centrality**	**Eigenvector Centrality**	**Keyword**	**In-Degree Centrality**	**Out-Degree Centrality**	**Eigenvector Centrality**
Boundary	1682.9	1682.9	0.406992	Land	663.14	663.14	0.159423	Measurement	3173.12	3173.12	0.558833
Cadastral	930.2	930.2	0.223781	Results	528.42	528.42	0.14114	Unit	1187.38	1187.38	0.29259
Recovery	528.12	528.12	0.153287	Divide	321.16	321.16	0.087235	Results	803.24	803.24	0.217149
Request	274.18	274.18	0.069924	Application	333.92	333.92	0.090038	Confirmation	555.06	555.06	0.143902
Execution	368.54	368.54	0.102119	Request	245.68	245.68	0.063309	Construction	699.76	699.76	0.166664
Difference	332.28	332.28	0.091818	Self	295.7	295.7	0.074025	Complaint	631.36	631.36	0.138158
Submission	230.76	230.76	0.057426	Indication	290.26	290.26	0.077739	Regional office	303.92	303.92	0.074009
Complain applicant	229.62	229.62	0.05102	Land	229.94	229.94	0.055183	Response	163.56	163.56	0.03611
Vicinity	279.36	279.36	0.07201	Mountain	514	514	0.127038	Site	185.42	185.42	0.04711
Assertion	132.78	132.78	0.03241	Building	221.6	221.6	0.055175	Status	207.94	207.94	0.05514
Level	138.78	138.78	0.03477	Roads	247.5	247.5	0.05971	Area	175.12	175.12	0.04073
Cognition	106.2	106.2	0.02628	Owner	249.46	249.46	0.0587	Content	125.9	125.9	0.02859
Cost	70.14	70.14	0.020049	Location	30.64	30.64	0.006579	Occurrence	179.02	179.02	0.04547
				House	276.38	276.38	0.06948	Plot	669.78	669.78	0.16217
				Own	478.66	478.66	0.11168	Process	127.28	127.28	0.026892
				Our	153.98	153.98	0.035844	Cadastral agency	160.42	160.42	0.03864
				Part	191.44	191.44	0.045184	Item	122.14	122.14	0.02719
				Complex	746.22	746.22	0.183904	Accurate	137.22	137.22	0.03571
								Explanation	124.4	124.4	0.02950
								Observation	172.64	172.64	0.04077

Keywords relating to G1 (content relating to the results of the cadastral survey) included "boundary," "cadastral," "restoration," "request," "execution," and "difference." Such content generally focused on the results of the cadastral survey, including confirmation requests on the results of the surveys and cost inquiries. Questions by the individual submitting the complaints were composed mostly of questions relating to simple counseling, with keywords like boundary, cadastral, and restoration. Examples of complaints, including these words are as follows:

Questions relating to the boundary restoration progress, measured in Pohang City on 24 August 2010.

Example 1

I am an employee of Hanwha **, managing the Pohang building of Daehan **, in unit 4*-*. The 2010 measurement indicated that our boundary wall intruded the neighboring land 4*-3, and we moved our wall; however, some parts of the wall (A) were confirmed as not intruding with the naked eye, and construction did not take place.

-Kim ** Pohang, Mountain * unit -

Keywords relating to G2 (relating to ownership) included: "land," "results," "division," "application," and "request." Such pertinent complaints related to the owner. This study confirmed that questions regarding, for instance, division requests of land or issues relating to buildings and roads were taking place.

Example 2

I am the owner of the fields located in Mountain ** unit, Seokgyo-ri, Sacheon-myeon, in Gangneung. My parents live in this mountain; however, the cadastral boundary measurements have been careless, and I have been subjected to damage.

-Choi **, Mountain * unit, Sacheon-myeon, Gangneung, Gangwon-do -

Keywords from G3 (on land administration services) include "measurement," "unit," "performance," and "confirmation." It was confirmed that complaints on measurement, as well as confirmation of the performance and area were taking place in the land administration, with individuals expecting resolutions through responses and explanations. The keywords indicated that the individuals submitting complaints wished for a more "accurate" land administration process.

Example 3

We have applied for the combination of two lots, Duri 80*-**, ***-** in March 28 and requested for the cadastral survey; however, we have to pay the measurement costs first, and then must wait for two weeks for the survey to take place.

-Park **, Land ****, Yesan-gun, Chungcheongnam-do -

The results of the two-mode network analysis, which simplifies the network, are as follows (Figure 4). In terms of the group-specific networks, G2 and G3 show a high network value of 14,117, followed by G3 and G1, at 137,509. The group network, observed through the 2-mode network analysis, indicates that the land administration service has a strong relationship with the other two groups. This suggests that problems with the land administration service are the common denominator of the complaints; therefore, revealing that the land administration service is the division within the land administration that requires a prioritized focus, over the other two groups, to resolve consumer hardships.

Figure 4. Two-mode Network.

Next, the study observed the group-specific spatial distribution resulting from text mining. This study mapped all the group-specific words occurring within the administrative district with the following results.

On G1 (cadastral survey), these arose near the suburban areas as well as the Gangwon-do region, experiencing active development relating to the Pyeongchang Winter Olympics. G2 (ownership) showed a similar context to G1; the complaints were focused on ownership in the mountainous and coastal regions. G3 (requests for improvement of the land administration services) was found to occur in the metropolitan urban regions.

These results indicate that G1 (need for measurement methods) was focused on the suburban and major development areas, and G2 (items relating to ownership) was focused on mountains and coastal regions. These findings indicate that the suburban regions require a policy response of servicing improved measurement methods, and ownership should be clarified in the mountains and coastal regions. Moreover, G3 (requests for service improvements) indicates that higher administrative services should be strengthened in the metropolitan and urban areas (Figure 5).

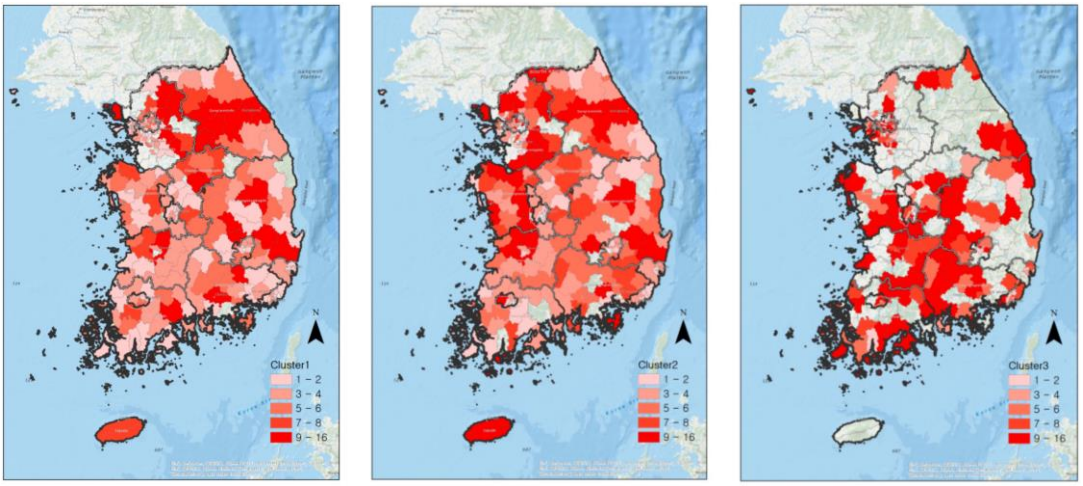

Figure 5. The group-specific spatial distribution resulting from text mining (G1, G2, G3).

4. Discussion

This study used the Voice of Citizens' data, previously considered dark data, to reduce uncertain policies by presenting the directions in which policies should be shifted in order to focus on the consumers. The Voice of Citizens' data were typically focused on land administration services. There have been complaints regarding the operational methods and services of institutions that receive complaints relating to land administration. This indicates that the response and operational methods of cadastral surveys should be improved on a prioritized basis through directed policies. This is also an indication that the improvement of service processes and methods of land administration should be prioritized for government policy.

The compliant data is considered as dark data in land management policy [63,64]. However, it is bright data with sufficient potential value and role of supporting the policymaking process, such as identifying policy priorities by data analysis. In particular, the civil compliant data utilized for consumer-oriented policies. The land administration-related data, unlike other data, is a text data based on the locational information.

In the Korean context, it can offer implications for land management policies, such as policymaking processes on the conflict of land disputes in Korea [75–80]. The Korean government conducts cadastral resurveys, which are defined as "the boundaries of land subsequent to a cadastral resurvey project under the special act" [81]. The purpose of the Act is to contribute to the efficient management of national land, safe marine transportation, and the protection of ownership of citizen." [81]. Following this special act, it is an important component of the legal support by objective data [82–86]. The government can apply VoC data as principles of deciding policy priority, especially when they select a region.

Overall, the civil complaints on the measurement methods were focused on sub-urban areas and major development areas; the complaints on ownership were focused on mountains and coastal regions, and complaints on services occurred mostly in metropolitan and urban areas. This information could be employed to provide regionally customized land administration services.

While carrying the significance of spatially analyzing the complaints data, these findings have also demonstrated the need for region-specific responses to land administration complaints.

5. Conclusions

This study analyzed the Voice of Citizens data relating to land administration, identifying and utilizing the potential spatial value of the Voice of Citizens data. Going forward, by using the Voice of Citizens data, the government would develop timely and spatially appropriate policy creations through spatial and temporal patterns, maximizing policy effectiveness. It is related to the geographical nature in Korea, followed by the continental law; the matter of land disputes is sensitive to property rights. This is a reason why civil complaint data should have been managed at the government level. In particular, the number of red spots on the map could be complaints continually occur because of the problem from the cadastral survey. The research could be utilized for land management policy, especially cadastral re-investigation, to help identify geospatial matters helping improve the fundamental difficulties of land management policy in Korea. While this study has the significance of confirming such effectiveness in a spatial manner, its limitation is in its inability to analyze the temporal changes. Accordingly, the researcher hopes that future studies would present methods that are more sensitive in responding to requests on land administration by analyzing the temporal and spatial patterns simultaneously.

Acknowledgments: This paper had rewrote based on the "A study on the utilization and analysis of LX Voice of Customer" in 2016.

Conflicts of Interest: The authors declare no conflict of interest.

References

1. Saysel, A.K.; Barlas, Y.; Yenigün, O. Environmental sustainability in an agricultural development project: A system dynamics approach. *J. Environ. Manag.* **2002**, *64*, 247–260. [CrossRef] [PubMed]
2. Jia, B.; Zhang, Z.; Ci, L.; Ren, Y.; Pan, B.; Zhang, Z. Oasis land-use dynamics and its influence on the oasis environment in Xinjiang, China. *J. Arid. Environ.* **2004**, *56*, 11–26. [CrossRef]
3. Kombe, W.J. Land use dynamics in peri-urban areas and their implications on the urban growth and form: The case of Dar es Salaam, Tanzania. *Habitat Int.* **2005**, *29*, 113–135. [CrossRef]
4. Gould, K.A.; Carter, D.R.; Shrestha, R.K. Extra-legal land market dynamics on a Guatemalan agricultural frontier: Implications for neoliberal land policies. *Land Use Policy* **2006**, *23*, 408–420. [CrossRef]
5. Haregeweyn, N.; Fikadu, G.; Tsunekawa, A.; Tsubo, M.; Meshesha, D.T. The dynamics of urban expansion and its impacts on land use/land cover change and small-scale farmers living near the urban fringe: A case study of Bahir Dar, Ethiopia. *Landsc. Urban Plan.* **2012**, *106*, 149–157. [CrossRef]
6. He, L.Y.; Liu, Q.; Chen, C.; Bian, A.H. Thermotolerance related to antioxidation induced by salicylic acid and heat acclimation in tall fescue seedlings. *J. Plant Physiol. Mol. Biol.* **2002**, *28*, 89–95.
7. Cheng, J.; Masser, I. Urban growth pattern modeling: A case study of Wuhan city, PR China. *Landsc. Urban Plan.* **2003**, *62*, 199–217. [CrossRef]
8. Maktav, D.; Erbek, F.S. Analysis of urban growth using multi-temporal satellite data in Istanbul, Turkey. *Int. J. Remote Sens.* **2005**, *26*, 797–810. [CrossRef]
9. Hu, Z.; Lo, C. Modeling urban growth in Atlanta using logistic regression. *Comput. Environ. Urban Syst.* **2007**, *31*, 667–688. [CrossRef]
10. Poelmans, L.; Van Rompaey, A. Detecting and modelling spatial patterns of urban sprawl in highly fragmented areas: A case study in the Flanders–Brussels region. *Landsc. Urban Plan.* **2009**, *93*, 10–19. [CrossRef]
11. Luo, J.; Wei, Y.D. Modeling spatial variations of urban growth patterns in Chinese cities: The case of Nanjing. *Landsc. Urban Plan.* **2009**, *91*, 51–64. [CrossRef]
12. Dashora, A.; Lohani, B.; Malik, J.N. A repository of earth resource information-CORONA satellite programme. *Curr. Sci.* **2007**, *92*, 926–932.
13. Dewan, A.M.; Yamaguchi, Y. Land use and land cover change in Greater Dhaka, Bangladesh: Using remote sensing to promote sustainable urbanization. *Appl. Geogr.* **2009**, *29*, 390–401. [CrossRef]
14. Gomez, B.T.; Wilson, J.M. Cognitive Heterogeneity and Economic Voting: A Comparative Analysis of Four Democratic Electorates. *Am. J. Political Sci.* **2006**, *50*, 127–145. [CrossRef]
15. Margalit, Y. Explaining Social Policy Preferences: Evidence from the Great Recession. *Am. Political Sci. Rev.* **2013**, *107*, 80–103. [CrossRef]
16. Sundberg, T.; Taylor-Gooby, P. A systematic review of comparative studies of attitudes to social policy. *Soc. Policy Adm.* **2013**, *47*, 416–433. [CrossRef]
17. Tausanovitch, C.; Warshaw, C. Measuring Constituent Policy Preferences in Congress, State Legislatures, and Cities. *J. Politics* **2013**, *75*, 330–342. [CrossRef]
18. Peters, Y.; Ensink, S.J. Differential responsiveness in Europe: The effects of preference difference and electoral participation. *West Eur. Politics* **2015**, *38*, 577–600. [CrossRef]
19. Stubager, R. Inequality in the 'Conflict of Conflicts'? The impact of citizen sophistication on agenda-setting effects. *Politics Stud.* **2015**, *63*, 793–813. [CrossRef]
20. Bullock, H.E. Social class and policy preferences: Implications for economic inequality and interclass relations. *Curr. Opin. Psychol.* **2017**, *18*, 141–146. [CrossRef]
21. Le, K. Land use restrictions, misallocation in agriculture, and aggregate productivity in Vietnam. *J. Dev. Econ*. **2020**, 145, 102465. [CrossRef]
22. Williamson, I. Land administration "best practice" providing the infrastructure for land policy implementation. *Land Use Policy* **2010**, *18*, 297–307. [CrossRef]
23. Williamson, I.; Enemark, S.; Wallace, J.; Rajabifard, A. Land Administration for Sustainable Development. In Proceedings of the FIG Congress 2010, Sydney, Australia, 11–16 April 2010.
24. Lemmen, C.; Van Oosterom, P.; Bennett, R. The Land Administration Domain Model. *Land Use Policy* **2015**, *49*, 535–545. [CrossRef]
25. Carter, L.; Bélanger, F. The utilization of e-government services: Citizen trust, innovation and acceptance factors. *Inf. Syst. J.* **2005**, *15*, 5–25. [CrossRef]

26. Dombrowski, L.; Hayes, G.R.; Mazmanian, M.; Voida, A. E-government intermediaries and the challenges of access and trust. *ACM Trans. Comput. Interact.* **2014**, *21*, 1–22. [CrossRef]
27. King, S.; Cotterill, S. Transformational Government? The role of information technology in delivering citizen-centric local public services. *Local Gov. Stud.* **2007**, *33*, 333–354. [CrossRef]
28. West, D.M. E-Government and the Transformation of Service Delivery and Citizen Attitudes. *Public Adm. Rev.* **2004**, *64*, 15–27. [CrossRef]
29. Seneviratne, S.J. Technology and organizational change in the public sector. In *Information Technology and Computer Applications in Public Administration: Issues and Trends*; Garson, G.D., Ed.; Idea Group Publishing: Hershey, PA, USA, 1999; pp. 41–61.
30. ArrayExpress—A Database of Functional Genomics Experiments. Available online: http://www.ebi.ac.uk/arrayexpress/ (accessed on 12 November 2012).
31. Snead, J.T.; Wright, E. E-government research in the United States. *Gov. Inf. Q.* **2014**, *31*, 129–136. [CrossRef]
32. Jun, C.N.; Chung, J.C. Big data analysis of local government 3.0: Focusing on Gyeongsangbuk-do in Korea. *Technol. Forecast. Soc. Chang.* **2014**, *110*, 3–12. [CrossRef]
33. Park, S. *Opening Big Data Analysis and Application Centers*; ZDNet: Seoul, Korea, 2013. Available online: http://www.zdnet.co.kr/news/news_view.asp?artice_id=20131024134751 (accessed on 4 December 2017).
34. Nam, T. *Government 3.0 in Korea Fad or Fashion*; Association for Computing Machinery: New York, NY, USA, 2013; pp. 46–55.
35. Le, K.; Nguyen, M. The impacts of farmland expropriation on Vietnam's rural households. Rev. Dev. Econ. **2020**, 24 (4), 1560-1582. [CrossRef]
36. Ubaldi, B. Open Government Data: Towards Empirical Analysis of Open Government Data Initiatives. *OECD Work. Pap. Public Gov.* **2013**. [CrossRef]
37. Veljković, N.; Bogdanovic-Dinic, S.; Stoimenov, L. Benchmarking open government: An open data perspective. *Gov. Inf. Q.* **2014**, *31*, 278–290. [CrossRef]
38. Zuiderwijk, A.; Janssen, M. Open data policies, their implementation and impact: A framework for comparison. *Gov. Inf. Q.* **2016**, *31*, 17–29. [CrossRef]
39. Sieber, R.E.; Johnson, P.A. Civic open data at a crossroads: Dominant models and current challenges. *Gov. Inf. Q.* **2016**, *32*, 308–315. [CrossRef]
40. Vos, J.; Huitema, G.; De Lange-Ros, E. How organisations can learn from complaints. *TQM J.* **2008**, *20*, 8–17. [CrossRef]
41. Zairi, M. Managing customer dissatisfaction through effective complaints management systems. *TQM Mag.* **2000**, *12*, 331–337. [CrossRef]
42. Stauss, B. The dimensions of complaint satisfaction: Process and outcome complaint satisfaction versus cold fact and warm act complaint satisfaction. *Manag. Serv. Qual. Int. J.* **2002**, *12*, 173–183. [CrossRef]
43. Orsingher, C.; Valentini, S.; de Angelis, M. A meta-analysis of satisfaction with complaint handling in services. *J. Acad. Mark. Sci.* **2010**, *38*, 169–186. [CrossRef]
44. Ferguson, J.L.; Johnston, W.J. Customer response to dissatisfaction: A synthesis of literature and conceptual framework. *Ind. Mark. Manag.* **2011**, *40*, 118–127. [CrossRef]
45. McQuilken, L.; Robertson, N. The influence of guarantees, active requests to voice and failure severity on customer complaint behavior. *Int. J. Hosp. Manag.* **2011**, *30*, 953–962. [CrossRef]
46. Hsieh, S.Y. Using complaints to enhance quality improvement: Developing an analytical tool. *Int. J. Heal. Care Qual. Assur.* **2012**, *25*, 453–461. [CrossRef]
47. Bosch, V.G.; Enríquez, F.T. TQM and QFD: Exploiting a customer complaint management system. *Int. J. Qual. Reliab. Manag.* **2005**, *22*, 30–37. [CrossRef]
48. Galitsky, B.A.; González, M.P.; Chesñevar, C.I. A novel approach for classifying customer complaints through graphs similarities in argumentative dialogues. *Decis. Support Syst.* **2009**, *46*, 717–729. [CrossRef]
49. Debii, C. Handling e-complaints in customer complaint management system using FMEA as a qualitative system. In Proceedings of the 2010 6th International Conference on Advanced Information Management and Service (IMS), Seoul, Korea, 30 November–2 December 2010; pp. 205–209.
50. Pyon, C.U.; Woo, J.Y.; Park, S.C. Service improvement by business process management using customer complaints in financial service industry. *Expert Syst. Appl.* **2011**, *38*, 3267–3279. [CrossRef]
51. Shi, W.-H.; Liu, J.-Y.; Zhang, Y. The effect of service failure attribution on consumer complaint behavior: The mediating role of negative emotion. *J. China Univ. Posts Telecommun.* **2011**, *18*, 169–173. [CrossRef]

52. Stone, M. Literature review on complaints management. *J. Database Mark. Cust. Strat. Manag.* **2011**, *18*, 108–122. [CrossRef]
53. Aguwa, C.C.; Monplaisir, L.; Turgut, O. Voice of the customer: Customer satisfaction ratio based analysis. *Expert Syst. Appl.* **2012**, *39*, 10112–10119. [CrossRef]
54. Atlikhan, A.; Albadvi, A.; Ghapanchi, A.H. A conceptual model for proactive-interactive customer complaint management systems. *Int. J. Bus. Inf. Syst.* **2013**, *13*, 490. [CrossRef]
55. Sharma, S.; Goyal, D.; Mittal, R. Data mining research for customer relationship management systems: A framework and analysis. *Int. J. Bus. Inf. Syst.* **2008**, *3*, 549–565. [CrossRef]
56. Chen, C.-K.; Shie, A.-J.; Yu, C.-H. A customer-oriented organisational diagnostic model based on data mining of customer-complaint databases. *Expert Syst. Appl.* **2012**, *39*, 786–792. [CrossRef]
57. Chen, J.; Gong, P.; He, C.; Luo, W.; Tamura, M.; Shi, P. Assessment of the urban development plan of Beijing by using a CA-based urban growth model. *Photogramm. Eng. Remote Sens.* **2002**, *68*, 1063–1071.
58. Brennan, C.; Douglas, A. Complaints procedures in local government: Informing your customers. *Int. J. Public Sector Manag.* **2002**, *15*, 219–236. [CrossRef]
59. Coussement, K.; Poel, D.V.D. Improving customer complaint management by automatic email classification using linguistic style features as predictors. *Decis. Support Syst.* **2008**, *44*, 870–882. [CrossRef]
60. Sitko-Lutek, A.; Chuancharoen, S.; Sukpitikul, A.; Phusavat, K. Applying social network analysis on customer complaint handling. *Ind. Manag. Data Syst.* **2010**, *110*, 1402–1419. [CrossRef]
61. Steinhäußer, R.; Siebert, R.; Steinführer, A.; Hellmich, M. National and regional land-use conflicts in Germany from the perspective of stakeholders. *Land Use Policy* **2015**, *49*, 183–194. [CrossRef]
62. Roehl, W.S.; Fesenmaier, D.R. Tourism land use conflict in the United States. *Ann. Tour. Res.* **1987**, *14*, 471–485. [CrossRef]
63. Mann, C.; Jeanneaux, P. Two approaches for understanding land-use conflict to improve rural planning and management. *J. Rural. Commun. Dev.* **2009**, *4*, 118–141.
64. Von Der Dunk, A.; Grêt-Regamey, A.; Dalang, T.; Hersperger, A.M. Defining a typology of peri-urban land-use conflicts—A case study from Switzerland. *Landsc. Urban Plan.* **2011**, *101*, 149–156. [CrossRef]
65. Milczarek-Andrzejewska, D.; Zawalińska, K.; Czarnecki, A. Land-use conflicts and the Common Agricultural Policy: Evidence from Poland. *Land Use Policy* **2018**, *73*, 423–433. [CrossRef]
66. Jakob, E. *Demand-Oriented Innovation Policy*; Office of Technology Assessmentat the German Bundestag: Berlin, Germany, 2009; Available online: https://www.tab-beim-bundestag.de/en/pdf/publications/summarys/TAB-Arbeitsbericht-ab099_Z.pdf (accessed on 1 December 2019).
67. Dawkins, C.E. The principle of good faith: Toward substantive stakeholder engagement. *J. Bus. Ethics* **2014**, *121*, 283–295. [CrossRef]
68. Matten, D.; Crane, A. What is stakeholder democracy? Perspectives and issues. *Bus. Ethics Eur. Rev.* **2005**, *14*, 6–13. [CrossRef]
69. Moriarty, J. The connection between stakeholder theory and stakeholder democracy: An excavation and defense. *Bus. Soc.* **2014**, *53*, 820–852. [CrossRef]
70. O'Dwyer, B. Stakeholder democracy: Challenges and contributions from social accounting. *Bus. Ethics Eur. Rev.* **2005**, *14*, 28–41. [CrossRef]
71. Turnbull, S. Stakeholder democracy: Redesigning the governance of firms and bureaucracies. *J. Socio-Econ.* **1994**, *23*, 321–360. [CrossRef]
72. Harrison, J.S.; Freeman, R.E. Special topic: Democracy in and around organizations is organizational democracy worth the effort? *Acad. Manag. Exec.* **2004**, *18*, 49–53. [CrossRef]
73. Kerr, J.L. The limits of organizational democracy. *Acad. Manag. Exec.* **2004**, *18*, 81–95. [CrossRef]
74. Powley, E.H.; Fry, R.E.; Barrett, F.J.; Bright, D.S. Dialogic de-mocracy meets command and control: Transformation through the appreciative inquiry summit. *Acad. Manag. Exec.* **2004**, *18*, 67–80. [CrossRef]
75. Kim, J.M.; Choi, Y.S.; Yoon, H.S.; Kim, Y.D. A Study on the Improvement of Efficient Execution System for Cadastral Resurvey Project. *Korea Spat. Inf. Soc.* **2013**, *21*, 47–62. [CrossRef]
76. Park, C.W. Symposium: The cadastral map re-examination and civil affair dispute about the Land boundary. *Legal Res.* **2010**, *18*, 21–62.
77. Kim, N.S.; Lee, S.C.; Kim, H.T. Research on Development of Model for Korean-Style ADR System of Cadastre Field. *J. Korean Assoc. Cadastre Inf.* **2005**, *7*, 31–51.

78. Kim, J.B. *A Study on Cadastral Reform Project Issues and Solutions: Focus on Land Boundary Disputes and Settlement Procedures*; The Graduate School of Industry, Kyungil University: Gamasil-gil, Korea, 2006.
79. Kim, S.C. Current State and Challenges of Japan's Accreditation System under the ADR Act. *J. Korea Assoc. Arbitr. Stud.* **2012**, *22*, 3–29.
80. Kwon, I.H.; Choi, Y.S.; Jung, S.K.; Kim, J.M. A Study on the Solution of Cadastral Resurvey Project's Conflict based on Conflict Model. In *Proceedings of the Korean Association of Geographic Inforamtion Studies Conference*; Korea Spatial Information Society: Seoul, Korea, 2010; pp. 25–37.
81. Act on the Establishment, Management, etc of Spatial Data. Available online: https://elaw.klri.re.kr/kor_mobile/viewer.do?hseq=45348&type=part&key=35 (accessed on 2 January 2020).
82. Kwon, Y.H. *Perspective of Cadastral Resurvey Project Based on Conflict Model*; The Graduate School of Urban Sciences, University of Seoul: Seoul, Korea, 2010.
83. Kwon, Y.H. *(A) Study of Priority Areas for Cadastral Resurvey*; The Graduate School Information Science and Public Administration, Kangwon National University: Gangwon-do, Korea, 2011.
84. Minister of Land, Infrastructure and Transport. *A Study on the Improvement of Rational and Scientific Execution System for Cadastral Resurvey Project*, Minister of Land, Infrastructure and Transport: Sejong-si, Korea, 2012.
85. Song, H.J.; Kwon, D.J.; Kim, H.J. A Study on Landowners' Understanding of Written Consent in the Housing Redevelopment Project District. *J. Korean Soc. Cadastre Inf.* **2011**, *27*, 15–32.
86. Yoon, H.S.; Choi, Y.S.; Son, S.Y.; Kim, J.M. A Study on Present Conditions and Characteristics of Cadastral Surveying Accuracy in Korea. *J. Korea Spat. Inf. Soc.* **2011**, *19*, 27–35.