Do institutions matter in neighbourhood commons governance?  
A two-stage relationship between diverse property-rights structure and residential public open space (POS) quality: Kota Kinabalu and Penampang, Sabah, Malaysia

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Abstract: Despite the existing literature regarding institutional influence on traditional commons, there is still a comparative dearth of research that theorises property-rights structure and its impact on contemporary commons. This is particularly true for public open space (POS) governance: its management and utilisation and hence its quality, of which underinvestment and overexploitation leads to increasingly negative externalities and outcomes. An interdisciplinary study is employed here to depict the relationships of diverse property-rights structure attributes – POS title existence, community existence, POS title
transfer and POS site handing-over period to local government – with quality of residential POS. A cross-sectional survey via direct structured observation with a POS quality audit tool was conducted to collect a randomly stratified sample of 155 Country Lease (CL) POS and entire 22 Native Title (NT) POS, from the districts of Kota Kinabalu and Penampang, Sabah, respectively. Archival search and document analysis on data of property-rights attributes were executed as well. Next, 2-stage Pearson’s Chi-Square ($\chi^2$) and Lambda ($\lambda$) with Proportional Reduction Error feature analyses were performed. Results showed that only these three property-rights attributes – title deed existence, community existence and POS site handing-over period to local government- are significantly associated with POS quality at significance level ($p \leq 0.05$). It is found that, although POS with title deed and community’s involvement might not contribute to good quality, these attributes were likely to provide better quality. On the other hand, it is found that the more recent the POS site handing over to government, the higher the likelihood of good POS quality and vice versa. Such empirical findings prima facie infer that: (i) current local property-rights structure does matter in contributing to POS condition, particularly the effective management right which likely leads to better POS quality; (ii) the present state-property regime in POS governance is adversarial; and (iii) the importance of an interim privatisation and communal regimes leads to a better POS. Thus, these may provide policy insights by encouraging public officials to consider reengineering the POS market via an adaptive property-rights re-alignment paradigm in the interest of addressing POS quality and sustainability issues, which warrant further research.

Keywords: Governance, institutions, neighbourhood residential commons, property-rights structure, public open space (POS), quality, two-stage associations

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1. Introduction

There have been many studies relating to preservation of public open space (POS) that were undertaken, such as the effect of perception and socioeconomic standing of stakeholders towards POS protection, spatial POS design planning model, and ‘conventional’ planning policies. However, the perennial issues of POS governance, especially with regards to rampant overexploitation and mismanagement, are still growing that consequently result in POS externalities and market failures (Colding et al. 2013; Ling et al. 2014a). How can this status quo be explained? The current void was the impetus that led to a multi-disciplinary approach to serve as a lynchpin to address this issue.
In this paper, the study areas focus on the districts of Kota Kinabalu and Penampang in Sabah, Malaysia (Figure 1) that emphasised neighbourhood (solely on landed-property and exclusive of the gated communities) residential POS, are also cogently associated with the aforementioned human-ecological conundrum (Ahmad et al. 2013; Ling et al. 2014a). Hence, we primarily employed the ground-breaking ‘Coase-inspired’ property-rights and transaction costs analytic framework1, (Slaev 2014). This is supplemented with the theories of common pool resources (CPRs), social (commons) dilemmas, contracts, opportunism, etc. (see Cole and Ostrom 2012 call for advanced and realistic property theories) as a heuristic paradigm to shed new insights, especially in the local residential commons POS context (Rabinowitz 2012), with the focus on analysing the effects of institutions on the social-ecological interaction as well as its outcome (quality). Such institutional dimensions that generally influence social-environmental interaction, in comparison with traditional commons (e.g. natural resources like irrigation, ocean, forestry and fisheries) is, however, mostly under-researched

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1 Diversifying the ‘mainstream’ environmental planning: “planning with property-rights” (Webster 2007; see also, Boydell et al. 2007) call for the mix of property-rights, economic and planning theories. Also, this is vital by transcending such premise application in addressing the public policy issues (see Musole 2009).
or paid little attention to. This is notably so in the contemporary residential neighbourhood POS management or governance\(^2\) (see, Hess 2012; Mincey et al. 2013; Andersson et al. 2014; Boydell and Searle 2014). Note that we do not claim there are no prior studies at all or extreme deficiency of researches of institutional factor conducted in such new commons (see Dolšak and Ostrom 2003a). However, reviewing the number of new and conventional commons studies in the institutional purview, we can assert is that, the former still postulates more attention and studies. This is affirmed by Colding et al. (2013) as well that according to Digital Library of the Commons in 2011, only 1.4% of studies deal with the topic of institutional property system in such contemporary settings.

Hence, the above justification imperatively drives us to employ non-experimental methods\(^3\) to describe the two-stage association between Sabah’s ‘diverse’ institutional arrangements: (1) Institution-based property-rights structure\(^4\) (see Table 1), and (2) POS quality. The aims are to address the following key research questions: (i) whether the current diverse institutional property-rights structure relates to the quality\(^5\) of residential POS (is there any significant correlation)?, and (ii) If there is a correlation, what is the pattern/direction of correlation?, and (iii) to what extent or how influential are institution impacts on the POS quality (what is the strength of correlation)? Such study is significant as it not only contributes to the pool of knowledge, but practical implication is also provided, including insights gained whereby policy-makers may understand better, from an institutional position, the status quo of state-owned POS governance. Thus, policy-makers can start seeking to address the POS management issues by adaptively re-aligning property-rights structure (see more in conclusion and recommendations section below).

The main purpose of Figure 1 above is to display the general Sabah state’s background features, the two districts’ spatial features e.g. size, geographical location, neighbouring natures, area as well as their respective demographic, socioeconomics, and administration of local government (jurisdiction of

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\(^2\) There have been many property-rights studies carried out; in fact, its literature is well-established, particularly in traditional commons. Still, more studies that focus on new commons study, especially in developing countries, are required. This indicates that there is a gap or paucity in institutions in third world nations (see, Meinzen-Dick 2014), particularly in this study that was carried out in Malaysia.

\(^3\) Due to methodological limitations in demarcating, assessing and mapping the quality of POS (Hillsdon et al. 2006); however, many works were experimentally compared to field-based empirical approaches; e.g. survey/observational study design. Both methods may result differently, but the latter is more preferable as the former may not be suitable as it may lack some sense of ‘reality’ or ‘realness’ in analysing the effects of social behaviour of stakeholders in CPR utilisation and management (see Liechti and Binder 2014).

\(^4\) There is a need for conceptualisation of analysis of property-rights mosaic, especially the existence of rights diversity allocation, obligations and restrictions in one commons (Boydell and Searle 2014).

\(^5\) Provision on the quality of POS is given little attention to as compared to the quantity (Van Dillen et al. 2012).
**Table 1: A de facto and formal overview of practice-based diverse property-rights and regimes positions in Sabah’s non-stratified residential public domain\(^1\): Country Lease (CL) and Native Title (NT) POS governance.**

<table>
<thead>
<tr>
<th>Property-rights structure</th>
<th>(Issuance title deed on CL POS)</th>
<th>(Involving POS site handing over and POS title deed transfer)</th>
<th>(No title deed issuance on NT POS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st phase CL POS (Prior to title deed issuance)</td>
<td>2nd phase CL POS (Prior to title deed issuance: interim)</td>
<td>3rd phase CL POS (Title deed issued)</td>
<td>Surrendered POS (Without title)</td>
</tr>
<tr>
<td>(Un-transferred title)</td>
<td>(Un-transferred title)</td>
<td>(Transferred title)</td>
<td>(Without title - State land)</td>
</tr>
<tr>
<td>(Un-handed over site)</td>
<td>(Handed over site)</td>
<td>(Handed over site)</td>
<td>(Needless site handing over/ title transfer)</td>
</tr>
<tr>
<td>(held under owner’s covenant)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Land ownership</td>
<td>Private/Common property-developer/owners</td>
<td>State property - Local government</td>
<td>State property - State land</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(As an equitable owner)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Management regime (including monitoring, maintaining, control etc.)</td>
<td>Private/Common property – (Developer/Co-landowner(s))</td>
<td>State property - Local government</td>
<td>Open-access resource (without being vested in Local Council)(^2)</td>
</tr>
<tr>
<td></td>
<td>(Temporary – e.g. minimum 18 months)</td>
<td>or</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Local government + Common property/community association- residents (registered)*</td>
<td></td>
</tr>
<tr>
<td>Positions of manager:</td>
<td>Claimant</td>
<td></td>
<td>Authorised users</td>
</tr>
<tr>
<td>Bundle of rights:</td>
<td>Only access, use and management rights are clearly and actively possessed by the subdivider(s) as well as local government</td>
<td></td>
<td>public users with use and access rights</td>
</tr>
<tr>
<td>Access</td>
<td>x</td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>Withdrawal/using</td>
<td>x</td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>Management</td>
<td>x</td>
<td></td>
<td>None</td>
</tr>
<tr>
<td>Exclusion</td>
<td>None</td>
<td></td>
<td>None</td>
</tr>
<tr>
<td>Alienation (e.g. POS disposal, title deed transfer)</td>
<td>Title deed is only transferable to local council by the private titleholder(s)</td>
<td>Not transferable</td>
<td>Alienation (transfer or disposal) may not be necessarily possible</td>
</tr>
<tr>
<td>For public access and consumption</td>
<td>Yes</td>
<td></td>
<td>Yes</td>
</tr>
</tbody>
</table>

\(^1\) For everyone and anyone even though they are not the citizen of the local districts or the State.

\(^2\) The subdivider becomes a bare trustee who is divested of his equitable rights/interest on the POS, except a non-active duty i.e. executing POS title transfer registration to council (see FAQ Sabahland 2014 on the definition of bare trustee concept and Modified Torrens System).

\(^3\) From de jure point of view, the POS should be vested in local government under the state property.

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\(^*\) Only certain districts and neighborhoods adopt such regime on some POS.

(Source: Adapted from Schlager and Ostrom 1992; Colding et al. 2013; Ling et al. 2014b).
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governance). These are crucial to be for the later part of the analysis and discussion section (see, triangulation idea).

Sabah, as the easternmost state (73,631 km² land area, located in a coordinate of 5°15′ N 117°0′ E) with an approximate population of 3.2 million people, is also known as a multi-attribute state. Languages spoken in Sabah include Malay, ethnic’s own dialects, English, and Mandarin, and religions include Islam, Christianity, and Buddhism; In addition, Sabah is ethnically and culturally diverse, with more than 60% “bumiputera” or natives (e.g. Kadazan, Bajau, Dusun, etc.), and the rest Chinese and Non Malaysian, especially Filipinos becoming a squatters issue. Predominately, it can be noted that natives or *bumiputra* are the majority of race in Sabah and hence, it is vital in later Native land emergence and institutions pertaining to it. Also, historically, since it was colonised by the British (aftermath of such colonisation), the current Sabah's administrative political governance features and urban planning system (i.e. development control, economics, land administration, institutions, and laws) are shaped by it.

From an institutional perspective, land matters within the state’s jurisdiction and outside Federal Constitution, is governed by the state constitution, Sabah Land Ordinance Cap 68. In addition to this ordinance, there are other significantly relevant ordinances pertaining to land and planning matters, including the concept of Modified Torrens System, Land Acquisition Ordinance Cap 69 1950, Local Government Ordinance 1961, Town and Country Planning Ordinance Cap 141 1950, building by laws, etc. Based on the demographic description and 20-point agreement/conditions, Natives make up the majority of the population, in terms of administration and political governance, welfare, and other considerations, thus their interests must be safeguarded. Such natives’ interest protection can be observed during the era of the British Empire and interim self-governance period. The land is generally divided into two types: Native land or non-native land. Country Land can only be owned by Natives (in principle) and Town Land can be owned by other races and/or the Natives. Such classifications are recognised and enforced by law (institutions). Sabah Land Ordinance and other ordinances were crafted and enforced during the British administration. Economically, Sabah generally relies on three key development sectors; agriculture (palm oil, forestry, vegetables, fisheries, rubbers), tourism, and manufacturing or industrial (petroleum). Aside from that, administratively, there is 1 federal territory (Labuan) and 25 districts within the state that they are divided into 5 administrative districts, of which both Kota Kinabalu and Penampang are within the West Coast division. Whilst, at the local level, there are 22 local authorities currently operating in Sabah, of which, 19 of them are district councils, 2 municipal councils, and 1 city hall. In addition, there is also the existence of the Town Board in the organisational structure of the local authorities. However, as mentioned, and indicated in the Figure 1, only the West Coast division, Kota Kinabalu and Penampang, are opted as study areas. Hence, we further dive into them for more discussion.

The capital city of Kota Kinabalu has an approximate area of 351 km² and a population of 0.63 million (in year 2012). It is located on the northwest coast of
Borneo facing the South China Sea (see Figure 1). Being the capital city of Sabah, Kota Kinabalu plays an important role in the political and economic welfare of the population of the entire state. Since Sabah is famous for its variety and diversity in terms of languages, ethnics, religions, etc., Kota Kinabalu is also a multi-ethnicity, multi-cultural, multi-lingual or multi-dialect, multi-religion city. Besides, administratively, the city is governed by the Kota Kinabalu City Hall and their jurisdiction covers the entire Kota Kinabalu district. Penampang, with a land area of 463.47 km² that is entirely administered by Penampang District Council, is a district within the West Coast Division of Sabah, Malaysia (see Figure 1). It virtually became a suburb of Kota Kinabalu, which is Sabah’s capital, and is considered as part of the Greater Kota Kinabalu area. Its population was estimated to be around 121,934 in 2010, with the Native Kadazan making up the majority. Donggongon is the main town in the district. Similar to Kota Kinabalu district, it is a multi-ethnic, multi-religion, multi-culture and multi-language district. According to the 2010 census, the population of Penampang was 121,934.

This study focuses on local property rights on POS governance, it is necessary to reiterate and clarify the emergence and acquisition of such public domain order (POS property rules) in a summarised manner, especially the factors and the way these factors determine them. Included within the ambit of institutions, the present diversity of rights distribution is a practice-based rights structure that was erstwhile established. Such long-established and long-executed practice is also ‘formally construed or perceived’ by the officials to be consistent with or hinging on the current de jure system. Thus, a combination of both de jure (i.e. via provisions of laws) and de facto (i.e. towards government’s practice or conventions that is not necessarily legal) institutions in discerning and shaping the rights or governance of POS is apparently obtrusive in this local system. The de jure constraints above

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6 In 2010, there were 110,556 non-Malaysian followed by Chinese, Bajau, Kadazandusun, other Bumiputras, Bruneian Malays, Murut, Indian and others (Department of Statistics Malaysia 2010).
7 Mostly, they speak in Malay, Chinese, English and other native languages.
8 The Brunei Malays and Bajaus are Muslims. The Kadazans mainly practice Christianity, whilst the Chinese are mainly Buddhists or Christians. Lastly, there are a small number of Hindus, Sikhs etc.
9 In fact, the findings on that topic was published, entitled “Diverse property-rights structure impacts on urban-rural public open space (POS) governance: Sabah, Malaysia”. This means in this paper, we concisely summarise the findings on POS property rights or order emergence and determination.
10 This applies especially to land subdivision, where an agreement or contract between the government and subdivider is formed. This practice was enforced by the Director of Lands and Surveys Department of Kota Kinabalu (as headquarters); hence, it applies to other districts within the entire State of Sabah.
11 Since the practice is not fully de jure or legally based; hence, it signifies that there is room for partially de facto (conventional) rules, i.e. it appears that the de jure and de facto positions are in place. However, the issue of legality, i.e. to what extent of the current property-rights on POS governance is truly de jure or legitimate, is not the main emphasis and is beyond the scope of this study.
12 According to Sabah Land Ordinance Cap 68, there are 3 categories of titles, i.e. Country Lease (CL), Native title (NT) and Town Lease. However, only CL and NT POS are focused (see below in the later reasoning part).
include policies, constitution, administrative (organisational) rules, statutory land, planning and housing ordinances, judicial decision and contractual arrangements. The following terms and conditions that are derived from institutions include: the Malaysian supreme law: Article 13 of Federal Constitution, a judicial decision of case law: Sabindo Nusantara Sdn Bhd & Anor v Majlis Perbandaran Tawau & Ors [2011] 8 MLJ 653 on bare trustee concept that derived from Modified Torrens system, Sabah Land Ordinance Cap 68: POS letter of offer and title deed of POS and subdivision rules13, Town and Country Planning Ordinance Cap 141: development plan, local plan, and landscape plan, Local Government Ordinance 1961, and the Housing Development Enactment 1978.

Altogether, these terms and conditions are used to justify and effect the current local diverse property distribution in both CL and NT POS governance (rights and duties exchange). For instance, the publicness of POS for accessibility and consumption, unexclusiveness of POS, community formation in POS, and title deed is only granted on CL POS. Management and ownership rights should be handed over via title deed and the site handing over processes, with temporary management duty being held by private suppliers and/or local government (read more, Ling et al. 2014a on how are those property-rights rules emerged or determined; see also, Ling et al. 2014b). Subsequently, the types of rights involved (ranging from alienation, exclusion, management, consumption, to accessibility), as well as their coupled duties and regimes (positions), are identified for a better picture and understanding. Table 1 concisely illustrates the local formal and de facto (real) practice-based property-rights arrangement in both CL and NT POS governance. The terms and details that juxtaposed within it, will be explained as well.

Based on Table 1, initially, one can distinguish and understand the residential POS governance in two general senses; In the current practice above, only the CL POS is involved with title deed issuance, whereas there is no title deed issued to NT POS. Both POS have their respective terms and conditions but more complex impositions of terms and conditions14 and owners covenants were placed on the CL POS compared to the NT POS. The NT POS is straightforward and more plainly defined since it has no title deed issuance; hence, transfer and site handing over covenants are not imposed on it. In the contract, there are three different phases of process in the contract for the CL POS, starting from (i) un-transferred POS title deed and un-handed over POS site in which, the subdivider who is the legal

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13 According to the Planning Ordinance, the open space can only be subsisted should the land that is surrendered for subdivision be more than 1 acre, of which 10% of the land will be allocated as POS if the condition is fulfilled. During the process of subdivision, the parcel (subdivided lots) will be accurately surveyed and determined, including the POS location, shape, size (area) and boundary.

14 (i) The said land is demised herein expressly and only for the purpose of Open Space; (ii) Subdivision of this title (POS) is prohibited; (iii) Transfer, sublease or charge of this title is prohibited except to the relevant Authority or the title may be surrendered to the State Government after the fulfilment of the owner covenants; (iv) The State Government retains the right to acquire the said land, which in its opinion is necessary for any public purpose without payment of compensation.
and equitable owner, is mandatorily subject to the temporary (18-month) owners covenants; then (ii) only after the fulfilment or satisfaction of the aforementioned owner’s covenants, of which the permissible site handing over coupled with a registrable memorandum of transfer, are executed, the subdivider (title holder), who is a bare trustee, is officially considered relinquished of his active ownership and management rights of the space to the local authority (equitable owner) even though he is still a legal owner as the title deed is not even transferred (or still under the private subdivider’s name). That is, within the scope of the bare trustee concept, the equitable rights are more crucial in the sense that they outweigh and prevail over the legal rights.

After the title of POS is issued, the active and actual rights are assigned to the government when the POS site is handed over. Whether the title transfer is executed or not, does not really matter. However, if the equitable local government claim priority by ‘substantiating’ its interest or rights on the POS for becoming a legal landowner, then the registration of transfer should take place (see, Section 88 of Sabah Land Ordinance provision that “…valid until it is registered…”). Note that this interim/temporal mechanism of site handing over is to address the problems of late issuance of title deed that normally takes years due to government bureaucracy. After fulfilling the minimum 18 months of owner covenant, the subdividers will normally choose to apply for transfer or hand over their management and maintenance duties of POS to the government because they do not want to bear further costs of maintenance. Such a measure is necessary as the local authority should be the ultimate equitable owner and manager of the POS. However, private suppliers may retain maintenance duties for 2 years or more as long as they maintain it for the sake of marketing/reputation benefits. This is allowable since handing over or transfer is not legally deemed compulsory.

Additionally, it is also noted that in particular neighbourhoods, the POS management duty can optionally be shared among the community or residents who live nearby. That is, there are some neighbourhoods engaged in such cooperation with local authority. Some POS are managed by two cooperative entities – the local government and community – or managed by the typical one entity – the local council only. For the former, any residents, regardless of race, can voluntarily form a committee and act as a neighbourhood watch. The committee should consist of approximately 10 members, including the president (as a leader), vice president, secretary, treasurer, coordinators and other members.

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15 To develop and maintain the POS within the stipulated time; e.g. at least 18 months in accordance with the approved development and landscape plans/satisfaction of local authority. Failing to do so may subject the subdivider(s) to the sanction of Sabah Land Ordinance Cap 68 or Housing Development Enactment 1978.

16 It means that it is signed, witnessed and dated in favour of the beneficiary whom, in this case, is the local government.
via registration, to ‘partially’ assist the local council in POS management. Duties include monitoring and ensuring the safety, security, cleanliness, and condition of amenities/facilities of the POS. In fact, agreement between a group of residents and the local authority are likened to a contract formation. Either party can offer such bids for the sake of the public good. As mentioned, there are various types of assistances involved. For example, if any vandalism or safety and security issues arise, they may report these issues to the council and be called upon for government meetings to raise their current needs and problems. Occasionally, the community is also involved in ‘communal work/activities’. This involves collaboration among residents, especially to organise cleaning campaigns at their compound. In practice, one committee typically is in charge of more than 1 neighbourhood. On average, one committee could be responsible for 3 to 5 neighbourhoods in which one neighbourhood may consist of more than 1 POS. In the district of Kota Kinabalu, Sabah, only thirty committees were formed to oversee more than 100 tamans (neighbourhoods) or POS, some of which are de facto inactive/passive in exercising their duty (see, Ling et al. 2014b). If the particular neighbourhood performed their work effectively, a non-monetary prize or an award will be conferred upon them by the local government.

Finally, in the last phase of the process (iii), when the title deed of POS is issued by the land office, the previously handed-over POS title should be transferred to the local government. If the title deed is successfully transferred via registration, the equitable local government becomes the legitimate owner and manager of the POS of which some rules that applied to the private suppliers in the 1st phase of the CL POS is extended to the local government. For example, no further alienation or transfer is executable by the government, and the space must be remained shared (for public purpose), unexclusive and unchanged in terms of its purpose. Until 2010, about 63% (190 POS) were not yet transferred as the signed memorandum of transfer was not submitted to the land office for registration. In fact, only the transferred POS titles are entitled to specially be funded by the federal government’s initiative, via the Ministry of Youth and Sports with extra allocation to upgrade its quality. Upgrades include redeveloping the facilities, such as the old futsal, basketball court into a better and more equipped facility. Additionally, the management regime is similar to the previous phase (handed-over but un-transferred CL POS) whereby, the non-obligatory co-management between local residents and

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17 The committee is not directly involved in maintaining the facilities and amenities of the park; rather, they just act as co-manager or assistant to the local government who is the main custodian of the POS.

18 Within the committee formation, all are welcome regardless of gender and races. So far, in this district, mixed races are discovered in one committee, like Indian as the president, while the rest are Chinese, Malay, Natives (bumiputra) who hold respective positions.

19 No conversion, subdivision or other types of misuse (developments) are allowed on POS.
local government is allowable. To sum the CL POS rights distribution, in spite of the slight differences within its transitional process, all the owners (both private subdividers and local government) are considered claimants because the main and active rights that are engaged are management, consumption and access rights.

Next, since the un-titled NT POS is surrendered to the state authority for subdivision purpose and no title deed is granted, which also signifies no complex site handing over as well as title transfer and other alienation procedures like the CL POS are involved, its ownership is automatically held as state land and hence, a state property (see, Section 5 of Sabah Land Ordinance). Since such POS is taken as state government property, the management duty should logically and de jure be held by the government (local council) (see, 38(1) of Local Government Ordinance). However, such de jure procedure may not inevitably and practically be implemented; there are issues whereby the gazetting and vesting procedure are not performed (see, the case of Sabindo Nusantara Sdn Bhd & Anor v Majlis Perbandaran Tawau & Ors [2011] 8 MLJ 653; see also, notes of proceedings of Sabindo open space trial, 2009). Therefore, in short, for the NT POS status, although the land ownership is held as state property, the management or maintenance is formally and de facto being held as an open-access resource or is left ungoverned. Such regime, subsequently, reflects its bundle of rights. The local government is considered a normal public user (with use and access rights) since there is no recognised management right vested in them. Despite the differences within the 3-phase CL POS, or between the CL and NT POS, all of them are meant for the public who are granted use and access rights, and they are considered un-exclusionary spaces.

The information presented in Table 1 demonstrates the prominent diverseness of local property-rights institution in POS governance. These are the main observed complexities in the current local POS governance. That is, general issues of title deed issuance, community association presence, POS site handing over, and transfer of the POS title deed can diversely determine the alignments of rights, regimes, and management duty of POS. In tandem with the study’s objective, it is important to understand whether these heterogeneities matter on the governance, wellbeing, and quality of local POS. More specifically, with emphasis on the state-owned POS 2nd and 3rd phase of CL POS and NT POS (see Table 1), we look into the following aspects: (i) title existence of POS: is the title deed granted on the particular POS? It is possible to have POS with a title deed (i.e. CL POS) and POS without a title deed (i.e. NT POS); (ii) POS community existence: does any community association exist in the particular POS? POS can exist with and without community presence; (iii) POS title deed transfer to local government: Has the title deed of POS been transferred to the government? POS title deed can be transferred or not; and lastly, (iv) Period of POS site handing over: when did the site handing over take place? It could be within any of the following 3 categories: prior to the year 2000, between 2000 and 2009, and 2010 to
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present. All of these different categories (hypotheses) are tested whether they are significantly associated with POS quality.

As a final note of this section, there are several justifications on the selection of residential (landed property) POS and two local districts only, as study areas. Firstly, the emergence of POS social costs in both districts is probably due to the uniqueness of the institutional factor, namely, practice-based diverse property-rights structure arrangement that possibly contributes to POS negative externalities (see Table 1). In addition, residential land use is the sole focus instead of other types of land uses, such as agricultural, commercial, and industrial. Residential land is considered the largest land use; thus, it is possible that ample POS are created in this land category. This renders more samples/cases included in our sampling work. More importantly, a larger sample size can ensure our quantitative analyses are feasibly generalisable and valid. Additionally, due to the institutional arrangement, other land uses do not provide NT POS instances; hence, to make this study more inclusive and comprehensive, only the residential land use is focused. Since only the residential land use is emphasised, this leads us to choose uptown NT and CL POS solely, excluding the town lease as it is located in the city centre area and is normally meant for commercial (mixed-development) purposes and rarely for residential use. Thus, the inclusion of the town lease would subject this study to a sampling issue. Another rationale is to ensure our samples are homogeneous, at least in the land use sense (see ceteris paribus concept). Also, the landed (non-stratified) and unexclusive space is emphasised because the stratified and gated space is subject to another set of institutions that is beyond the scope of this study. Moreover, Kota Kinabalu district was selected because the land office, the Lands and Surveys Department, is the headquarters, and their decisions pertaining to POS governance are constitutionally enforced in the entire State. This simply means other districts must follow such institutional verdicts. Also, this is vital to get first-hand and the latest information from such an authoritative department. Next, due to data sampling limitation (i.e. data accessibility and unavailability particularly on POS that subsisted from Native Title (NT) land subdivision), the Penampang district which neighbours Kota Kinabalu was chosen.

This descriptive-explanatory paper is, thus, structured in 5 sections that proceed as follows: (i) literature review with theories and background of property arrangement and commons, and its impacts on POS governance and quality; (ii) methodology on POS sampling strategy, POS quality rubric development, data collection on POS quality and property-rights attributes, and statistical analyses; (iii) results and findings on each property-rights variable with POS quality; (iv) discussions with the assistance of the triangulation method; (v) conclusion and recommendations that consists of knowledge contributions, policy implications and significance of the study, limitations as well as future research.
2. Literature review

2.1. Neighbourhood commons: residential POS quality as common pool resource (CPR) and externalities issues

Various interpretations of POS are dependent on the contexts. However, since the essence of “no excludable” and ‘publicness’\(^{20}\) of space is keyed out, it sets apart as an unrestricted access place for the public. Such resource, in fact, encompasses a wide array of functions or typologies of space, but only the residential neighbourhood spaces, as “local public goods”, are emphasised in this paper. This includes community or neighbourhood parks, gardens, playgrounds, playing fields, and basketball or football fields. Furthermore, from the commons perspective, such resource domain is considered as a neighbourhood residential commons that is a form of non-traditional commons (Ostrom 2002; Hess 2008). This is typically regarded as a common pool resource (CPR) that possesses two attributes: non-exclusive and substractable/rivalrous. These attributes apply to POS quantity and quality aspects. First, it is difficult to exclude or control users from appropriating POS good quality without impairing the POS condition. Secondly, the antecedent POS quality attributes can be fugitive, as once the POS quality is not well-maintained by one user, only poor quality and unusable space is available to others. For the issue of quality of space, there are many POS measurable quality attributes or ‘qualities’, such as facilities and amenities condition and functionality (maintenance), cleanliness, security and safety, surrounding atmosphere, accessibility, diversity and adequacy, aesthetics, incivilities, landscape feature, greenness (naturalness), and comfort. A few considerations (e.g. different purpose, size, location, types of space and tool users that classified into several domains and items) were coined by scholars (Greenhalgh and Parsons 2006; Hillsdon et al. 2006; Green Flag 2008; Gidlow et al. 2012; Kaczynski et al. 2012; Van Dillen et al. 2012). All these quality domains are sufficiently covered as they are vital as useful references in crafting the local POS rubric (see more in methodology section).

CPR-based POS may generally be subjected to two prominent quality predicaments: appropriation (consumption) and provision (management) (Ostrom et al. 1994). An appropriation issue is associated with the misallocation of space among its users, such as when users undertake activities in a way that deteriorate the POS quality. In contrast, the provision problem is the inefficiency of enforcement on management and maintenance in preserving the POS condition; if the landowners and beneficiaries do not contribute to maintain the quality of POS, the POS will be vulnerable to social dilemmas, such as overexploitation (see, Tragedy of the commons by Hardin 1968), shirking, free-riding,

\(^{20}\) This unspecified notion is rather misleading as one cannot exactly distinguish to what extent the publicness/’sharedness’ of the space is, as it can either be defined as public domain or public realm, which both of them lead to different implications (Webster 2002; Colding et al. 2013).
rent-seeking, etc. This can result in negative externalities like vandalism, pollution, squatters settlement and encroachment, graffiti, disused (underused) or desolate space (no man’s land), unsafe and dirty parks, broken windows theory on crimes (see, Wilson and Kelling 1982) and consequently, suboptimal POS quality (Hess 2008; Foster 2011; Ling et al. 2014a,b). In fact, there are a number of factors that trigger the fall of CPR-based POS into such a fate, but only the contextual (institutional) determinant is emphasised (see Dolšak and Ostrom 2003b for other possible factors affecting CPR governance, especially its consumption). Hence, in the following section, we thoroughly discuss the connection between the institutional property-rights system with the POS governance and quality.

2.2. Institutional property-rights structure on POS governance and quality

There are numerous leading scholars, from varied disciplines, who have made significant and seminal contributions in studies relating to new institutional economic domain in relation to resource governance (see, one of the pioneers Coase 1960; see also, Demsetz 1967; Barzel 1989; North 1990). However, prior to an in-depth discussion of institution and resource association, we provide a concise review on the background of institutions and property-rights system.

2.2.1 Background and definitions

Property-rights structure that consists of two distinct underlying constituents, property (bundle) rights and property-rights regimes (Buck 1998; Heltberg 2002), are considered institutions (see also Cole and Ostrom 2012 for more property systems theories’ definitions and meanings). Relative property-rights, regardless of the vast definitions, are generally referred to as economic rights that are associated with liabilities and restrictions, and are possessed or owned by individuals over the resources, which are either de facto or de jure recognised (Musole 2009). The economic rights here are like a bundle of ‘sticks’. Each stick signifies a type of right (e.g. use, alienation, management, etc) (see, Schlager and Ostrom 1992 see also, Musole 2009; Boydell and Searle 2014). Thus, exchanging of rights and duties among individuals is actually a form of contract (agreement): “as a document that sets out a set of rights...” (Lee et al. 2013, p. 4). All of the above types and attributes of stick bundles are about ‘rights’ themselves. It might be useful to ask, ‘what’ grants or defines the rights bundle besides the legal and self-enforced constraints?

Buck (1998) argues that property (bundle) rights are determined or characterised by the property-rights regimes (see also Fuchs 2003). By knowing the distribution of rights among individuals, one can determine the type of regimes. Further, Quinn et al. (2010) demonstrated that each regime is associated with different types of bundles of rights. This was corroborated by Hanna et al. (1996) and Bromley (1991), who argued that it is a form of institution. Hanna et al. (1996 p. 9) further posited, “Property rights regimes are critical institutions... They link society to nature and have the potential to coordinate human and natural systems in a
complementary way for both ecological and human long-term objectives”. Such institutional regimes can be classified into four typical categories: open-access, common-property, private property and state property (Heltberg 2002). Each of these categories, with its singular design, generates different resource governance and quality output. However, in reality, those regimes are not often ‘purely’ assigned or simply ‘overlapping’.\(^{21}\) Therefore, an evidential interrelationship between the property-rights regimes and property-rights have defined the resource system and the POS categorisation of economic goods (Buck 1998).\(^{22}\)

2.2.2 Roles and implications of property-rights structure: state-property, common-property, private-property and open-access regimes in POS governance and quality

Grafton (2000, p. 504) contends, “property-rights are the fundamental to understanding the problems associated with the exploitation of the environment”. Such institutions determine the resource governance and output successfullness in terms of their productivity, optimality, quality, efficiency and sustainability (see Dolšak and Ostrom 2003b; Cole and Ostrom 2012). Similarly, Demsetz (1967) argues that property-rights that define the incentives and cost structures, are created for the internalisation of externalities. Economic theory further advocates that property-rights are strongly colligated with the concepts of transaction costs\(^{23}\) and

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\(^{21}\) Ownership and management rights are individually held by government and community, respectively.

\(^{22}\) For instance, in general, the private regime with exclusion rights may likely provide private/club goods, whilst state or open-access resource regimes may more likely render CPR goods or public goods.

\(^{23}\) Variously defined, it is an institutional cost that covers costs of information, contracting, maintenance, monitoring, managing, bargaining (negotiating), enforcing rights, internalising and so on. Thus, the issue of transaction costs measurement is critical as measurability is vital in predicting social behavioural moves. However, only the ‘subjectivist’ method is emphasised, and is not necessarily expressed in definite money or cost terms. It is measured by *approximating* time, effort, willingness, reluctance, and energy that are more appropriately taken as transaction cost proxies, and then ‘reflected’ in a more qualitative forms, such as simple self-interest, uncertainty, and opportunism (see Cheung 1998 cited in Musole 2009).
incentives coordination. This means that changes within the institutional system, in turn, modify the incentives and costs structure. Thus, the institutional design and property-rights based transaction costs and benefits analysis can influence the agents’ economic behaviour whether to govern and use the resources efficiently (Musole 2009) (further illustrated in Figure 2 by Buitelaar and Needham 2007). For instance, due to the current institutional system, especially in relation to rights enforcement issues, *ceteris paribus*, when the enforcement cost is high (i.e. costly and time-consuming), there is low incentive to enforce and a higher possibility of people choosing to shirk. For example, this may lead to under-investing or mismanaging the resource, and subsequently ensuing in negative externalities. However, this does not imply that high transaction costs will lead to low incentive; rather, this has to be contingent on whether the *external* incentives come into play (Coase 1960). This relationship serves as a pre-requisite, particularly in explaining the issues of *why* or *how* the property-rights affect the costs and incentives allocation, and hence, market (social) behaviour and sustainability (social, economic and environmental) performance.

In association with the preceding highly vulnerable CPR-based resource, scholars have *nem con* testified that complex scenarios of property-rights structure issues that induced stakeholders to be incentivised to either internalise or externalise the externalities, can generally be categorised as follows: definition of rights, security of rights, and alignment (adaptiveness) of rights (Ling et al. 2014a). To determine whether the above institutional design becomes an issue, in line with Webster’s (2005) methodology (i.e. common-sensibly judging via externalities from neighbourhood quality) the persistence of externalities is evaluated. However, for this paper, only the misalignment, attenuation and insecurity of property-rights that are inclusive of land titling issues are focused.

Our discussion now shifts to the preceding property-rights regimes in POS governance. POS are, de jure, conventionally nationalised or being held as state-property regime (Webster 2007; Garnett 2012). Although there are desired outcomes of such a Leviathan regime, many scholars still argued and demonstrated that it mostly brought more harm than good. Various justifications have been provided on the failures, such as corruption, rent-seeking, lobbying behaviour, poor policy prescription, monopolisation due to lack of competition and proper audits by external authorities, poor maintenance, poor management and sanction enforcement on wrongdoers, political red tape, overburdening of financial/fiscal resources, shortage of man-powers, and technical restraints, especially in dealing with the increasing number of scattered POS. As a result, delaying their wielding work may be the only choice to reduce workload. In some cases, they may not attempt to manage at all. In fact, such deferral or abandonment of work may

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24 Particularly, public or civic goods, infrastructures, reserves (forests, rivers, irrigation, national, state or even local parks), are normally rendered by government because some scholars thought it is the *only* way to sustain its quality. This idea was projected across the world (see, Ostrom 2005).
worsen the condition as the next repair would incur a higher and excessive cost (over budget), and may cause the authority to totally neglect it (Ali et al. 2010).

In addition, these regimes have a low priority towards local social-environmental preservation compared to the economic goal; that is, they may rather choose to neglect or underfund the green POS maintenance as it is not economically profitable or non-revenue generating (Colding et al. 2013) compared to other public amenities, such as road maintenance. Thus, public space management takes little precedence (Carr et al. 1992). Such ‘regulatory slippage’ on POS (Foster 2011) is, in turn, recognised as mere ‘paper parks’. This further confirms Bromley and Cernae’s argument that “Unfortunately most state property regimes are examples of the state’s reach exceeding its grasp. Many states have taken on far more resource management authority than they can be expected to carry out effectively…” (Bromley and Cernae 1989, p. 25). Such government-created tragedy has degenerated in the private property or open-access resource regime. The resources of both regimes are entirely open to be degraded in both quality and quantity (see Malek and Mariapan 2009; Zakaria et al. 2014 for degradation of government-owned local POS in Malaysia). As for the former (private-property regime), an individual may ‘claim’ the POS belongs to them of which they ‘misuse’ it for their private interests, like building house extensions, squatting, car-parks, etc. Whilst, for the latter (open-access resource), as exhorted by Ellickson (1996, p. 1168), it is “classic sites for tragedy”. Such unowned and unregulated regimes on scarce POS has a high propensity to be doomed to dilemmas, as seen in Hardinian’s tragedy (Hardin 1968), because everyone with ill-defined use rights are strongly incentivised to overuse it. That is, no one can preclude others from consuming it and nobody is willing to invest in its management and restoration.

A number of strengths and desired results were observed (Ostrom 1990; Agrawal 2001), particularly on POS (Chen and Webster 2006; Lee and Webster 2006; Colding et al. 2013) in the case of common property regime or self-organisation collective action (e.g. via committee associations on resource governance). In essence, such common property institution is possibly viable, equitable, stable, efficient, ecologically appropriate and sustainable, especially when some criteria or design principles are accomplished. Scholars like Wade (1987), Ostrom (1990), Stevenson (1991), Baland and Platteau (1996), Agrawal (2001) Dolšak and Ostrom (2003b) established and shared some successful characteristics or principles as follows; (i) community attributes:
small size and homogeneity of group, social capital, experienced leadership and trust establishment, (ii) resource domain attributes\textsuperscript{26}: considerably small size, low mobility, high predictability of resource, and spatially strategic and (iii) governance rules attributes: clearly defined boundary of resource, highly dependent on resource, secured or governmentally recognised, clear property-rights tenure on such governance, having graduated sanctioning (Van Miltenburg et al. 2014) and conflict resolution platform, and less governmental intervention, e.g. some assistance – in terms of technical, and compensation can be rendered to the local community.

However, these can contribute to this regime's failure, even in the initiation stage, if some crucial principles are not fulfilled. In this case, transaction costs may escalate (see seminal work: the logic of collective action by Mancur Olson (Olson 1965). For example, quite a number of local management housing corporations failed to manage their common spaces due to users’ shirking and free-riding behaviour; hence, the supplier had to undergo bureaucratic procedures to recover the responsibility (see more, Tiun 2006). Despite the successful rules of principles, some scholars, opined and showcased otherwise. For example, it has been shown that a bigger and heterogeneous community may contribute more resource input. This is somewhat coherent, as an ever changing social ecological system requires an evolved set of design principles that may contravene the previous ideas (see more Van Laerhoven 2010; Ho and Gao 2013).

Generally, such institutions enable the co-proprietors to exclude free-riders and outsiders\textsuperscript{27}, and delimit and govern consumption rights of individuals so that overconsumption of the resource does not ensue. Moreover, local users have a better understanding, sensitivity and specialised knowledge of their needs and environment than an external top-down government approach or private enterprise; hence, they have the ability to craft institutions that complement their present change, necessity and circumstances, such as management and consumption rules as well as sanctions on the violator (Tucker 1999; Chen and Webster 2006).

In terms of management and control, those users that are closer to a local POS (Webster 2005) may effectively undertake their tasks as they are the persons who are at a better position or more likely to communicate with other users, and invest time in maintaining and monitoring the users as compared to a private or state regime (see, subsidiarity principle) (Van Laerhoven 2010). In addition, as they are the ‘regular’ users, especially those individuals having strong social-ecological ties, these individuals are unlikely to intentionally misuse it. For instance, in

\textsuperscript{26} The physical and spatial attributes of local Sabah’s POS; e.g. low mobility and other traits that likely lead to successfulness of common-property (see Ling et al. 2014b).

\textsuperscript{27} However, since this POS context is de jure defined as a public realm or public domain, although this institution, in essence, allows disposal, exclusion and control by a group of local people, this does not entail that they are bestowed upon such rights. In other words, exclusion on the POS is prohibited as this was ‘attenuated’ by the government’s planning constitution and regulation (see, Colding et al. 2013).
Malaysia, a concept of community involvement or neighbourhood watch like “Rukun Tertangga” is formed with a desirable outcome (e.g. less vandalism and crimes) because residents willingly enforce their rights, like collectively patrolling around their compound and frequently engaging in activities together (social capital increased) (see, Abdul Karim and Abdul Rashid 2010). Despite this institution’s success, it does not necessarily entail that this is the sole “one-size-fits-all” cure for internalising the dilemmas-triggered-externalities. In exchange, a dynamic governance to adapt and evolve over time in complex and rapidly varying social ecological system is required (Dietz et al. 2003). Whilst, for well-defined private property regime, normally a registered title deed that acts as evidence is issued to the subdivider or owner. Such deed does not only give a legal recognition of tenure; it also gives some impact on the owner’s perception and concept of their tenure security where the titleholders may feel more confident about their ownership on the resource as insured, un-challengeable, tangible and guaranteed with no risk of resource dispossession (Markussen 2008; Payne et al. 2009). Hence, it incentivises them to be more willing and responsible to the provision and investment in the resource, which increases its value, quality and productivity (Marx and Rubin 2008). However, some studies also showed that land titling demonstrated otherwise, in that there was no significant impact of land titling on resource outcomes (Heltberg 2002; Sitko et al. 2014).

Nonetheless, many scholars still concurred that private property is the most efficient and sustainable kind of ownership in governing resources (Demsetz 1967; Barzel 1989). This is also advocated as one of the measures to resolve Hardinian’s tragedy (Hardin 1968). The idea is that individuals can internalise the externalities by echoing Coasian’s theorem bargaining concept by enforcing exclusion on outsiders, and controlling the usage as well as transfer of resource to another person that either improve resources or economic production (Berkes 1996). However, such institutional exclusive rights will not be effectively enforced if the private economic interest is not compatible with the environmental protection. Additionally, it may not be appropriately and sustainably applicable in this unpriced POS because the ownership and exclusive rights (benefits) are attenuated to a point that it becomes a non-exclusionary, non-commercialised and inalienable POS. This, thence, causes dissatisfaction of the private supplier because the economic and environmental costs outweigh the benefits. Oftentimes, the gains collectively shared by the free-riders are too low and unpredictable (Acheson 2006; Quinn et al. 2010). An attenuation of private right28 is the weakening or expropriation of the exclusive private property rights of the owner by the State that can either be in the forms of utilisation, alienation, exclusivity, tenure duration. This means it may benefit a third party, such as the enhancement of social-ecological welfare.29

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28 As ‘shrinkage of economic options’ and ‘reduction in asset value.’ (Furubotn and Richter 1991).
29 Attenuating private rights is considered a double-edged sword that leads to different economic behaviour and resources outcomes. Thus, a balanced point is necessarily sought (Musole 2009).
As indicated by Furubotn and Pejovich (1972) and Acemoglu et al. (2001) in a study of institutional effects, expropriation or attenuation of private property rights is important as it influences the owner’s expectations and actions on the uses and management of the resources. Severe attenuation may then incentivise the owners to have short-term planning by shirking or adversely utilising the POS. Hence, by engaging in shirking (e.g. inadequate maintenance) or overexploitation (e.g. misused for other purpose), owners can at least incur less costs and may profit some other gains from the resources to ‘cancel out’ or cope with the ‘disadvantageous’ rights of attenuation impact. However, from the developers’ perspective, such rights attenuation does not always trigger them to behave self-interestedly, especially when some elements are present, such as stringent coercion by the government. Any incompliance of or ex-post opportunism is regarded as a breach of contract, whereby the violator is subject to sanction that are ex-ante defined (Williamson 1985). So, from this, the developer is bound to fulfill the restrictive covenants (see contractual neighbourhood governance by Webster and Goix 2005). In addition to that, such breach may extend the sanctioning impact. That particular developer may face a hard time securing the next project approval from the government. Therefore, for long-term gain, they may not choose to blemish their reputation and give up their prospectively lucrative projects (see Glasze et al. 2006).

Private suppliers are also willing to take their own initiatives and interest to invest for maintaining such commons because: (i) it is part of their marketing strategy to sell off their properties as well as heightening their nearby properties value and price, and (ii) it is part of their reputation strategy. Stiff competition among developers leads to market pressure to see who can produce better quality of space (Bowman et al. 2009). In short, growing privately owned and managed CPR-based POS may, often, contribute to a successful and good public space governance and quality due to the entrepreneur’s firm capacities in technical, financial, and man-power. This enables them to deliver better maintenance, control use, monitoring, etc (Glasze et al. 2006; Foster 2011). Therefore, in a priori sense, based on the foregoing syntheses, this clearly shows that institutional design does cogently matter in POS governance, of which it influences POS utilisation and management, and subsequently, its quality. For a better understanding, a conceptual framework is showcased in Figure 3.

Therefore, we formulated 1 main general alternative hypothesis, which encompasses 4 testable alternative (directional) hypotheses divided into 2 stages as follows:

**General hypothesis:**
Overall, by considering the 1st and 2nd stage of associations below, there is a statistically significant difference or association between the current local institutional property-rights structure and POS quality.
1st Stage: There is a statistically significant difference between (i) title deed existence and POS quality; i.e. POS with title deed is more likely to contribute good POS quality.

2nd Stage: There is a statistically significant difference between (ii) community existence, (iii) title deed transfer to government, and (iv) site handing over period to government with POS quality; i.e. with community involvement, title deed transferred to government, and the later the site is handed over to the government, it is more likely to lead to good POS quality.
Do institutions matter in neighbourhood commons governance?

3. Methodology

3.1. Study sample size

With the post positivism paradigm, we deductively employed a cross-sectional case study design of a total sample of 172 residential POS from the two districts. They encompassed 11 neighbourhoods, within two different local authorities jurisdiction, in which 150 CL POS was ‘probabilistically’ sampled via stratified random sampling of a total population of 350 CL POS from Kota Kinabalu, while the entire population of 22 NT POS were all sampled from Penampang districts, respectively.

3.2. Data collection procedures: measures and instruments

Different data sources were gained by different techniques and tools, including a POS quality audit and government document archival search. The variables selected for this study were based on the study area’s property-rights structure design, as well as POS quality features, which were underpinned by review of the literature. Full details of data determination and collection process are shown as follows:

3.2.1. Dependent variable: quality of public open space (POS)

We garnered the qualitative-to-quantitative data of POS quality via the direct structured observation. For each POS, about 10 pictures were captured for evidence and recording purposes. We journeyed on-foot to visit the areas under study, with the assistance of a Global Positioning System device and a hard-copy map of Sabah, once these two main criteria of POS were fulfilled: (i) publicly accessible, (ii) the minimum size of POS is at least 1.5 acre. During the daytime inspection process, which was carried out between 20th March 2014 and 15th June 2014, only 2 assessors participated in measuring the POS quality, of which one researcher was directly involved and the other assessor was a public official research assistant who was hired and was provided approximately 3 hours of training and given a briefing session on employing the POS quality audit tool. Both of the assessors worked together to measure the individual POS quality. In order to objectively measure the POS quality via observation, an audit tool was developed. We reviewed and relied on a number

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30 The neighbourhood was defined as any area within a 10 to 15 minute walk of a user’s home or within 500 m away from the POS.

31 Along with the criteria, some secondary POS criteria were taken into account, like types of housing (more than 80% are medium cost housings), and geographically, all of them were located in a quite outskirt area. In terms of usages of observed POS, most fell within the scope of active informal spaces (playground, basketball and badminton courts). This is vital for keeping the sample as homogeneous as possible as these aforesaid elements could be the exogenous factors in affecting POS quality, which hence may downplay the core emphasis (institutional perspective) of this paper.
of established templates/measure items (approximately 25 tools)\textsuperscript{32}, including the Green Flag Award (Greenhalgh and Parsons 2006), Neighbourhood Green Space Tool (Gidlow et al. 2012), Community Park Audit Tool (Kaczynski et al. 2012), and the local government’s (Kota Kinabalu City Hall) pre-existing audit tool. Our tool, thus, consisted of 34 items grouped into 6 interrelated domains, namely safety and security, cleanliness and hygiene, aesthetics, availability of basic amenities, functionality of facilities and amenities, as well as horticultural landscape features.

After finalising the above quantitative rubric coupled with the structured observation approach, specifically for structured quality measurement and assignation of score to each item of the POS site, the Green Flag Award tool or methodology was primarily adopted (Greenhalgh and Parsons 2006; Green Flag 2008). A 4-point marking scheme between 0 and 3 quantitised score was crafted (see figure 4). When assigning a score for each relevant item, a list of detailed descriptions or philosophy of POS rating as a guideline or operational framework was prepared for reliability. The Green Flag Award standard uses 70\% field assessment and 30\% desktop element to gain a total score; however, for this strategy, only the field assessment criteria were employed. To attain a good or high quality POS score, a minimum of 60\% or 12.6 points on the field research must be achieved. That is, the quantitised scores were summed up, then the mean\textsuperscript{33} was calculated and multiplied by 7 (field assessment, 70\%), in order to arrive at a final score out of a possible 21 points (Waltham Forest Council 2010; Portsmouth City Council 2012). After that, they were dichotomised into two categories, either poor (low) or good (high) quality based on the above guidelines. Finally, we nominally codified them: 0=low quality and 1=high quality, so that it fits for the later part of the analysis.

To get this tool validly and reliably developed, we underwent several stages, namely: (i) review of existing instruments for criterion validity, where we gained

\begin{table}[h]
\centering
\begin{tabular}{|c|c|c|c|c|}
\hline
Assessment & N/A & 0 & 1 & 2 & 3 \\
\hline
Not necessary (optional items) and absent & Necessary items but absent & Poor & Fair & Good \\
\hline
\end{tabular}
\caption{Field Research Scoring Guide. (Source: Adapted from Portsmouth City Council (2012).}
\end{table}

\textsuperscript{32} Despite the large amount of reviews, only some tools were used as primary references. That is, Green Flag Award was particularly focused as it was weighted more heavily than other tools (secondary) in terms of methods and environment, e.g. (i) relevant for local government’s POS, (ii) relevant to the local neighbourhood POS spatial and physical attributes (types of spaces and area) and lastly (iii) giving high inter-rater reliability.

\textsuperscript{33} To obtain the mean of POS score, the formula used was: summation/total of POS scores divided by the number of items involved.
some ideas and insights in building our own instrument via a rigorous review on approximately 25 existing and established instruments. By doing this, we know what possible items and domains should be included and assessed in our instruments, as well as the scales (points) and benchmark in determining the quality of space. This is where we try to ensure our tools are highly similar to other validated measurement tools. Next, (ii) a draft tool was disseminated to an expert panel (academicians and local government officials) for face validity; that is we sent our drafted tool to 3 landscape and planning lecturers and the local government of our study area (Kota Kinabalu City Hall) to check whether the proposed items and domains are relevant or close enough to the local system. In fact, several notes of the experts were made that lead to some changes and amendments accordingly. Thirdly, we moved to (iii) a pre-test, which was used to strengthen the reliability and validity of the tool by familiarising the drafted tool and auditing process in a real system. We executed pilot tests on 10 non-study area local POS, namely a basketball court, playground, and badminton court, in which minor changes were taken into account (addition and/or modification of a few items in the operational framework, such as the addition of “surrounding cleanliness of POS” item). Lastly, (iv) taking all the above amendments into considerations, we sent the final tool to the previous experts for a final round of review and approval. Only after the above process was completed to obtain the final valid and reliable tool, did we officially run the tool in the study-area POS. Inter-raters (percent) agreement and reliability (Cohen’s kappa) of the instrument between the 2 auditors were assessed, by comparing overall item scores in the dichotomous form (i.e. 0 or 1). In the 1st stage of 172 POS sample, a score of 93.6% and 0.87 was obtained, while for the 150 POS sample, 92.7% and 0.85 was scored. These figures indeed were acceptable since both satisfied the benchmark of minimum 70% as well as 0.6 for inter-rater agreement and reliability (Kaczynski et al. 2012).

3.2.2. Independent variable: property-rights structure characteristics
Primary and secondary sources of unpublished data pertaining to the hypothesised attributes of property-rights structure are: (i) title deed existence; (ii) community existence; (iii) transfer of title deed to local government; (iv) site handing over period to local government. These attributes were elicited via a document archival search from various governmental (land offices and local authorities) departments. These data include title deeds of POS, letter of offer on subdivision of land, subdivision and development plans, subdivision applications, memorandum of transfer of POS, statistical records of community formation with terms and conditions in residential area, list of handed and unhanded over POS sites, a list of un-transferred and transferred POS title deed and a list of NT POS. Most of

34 We were contacting via calling, emailing, making appointments, and providing a few letters of authorisation to the relevant public officials for the permission of supplying the requested documents. Altogether, it approximately took us 6 months to secure all documents, starting from January 2014.
these acquired data records were between 1990 and 2013. After the acquisition of a diverse and massive amount of data, we processed and content analysed them, and grouped them into distinct categories by number-coding them. The data was grouped as follows: Title deed existence: 150 POS with title deed (“1”) and 22 POS without title deed (“0”); community existence: 28 POS with community presence (“1”) and 122 POS without community presence; transfer of POS title deed to government: 25 POS title was transferred (“1”) and 125 POS title has not been transferred (“0”); and site handing over to government (year): 90 POS site handed over before 2000 (“0”), 42 POS site handed over between 2000 and 2009 (“1”) and 18 POS site handed over in 2010 and above (“2”).

3.3. Statistical analyses

First, a 2-stage non-parametric analyses using Pearson’s Chi-Square tests ($\chi^2$) cross-tabulation, was performed to determine the association between Sabah’s property-rights structure (i.e. 4 preceding hypothesised attributes) and POS quality. That is, the 1st stage analysis acts as a prerequisite and involved all 172 POS samples (both NT and CL POS), while in the 2nd stage provided a more in-depth analysis that solely involved 150 CL POS samples. The rationale for using only 150 POS instead of 172 samples of POS in the 2nd stage analysis is because in the results and findings section, the reader may discover that there is a need for further scrutiny in CL POS idiosyncratic property attributes only, without involving the NT POS property traits. Thus, inclusiveness of 22 NT POS samples will distort the data and result in statistical errors (see the introduction section above). Chi Square analysis was opted because of a few reasons, including: (i) it is an established, widely-used and simple test in exploring relationships between variables; (ii) due to the categorical nature of our data variable forms (i.e. nominal and ordinal data); the data obtained are not normally distributed; (iii) our sample size of 150 or 172 POS is adequate to perform such analysis (Sekaran 200335). Next, we employed inferential statistics with p-values at a significance level ($5\%$) alpha cutoff $\leq 0.05$,36 and descriptive statistics (directions and patterns of associations). We also engaged in Lambda, $\lambda$ test37 to asymmetrically measure each of the association strengths magnitude that ranges from 0 to 1. A result closer to 1 is a stronger association (Britton 2014). All these analyses were undertaken using the Statistical Package for Social Sciences Version 16.

35 In most social science researches, a sample size between 30 and 500 is sufficient.
36 When alpha=0.05, according to the Chi-squared table, the state of rule of critical values for df (1) and df (2) are 3.84 and 5.99, respectively. If $\chi^2$ is greater than both 3.84 and 5.99, it then rejects null hypothesis.
37 This is a proportional reduction in error measure that is suitable for nominal by nominal/ordinal data, in which it signifies how much the independent variable (property-rights structure) reduces the error associated with estimating the value of a dependent variable (POS quality). Multiplied by 100, it represents the percent reduction in error. The higher the value, the higher the error reduction, the better and more accurate the independent variable can predict or explain the dependent variable.
4. Results and findings

The 1st and 2nd stage analyses of 172 and 150 sampled POS results on the association between POS title existence, community existence, POS title transfer and POS site handing over period (year) with POS quality, as well as their directions and strengths of associations are altogether shown in Table 2. The table shows that in the 1st stage, POS with title deed had a higher probability to yield a good quality of POS than POS without title deed which did not yield any good quality of POS. However, it is noticeable that POS with title deeds per se does not necessarily impart good quality of POS as some POS with title deed still showed poor quality. Thus, as stated, this subsequently led us to carry out the 2nd stage of analysis that involved only 150 CL POS with title deeds so that it is able to better explain the weak 1st stage association. In terms of association strength, the result showed 0.171, which is rather substantial. This, in turn, entailed that this attribute would be able to increase accuracy by 17% or reduce errors by 17.0% in predicting the value of the POS quality.

In the 2nd stage analysis, it showed that although the POS with community existence may not always be associated with good POS quality, it was still slightly evident that POS with community presence was more likely to contribute a good quality of POS than the POS without any community involvement. Such little statistical difference could also be reflected in its association’s low strength (i.e. 0.03), that subsequently produced 3.0% ability of this attribute to estimate the outcome of POS quality. In other words, this attribute may not be regarded highly influential and it may give a perception that it is not vital to be considered for model prediction inclusion. Next, there was no statistically significant difference between POS title transfer to government and POS quality; i.e. due to extremely high chance association (with 76.9% high errors). This led to a 0.0 and 0% for the strength and proportional reduction error of lambda. Such results mean that it is a non-impactful characteristic, so it may be suggested that it is negligible for model inclusion, at least in this local setting.

Finally, for the significant association between POS site handing over and POS quality, with regard to the aforementioned POS observation date in 2014 (for benchmark purposes), it is found that the later the date of POS site handing over to government, the higher the likelihood of good POS quality and vice versa. Simply, the earlier the POS is handed over or held longer by the government, the lower likelihood of good POS quality, or the shorter the period held by the government, the better or higher likelihood of good POS. This resulted in the strength and proportional reduction error of Lambda as follows: 0.325 or 32.5%. This Lambda figure is considered significantly substantial or highly influential. This should vitally be included in the model prediction (i.e. by admitting this significant parameter, errors would be reduced by 32.5%). Thus, this increases

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38 It is also found that the more recent the POS site handing over to government, the higher the likelihood of good POS quality.
Table 2: Descriptive and inferential statistics on the association between title existence, community existence, transfer of POS title deed to government and POS site handing over period (year) to government with quality of POS.

<table>
<thead>
<tr>
<th>Quality of POS</th>
<th>1st Stage</th>
<th>POS community existence</th>
<th>POS title deed transfer to local government</th>
<th>2nd Stage</th>
<th>POS site handing over period to local government (year)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Without title</td>
<td>With title</td>
<td>Total</td>
<td>Without community presence</td>
<td>With community presence</td>
</tr>
<tr>
<td>Poor</td>
<td>Count</td>
<td>22.0</td>
<td>68.0</td>
<td>90.0</td>
<td>62.0</td>
</tr>
<tr>
<td></td>
<td>Expected count</td>
<td>11.5</td>
<td>78.5</td>
<td>90.0</td>
<td>55.3</td>
</tr>
<tr>
<td></td>
<td>Column percentage %</td>
<td>100.0</td>
<td>45.3</td>
<td>52.3</td>
<td>50.8</td>
</tr>
<tr>
<td>Good</td>
<td>Count</td>
<td>0.0</td>
<td>82.0</td>
<td>82.0</td>
<td>60.0</td>
</tr>
<tr>
<td></td>
<td>Expected count</td>
<td>10.5</td>
<td>71.5</td>
<td>82.0</td>
<td>66.7</td>
</tr>
<tr>
<td></td>
<td>Column percentage %</td>
<td>0.0</td>
<td>54.7</td>
<td>47.7</td>
<td>49.2</td>
</tr>
<tr>
<td>Total</td>
<td>Count</td>
<td>22.0</td>
<td>150.0</td>
<td>172.0</td>
<td>122.0</td>
</tr>
<tr>
<td></td>
<td>Expected count</td>
<td>22.0</td>
<td>150.0</td>
<td>172.0</td>
<td>122.0</td>
</tr>
<tr>
<td></td>
<td>Column percentage %</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Inferential statistics:
\( \chi^2 (1, N=172) = 22.984, p = 0.000 ; \lambda = 0.17 \), Proportional Reduction Error = 17.0% (Significant).
\( \chi^2 (1, N=150) = 7.938, p = 0.005 ; \lambda = 0.03 \), Proportional Reduction Error = 3.0% (Significant).
\( \chi^2 (1, N=150) = 0.086, p = 0.769 ; \lambda = 0.00 \), Proportional Reduction Error = 0.0% (Non-significant).
\( \chi^2 (2, N=150) = 30.047, p = 0.000 ; \lambda = 0.325 \), Proportional Reduction Error = 32.5% (Significant).
Do institutions matter in neighbourhood commons governance?

accuracy, at least by 32.5% in explaining the POS good quality outcome. With the exception of the POS title transfer, it can be inferred that POS site handing over period was the most influential and accurate attribute in contributing the POS quality (which has a strong association), followed by title deed existence (moderate association) and community existence (weak association). Hence, these findings led us to discern that Sabah’s institutional property-rights structure is still generally associated with POS quality, by accepting these three alternative hypotheses: title existence, community involvement and POS site handing over period and retaining one null hypothesis: POS title transfer.

5. Discussion

We deduced from the findings mainly by employing a theoretical triangulation approach. The findings were adequate enough to depict that Sabah’s institutional property-rights structure is generally associated with POS quality. This can be explained by Schlager and Ostrom (1992) and Hanna et al. (1996), who argued that institutional design and change effect, coupled with transaction costs and incentives distributions have the ability to shape resource governance, in respect to consumption and management. This can ultimately impact their health, sustainability, and quality, particularly in our local POS context (Webster 2007; Foster 2011).

As for the POS title existence attribute, despite its interim attenuation and insecurity of rights issues that may render an opportunistic shirking behaviour, we are convinced that such restrictions can reasonably be eliminated through the following justifications. The POS that were granted with a title deed were initially held by private suppliers in a contract yielding good POS quality. This entails that prior to POS site handing over to the government, the condition of space will beforehand be inspected and thus, good quality of POS will be guaranteed. Then, from this point onward, the local government will officially govern the considerably good POS quality. This situation can generally be consistent with some scholars’ contentions on advantages of resources privatisation (Kayden 2000; Nemeth 2009). Here the quality and optimality is more guaranteed, as private suppliers have sufficient financial, technical, and man-power supply in monitoring and maintaining POS (Glasze et al. 2006). For the sake of a better marketing strategy, property values and prices, rate of housing sales, corporate reputation, competition among private entrepreneurs (Bowman et al. 2009), prospective development projects, and contractual arrangements with government (Webster and Goix 2005), the developers are not incentivised to shirk their rights. According to Sabah’s law provisions, the Sabah Land Ordinance, failing to efficiently provision POS management may be imposed with stringent penalties, namely land reversion, monetary fine or imprisonment.

However, findings also showed that such handed over titled CL POS will not necessarily lead to a desired quality. This is in line with the argument of Heltzberg (2002) who said that land titling does not inevitably yield a desirable outcome of
resources. Such commons that are misallocated under the government regime are normally subject to various enforcement constraints, such as budget, technicality, and distorted decision-making, lobbying, and political influence (Musole 2009). Then shirking becomes tenably evident (see Malek and Mariapan 2009; Zakaria et al. 2014 that government’s management issue is widespread even in the local context; see also Webster 2007; Foster 2011 on regulatory slippage; Colding et al. 2013). This further signifies that regardless of initial temporary denationalisation (privatisation) that reasonably contributes to good local POS quality, if such former management and maintenance is not efficiently sustained by the current manager, i.e. the local government, the quality will still deteriorate (Ostrom 2005). After all, POS quality is dependent on effective governance in terms of sustainable management and control that would be useful in coordinating the users’ consumption behaviour (see Colding et al. 2013).

On the contrary, the situation is different for the non-titled NT POS. Since it was straight away and de facto owned as state property and managed by no one. Most of the observed POS were in poor quality. Aside from being misused for other purposes, such as car-parks and house extensions, they were not developed and totally left as a derelict and unused land. The quality of non-titled NT POS is worse than the titled CL POS as the former is considered totally ungoverned (unmanaged) or no man’s land, whereas the latter is still, at least, governed and managed by two entities, private suppliers and local government. The key point here is the presence of management, although inefficient or questionable, may still be better off than the POS without any management regime (Colding et al. 2013). This has confirmed that, unlike other resources like fisheries and forestry, the open-access POS health can be extremely devastated by severe overutilisation and disuse (see, Foster 2011; Garnett 2012). One of the prime reasons of being left in the open-access state is probably due to miscommunication between inter-government. That is, the POS might not be gazetted. Thus, the management right was not legally vested to the local government. In other words, those non-titled POS were state-owned, but ironically managed by nobody (see, above Sabindo’s case proceedings). This scenario has reflected the inefficiency of the government administration and poor policy prescription (see Musole 2009). Being unresponsively insensitive towards public environmental goods supply (Colding et al. 2013), corruption and no external authority to audit the administration and management system may also spring up this issue (see Musole 2009). Consequently, this local NT POS in turn transforms from a de jure state property into a de facto open-access resource (paper park) that is extremely vulnerable to overexploitation and underinvestment (Hardin 1968).

Next, for the community existence, this finding confirms that of previous studies in the efficiency and successfulness of common property-based self organisation in commons governance (Ostrom 1990; Agrawal 2001), especially when some design principles are subsisted and upheld (Lee and Webster 2006; Colding et al. 2013; Ling et al. 2014b). In general, since the local residents volunteered to form a committee to co-manage a POS, it is being reflected that the committee was
reasonably willing and active in investing their time and effort to succeed the communal regime. From the transaction cost perspective, it shows the low cost of local community participation and involvement. Additionally, such voluntary formation also reveals their environmentally sensitive intention, concern and need toward neighborhood protection. This is possible since they might have a better understanding and sensitivity of their current needs, either culturally or socially (e.g. safety and comfort). Henceforth, they were willing to participate and voice out their necessity to the government (see Tucker 1999; see also Abdul Karim and Abdul Rashid 2010 residents’ high satisfaction and acceptability of their local neighbourhood association formation). The following paragraph extends the discussion to how the ideas of low transaction costs and somewhat high incentives for providing quality local POS governance (i.e. feasible position in monitoring, reporting to government, cooperating among users, etc.) are arrived at.

For local resource domain factors, the size and boundary of Sabah residential POS is clearly defined, considerably small, has low mobility and some are strategically located, whereby from a proximity concept, it is easier for the community who live in that certain area to execute their above collective task (Ostrom 1990; Webster 2007). Via registration, the residents (committee) are assigned with clear and recognised rights to co-manage the park that is two of the key criteria or principles of Ostrom’s successful commons governance (see Ostrom 1990). More importantly, the assigned duty in management is viable as it merely requires informal monitoring, reporting of issues to the government, and no direct monetary costs are required for maintenance. Additionally, the community is led by a local committee president who is responsible for coordinating and directing others in managing the POS. Thus, it is believed that it may provide a more organised and systematic group to cooperatively yield better POS governance (see Van Laerhoven 2010 for leadership attribute importance in commons governance). Moreover, an appreciation award is bestowed by the local government on the successful community, in hopes that this may somehow motivate them to continually strive to provide greater good (see Van Miltenburg et al. 2014, the more the groups are rewarded, the more likely they thrive to succeed the management).

Nevertheless, findings also demonstrated that quite a number of POS with community involvement ensued in poor quality, although it may not be prevailing. This implies that some communities failed or were passive in monitoring and responsively reporting the POS problems to the government. This likely resulted from community heterogeneity; i.e. the locals consist of various backgrounds (differences) in terms of socioeconomics, culture, race, beliefs which could

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59 Being a volunteer in the first place to register as committee for POS management for better neighbourhood milieu quality, they may be unlikely or not incentivised to be involved in overusing.

40 According to Ostrom’s (1990) eight design principles in governing the commons, the two criteria in this local context are referring to as her 1st and 7th principles, i.e. clear community rights and discerned rights as well.
lead to conflicts. Hence, getting the community to agree unanimously on certain issues, may be difficult. Another factor could be the large size of the community group and lack of experience and knowledge, which is a hindrance to effective communication, interaction, trust and social ties among the residents (Olson 1965; Ostrom 1990). Such community features escalate to a difficulty in cooperation; hence, passiveness and shirking may likely take place similar to the above management corporation issues (Tiun 2006). Another reason is the lack of stringent action or punishment imposition and execution. Those voluntarily formed groups do not feel any ‘fear’; hence, they choose to shirk and act irresponsibly being in the state of idleness (see, Van Miltenburg et al. 2014). Furthermore, this co-management of POS does not bring the community any pecuniary gain or other “inviting” forms of benefits. Despite the existing governmental non-pecuniary awards, this still may not sufficiently pose as a “motivating” trigger to communities. Thus, communities may still feel disincentivised to actively engage in such management. In addition, they may not highly depend on its existence as no lucrative return is generated. Thus, quality issues may not be their concern. Besides, although it is argued that the assigned tasks are not arduous, at times, such local committee is assigned to be in charge of more than 1 neighborhood that consists of 2 or more POS. This correspondingly increases the constraints faced by the management. Other factors, like excessive and incompatible governmental intervention in management rights, lack of well-defined sanctions on shirkers, and the absence of a proper platform in resolving conflict, all can be discovered in the current local community POS, and may stymie the efficiency of self-organisation (Van Laerhoven 2010; Ling et al. 2014b).

For the findings on the attribute of POS title deed transfer, the transferred POS are more prioritised and furnished. For example, redevelopment or upgrade of the existing transferred POS can result in better equipped, bigger, and accessible parks, by a special allocation of the federal government to the local government. This likely happens due to the subjective perception of the local government on title deed, particularly security of right. With the documented title deed transferred to the government, they may perceive the tenure as more tangible, secured, guaranteed, and unchallengeable from the risk of dispossession (Markussen 2008; Payne et al. 2009). Thus, this incentivised them to invest more although, all these aspects have been de jure gained so long as the POS site handing over is executed (see 2nd phase of Table 1). However, despite all the initiatives by the government upon the POS title possession, the poor quality of transferred POS is still evidently observed. The reason being, since it is held and managed by the local government, it is unavoidably likely for the transferred POS, to not escape from the dilemmas of state-property regime, such as budgetary, financial loss and poor long-term management issues (Foster 2011). Despite the one-off and short-term upgrade that may render good space initially, without a consistent and long-term maintenance, such temporary well-equipped conditions of POS will nevertheless deteriorate. This confirms that efficient and long-term management is paramount in ensuring sustainable quality of POS (Colding et al. 2013).
Finally, for the attribute of POS site transfer period to local government, our finding suggests that the current local government’s POS governance is problematic. By espousing numerous previous scholars’ findings, as well as similar empirical state regime issues findings above, it alleges that local governments are likely to encounter various management issues, such as red tape, deficiency of resources (e.g. going over budget), technical issues, corruption, less environmental priority, and sensitivity (Foster 2011; Colding et al. 2013). When these issues emerge, local government may opportunistically start delaying or neglecting the POS maintenance and management. As this government dilemma is prolonged, along with several rounds of over-consumption, the space may eventually be in total disuse or desolated. Echoing Ali et al.’s (2010) statement, executing timely maintenance would be time- and cost-saving compared to a long deferral of maintenance, which could lead to more damage, normal wear and tear or permanent destruction. Hence, time, labour and rectification costs are increased too. Worse still, such accumulation due to lack and deferral of maintenance may induce the government to neglect it, especially when an overwhelming number of POS maintenance is altogether managed by only one centralised local council. This is corroborated by Bromley and Cernae’s (1989) assertion, “… the state’s reach exceeding its grasp.” Many states have taken on far more resource management authority than they can be expected to carry out effectively…” Besides, in tandem with the antecedent, long inefficiency of management of local government may actually worsen user consumption behaviour; i.e. it ‘invites’ more severely defective utilisation. According to the broken windows theory (Wilson and Kelling 1982), unmanaged little litters tempt or increase the tendency of users to treat the space as a dumping site or an idle site that may be misused for squatting and crimes activities. From the empirical observations, particularly the category of POS site handing over before year 2000, we found that some unmaintained and overgrown grass and long-neglected spaces were misused and turned into illegal communal car-parks and dumping sites. Also, a few groups of vagabonds or squatters dwelled at these spaces, especially those that were hidden and secluded (see, influx of Filipinos immigrant’s issues in the introduction section above).

6. Conclusion and recommendations

In conclusion, interrelated empirical findings are emphasised on the following theoretical findings: (i) generally, institution (property-rights arrangement) does matter in the residential commons’ governance, in the sense that some institutional attributes are significantly correlated with POS quality; (ii) land titling on POS does not necessarily guarantee its good quality; (iii) misaligned state-property regime likely results in poor quality of POS; (iv) both common-property and private property regime could likely lead to good POS quality compared to state regime; (v) management (control, monitoring and maintaining) right on POS is the key, rather than consumption pattern, probably in determining the POS quality. In extension to the last finding, this study focuses on diversity of property
regimes, which are all colligated with some governance issues (i.e. all types of local regimes are likely having mismanagement and overconsumption issues), and is inspired by Feeny et al. ’s (1990) contention that, regardless of types of regimes (private, state or common-property), as long as effective regulation and management can be efficiently provisioned to govern the utilisation and access of resource of which its good quality is being sustained, then the regime is considered successful. Hence, these discoveries achieved our set objective. However, some methodological limitations were encountered, whereby all these findings are precluding us to draw a definitive and conclusive causal-effect inference. Thus, a longitudinal study via a more rigorous methodology (e.g. in-depth interviews and questionnaires surveys) is necessary. Due to data unavailability, although the sample of POS was homogenised as best as possible, we did not manage to take other potential confounding variables into account that may affect POS utilisation and management; thus, its quality, such as spatial dimension (e.g. residential density and shape) of POS and socioeconomic background of residents (e.g. education and income level). Hence, prospective research in studying those germane variables is required and a predictive model can be created via an advanced analysis, such as logistic regression.

Nevertheless, some strengths of the study were discovered, too. One of them is the quality of POS was objectively measured. This study did not rely solely on self-reported data and data from a third party, which can effectively reduce biases and validity issues. Besides, this study attempts to address the literature gaps on institutional property-rights on contemporary commons via the above findings. In doing so, two salient points are offered by this study: (i) local empirical contribution on effects of Sabah’s diverse institutional rights on POS governance and quality; and (ii) among the four variables of local property-rights, identifying the most influential and highest predictive ability of an attribute on POS quality. Furthermore, our findings may provide valuable messages and insights to practitioners, particularly local policy-makers (i.e. land officers and local governments), that often-neglected institutional rights assignment is a sine qua non in shaping the POS outcome by suggesting to them that the current POS property-rights arrangement appears problematic. This is especially true when it is held as state property. Thus, an idea of property-rights structure re-engineering is postulated (Webster 2002). In addition, this study brings awareness of the importance and advantages of privatisation and communal regimes in governing the POS, especially management rights that must be adaptively aligned (Ostrom 2005). Therefore, more empirical research, particularly on the applicability of the collective action model in POS, as well as a means to bolster collective thinking and actions with the aid of the Institutional Analysis and Development framework on examination of inter-related meta-variables (Ostrom 1990), Home Owner institution

41 However, such prevalence can only infer a causation between the above variables (Mann 2003).
Do institutions matter in neighbourhood commons governance? (Nelson 2002), and Williamson’s ex-post contractual opportunism governance (Williamson 1993), are required (Ling et al. 2014b). After all, hinging on property-rights configuration, the theory of economic club good should be incorporated (Buchanan 1965) to scale down the CPR-based POS dilemmas. Such institutional factor assessment should be imperatively taken into account by the policy-makers and enforcers, as good POS quality can be economically, ecologically and socially beneficial for other stakeholders, such as public users and residents. These benefits include health improvement, better social inclusion and networking, better relationship and communication. Economically, it may generate some side income, as well as increase neighbouring property values, and ecologically, it can reduce surrounding temperature and lessen pollution.

Literature cited


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