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Abstract:

Purpose
– The purpose of this paper is to highlight the international significance of multi-owned developments (MODs), present an MOD life cycle conceptual model and review the range of identified peer-reviewed empirical research papers.

Design/methodology/approach
– The paper utilises an exploratory qualitative methodology to collate and analyse literature focusing on MODs. From the 403 research papers identified 96 peer-reviewed empirical research papers specific to MODs were examined. A MOD life cycle model has been conceptualised to facilitate a content analysis of the reviewed papers.

Findings
– The findings of this paper highlights the gaps in knowledge pertinent to MODs and outlines avenues for future research that argues for the need to develop a more holistic and multi-disciplinary research approach.

Research limitations/implications
– The research is based on reviewing published papers as identified using specific search terms.

Originality/value
– The paper makes an important and innovative contribution to the body of knowledge by developing a MOD life cycle model and identifying the range and scope of peer-reviewed empirical research literature published on MODs. Understanding the MOD life cycle phases and the gaps in the literature can enable academics from a multitude of disciplines to enhance this field of inquiry in order to better understand this emergent property type.
Introduction

Internationally there is a growing trend towards people living or working in multi-owned developments (MODs) (Chen, 2011; Easthope and Randolph, 2009; Harris, 2011; McKenzie, 2006; Townshend, 2006). “MODs” are a type of property development that comprise at least two lots and communally owned property with a separate entity created to manage and enforce the rules of the entity (e.g. homeowners association, body corporate, owners corporation). This legal structure of tying individual lots to communally owned property is being employed in a range of development contexts, including: commercial, residential, industrial, tourism properties and even cruise ships.

Growth of the MOD approach has occurred despite shortcomings that appear endemic to the model (Blandy et al., 2010). For example, the legal obligations placed on owners to manage and govern these, often large, privatised communities appears to be a major contributor to the complexity of MODs in most jurisdictions. Further, the sheer scale and tiered structuring of some schemes, together with the existence of complex infrastructure that is communally owned, such as decentralised water management systems, can detract from the functionality and viability of these developments. These factors, combined with the large number of stakeholders that can be involved in a MOD provide researchers with a plethora of research issues to examine. Despite this, there has been negligible effort directed to synthesize this growing body of academic literature.

The purpose of this paper is to examine the range and scope of existing MOD research utilising the proposed MOD life cycle model as a framework to synthesize and identify research gaps. First, an overview of the proliferation and significance of this property type is provided. Second, the paper examines life cycle theories and their application to property development and specifically MODs. Third, the research methods utilised are discussed. In total, 96 peer-reviewed papers were analysed. The research findings framed by the proposed six stage MOD life cycle are then discussed, with future directions for research outlined.

Background

Population growth and urban consolidation, in many nations, has led to increasing densities and forms of real properties that mirror a compact city approach (Easthope and Randolph, 2009; Randolph, 2006). Within this context, MODs are an important form of real property to study, as they impact on many individuals and communities socially, economically and environmentally. Whilst difficult to accurately determine, evidence suggests that approximately 20 per cent of the USA population reside in MODs (Community Associations Institute, 2011). In Australia, forecasts suggest the proportion of the population housed in MODs will mirror those of the USA in the not too distance future (Easthope and Randolph, 2009).

Although Australian cities have been littered with housing units since the 1930s (Randolph, 2006), the law did not provide for individual lot ownership whereby freehold title could be obtained to a specific lot within a building. It was not until New South Wales introduced legislation in 1961 that allowed for individual lot ownership did the city of Sydney in
particular, see a proliferation of higher density apartments (Randolph, 2006). Today, there are approximately 1,944,125 strata and community lots in Australia, of which 81.3 per cent are residential or mixed use lots (Easthope et al., 2012). Extrapolating average household size of 1.9 individuals, based on Australian Bureau of Statistics 2006 Census data, residential strata lots are home to approximately three million people (17.2 per cent). As of July 2011, the state of New South Wales had registered 595,362 residential and mixed use MOD lots, with 81.5 per cent of those lots located in the greater Sydney metropolitan area (City Futures Research Centre, 2011). From July 2010 to July 2011, MOD lots in New South Wales had increased by 4.9 per cent (Easthope et al., 2012). According to Randolph (2006), within the next 20 years, approximately 45 per cent of Sydney's housing stock will be higher density. Other cities around Australia have also adopted urban consolidation strategies that prefer infill development over continual suburban spread. With the prospect of limited housing choice in urban areas in the future, it is not only critical to understand the challenges faced by residents living in a MOD environment but also to seek solutions to overcome these challenges. It is also important to acknowledge that the impact of MOD moves beyond residential properties as many people work in factories, retail shops and offices that are also MODs.

Proliferation of this property type has resulted in many industry innovations, particularly with respect to design and structure. In terms of design, MODs have been categorised by; “gatedness” (gated or non-gated) (Blakely and Snyder, 1997; Grant, 2005 b; Le Goix, 2005), density (high, medium or low) (Kupke et al., 2012; Randolph, 2006), size (generally measured by number of lots) (Hui, 2005; McHugh et al., 2002), scalability (horizontal or vertical) (Johnston et al., 2012) or their use (residential, commercial, tourism, mixed-use, etc.) (Grant and Perrott, 2011; Guilding et al., 2005; Pacione, 2006). In terms of structure, decisions in relation to tenure (e.g. freehold, leasehold), title (e.g. tenants in common, company title, strata title), and scheme arrangements (e.g. basic, layered) add to the range of forms this property type can assume.

The challenges that arise in MODs are as diverse as their design and structure. Some of the challenges faced by MOD stakeholders include: the curtailment of tobacco smoke exposure (Wilson et al., 2011), owner apathy (Guilding et al., 2005), management of building defects (Christudason, 2007; Easthope et al., 2009), decaying properties (Warnken et al., 2003), competing stakeholder interests (Guilding et al., 2005) and ensuring sound fiscal management (Lujanen, 2010). Such challenges conspire to generate a dynamic context that poses research opportunities for academics representing a broad cross-section of disciplines.

Property research draws primarily on related disciplines such as economics, geography, planning, sociology and politics (Guy and Hanneberry, 2008). However, issues arising in MODs broaden the pertinent fields of enquiry, enabling theories and approaches from areas as diverse as business, accounting, management, criminology, health, psychology, tourism and law, to name just a few. The incorporation of the separate entity to manage a MOD invites a number of new perspectives into property management discourse. For example, psychological theories can be drawn upon to advance understanding of the challenges faced by volunteer members in managing a MOD. Similarly, corporate governance theories can inform research concerned with identifying an optimal MOD governance model.

Although researchers from disciplines such as planning, geography, sociology and urban studies have provided significant contributions to the MOD literature in recent years, particularly with respect to the emergence, functioning and form of gated communities (Blandy and Lister, 2005; Grant, 2007; McKenzie, 2005; Pow, 2007), little attention has been
directed to the life cycle of a MOD or the links between the various life cycle stages and particular challenges arising within each stage. This may be due to the interdisciplinary research perspective that is required to undertake such analysis. We believe that such an initiative is desirable, as investigation of challenges during each stage of the life cycle produces insights and uncover potential avenues of enquiry for researchers representing a broad set of disciplinary perspectives not generally associated with property studies. Therefore, it is timely to draw on the proposed MOD life cycle model to map out current research achievements.

The life cycle concept

The life cycle model is well established in science disciplines, representing a temporal based model of evolution. However, the model has been adapted to social, organisational and management science fields over the last half a century. The premise of each of these life cycles is the representation of a product and/or service, industry and/or firm, from conceptualisation, adoption and growth through to eventual removal or rejuvenation (Abernathy, 1978; Abernathy and Clark, 1985; Bennett and Cooper, 1984; Buzzell and Cook, 1969; Cao et al., 2009; Day, 1981; Kotler, 1965; Levitt, 1965; Potts, 1988; Rink and Swan, 1979). The model provides an analytical framework to examine the relative success or failure of a product's market introduction, strategies for enhancing pricing, marketing or manufacturing efficiencies, and determining when a product should be discontinued.

A significant research focus has been on the stage gate process of product development. In such studies a biologically inspired concept of “life cycle” is used that identifies four phases: birth, growth, maturity and decline/revival. Within an organisational context, similar stages of life cycle development occur although defined contextually. More recent models of PLC have simplified these stages into beginning of life, middle of life and end of life phases (Cao et al., 2009; Kiritsis et al., 2003). Beginnings of life phases often encompass design and manufacturing stages. Middle of life phases follow a product's emergence and see wider purchasing levels amongst customers. The final phase, end of life is where a customer has completed their use of a product and it is decommissioned.

A similar life cycle or stage gate sequence approach has been used when discussing the property development process (Birrell and Gao, 1997; Fisher, 2005; Syms, 2002). However, there is no clear consensus as to the exact number, or classification, of these phases. Birrell and Gao (1997) provide a generalised model of the property development process categorised into 14 phases. Each phase is defined by “decisions, agreements, contracts, permissions”, which do not follow a particular sequence, but are influenced by a range of internal and external factors such as economic, market conditions or political decision making. Lim and Mohamed's (1999) development project life cycle identifies six phases: conceptual, planning, design, tender, construction and operation. Both of these life cycle models recognise beginning of life phases, but fail to recognise end of life phases. This is due to the nature of a development and the removal of stakeholders, such as property developers and project managers, once a project's development has finished construction. A different perspective evident in Tae et al.'s (2011) study assessed the life cycle of apartments in Korea. Tae et al. (2011) classified the building life cycle into construction, operation, maintenance and dissolution/disposal stages. This research draws heavily from life cycle assessment (LCA) models, which aim to estimate the environmental effects caused by products and processes (International Standards Organization, 1997, 2006; Reap et al., 2008; Tae et al., 2011). The LCA phases of this model provides a more detailed perspective in the middle and end of life.
phases, whilst omitting the beginning of life phase evident in property development life cycles.

To date there has been no life cycle model that classifies the phases that comprise a holistic life cycle of a MOD development. Therefore, this paper makes a significant contribution to the MOD literature by proposing a conceptual model of MOD life cycle, identifying the range of existing research within these phases and identifying areas for future research.

MOD life cycle

The MOD life cycle conceptualised in this study is not a developer-centric model, therefore does not conclude with the completion of construction. Although the main development processes finish upon the conclusion of construction, there are a number of other staged processes that continue until the development is no longer sustainable or has reached the end of its viable life. There are a range of stakeholders, aside from the developer, that engage in the different phases subsequent to construction completion. Consequently, we propose there are six stages comprising the MOD life cycle: planning, construction, promotion and sales, transition, occupation and termination. Although identified as discrete stages, in reality, these phases are not mutually exclusive. For example, a basic MOD which is delivered over a relatively short period of time (e.g. single high-rise building), begins with planning which will frequently overlap with the sales and promotion phase, the transition phase and to a lesser extent the construction phase. The transition and sales and promotion phases will also often overlap with the occupation phase. In more complex schemes, delivered over time (e.g. Greenfield sites), in addition to overlaps in the basic model, construction and occupation would overlap and the planning phase will be extended and may overlap with construction.

The six phases can be further distilled into three broad sequential stages: beginning of life, middle of life and end of life. During the first stage, the development is created and sold (subsuming the planning, construction, promotion and sales and transition phases). During the middle of life stage, the MOD is occupied. The end of life stage sees the MOD demolished, renovated or redeveloped. These phases and stages for the basic MOD life cycle are diagrammatically depicted in Figure 1 and discussed in more detail.

Beginning of life stage

Planning

Integral to all property development, planning “is the process of informed decisions associated with plan-making and implementation, with regard to social, economic and environmental aspects of particular spatial arrangements” (March, 2010, p. 109). Developers and planners are in a powerful position to shape cities, towns and communities in the pursuit of creating sustainable, vibrant and functional communities (Kenworthy, 2006). The planning phase of the MOD life cycle incorporates a range of events that include: site identification and investigations, market research and feasibility analysis, financing and acquisition, design, and adhering to government approval processes (Birrell and Gao, 1997; Healey, 2007). Unlike other forms of development, the planning phase of most MODs overlaps with other life cycle phases, mainly due to financing constraints and the need to secure off-the-plan sales prior to construction. The planning phase also overlaps extensively with the occupation phase, especially in staged schemes.
Promotion and sales

Post global financial crisis financiers, in most jurisdictions, require pre-sales of lots prior to finance approval and construction. The promotion and sales phases involve the original owner (developer) marketing, negotiating and executing sales contracts with potential buyers. In most jurisdictions, there are also disclosure statements that must be submitted to buyers at the time of contract of sale negotiation. The legal disclosure requirements that are imposed on developers vary significantly across jurisdictions. Requirements vary from disclosing only a scheme's bylaws, to disclosing budgets, maintenance forecasts, service and other agreements, and management statements.

Construction

The first phase of construction in a typical Greenfield low density MOD may involve the clearing and installation of civil infrastructure and essential services, such as roadways, water and electricity. This is followed by a second construction phase during which individual lot owners engage independent builders to construct their dwellings. In other types of MOD, construction may be staged, signifying building construction is undertaken over an extended period of time, often on a precinct by precinct basis. In these developments, residents will often take up building occupation well in advance of the construction commencement of all precincts comprising a scheme.

Transition

In the context of MODs, the term “transition” refers to that period of time when governance control and management responsibilities for an MOD are transferred from the developer to the lot owners collectively (Foundation for Community Association Research, 2003). Transition processes begin in the MOD's planning phase, at the point when the developer starts to make decisions that will affect the future operational structure of the development. Such decisions might relate to the establishment of service utility and facility contracts, management contracts, initial development budgets and bylaws. Within this phase, the developer is responsible for governance and management decisions by virtue of the role that is performed. That is, the role of the original owner, the legal entity (e.g. body corporate) or lot owner or lot owners' representative (by proxy or powers of attorney). In most jurisdictions, the end point of this phase is statutorily determined by a provision that stipulates when the developer can no longer control decisions.

Middle of life stage

Occupation

The occupation phase begins when the sales of individual lots are legally settled and residents move into the MOD. The occupation phase is the middle of life stage of the MOD life cycle, as it is the period in which the development is used for the purpose that it was designed for. Dredge and Coiacetto (2011) note that much of the strata title (i.e. MOD) literature has a sociological, economic, governance and management approach which falls within this phase. As places of residence or business activities, MODs constitute social spaces. The self-governance obligation, in addition to community issues arising during this phase, triggers a multitude of sociological issues.
End of life stage
Termination

The termination phase occurs when an MOD either reaches a point where the infrastructure (the buildings and common facilities) have decayed and there is a need to either rejuvenate (renovate), or to demolish in order to facilitate site redevelopment. Prior to any redevelopment or demolition of a site, the ownership of a scheme must be terminated and the legal entity dissolved. Legal processes involved in actioning a termination can be difficult and slow, as most jurisdictions (e.g. Australia, USA) require unanimous resolution of the owners to terminate a scheme. Legislative innovation in Singapore, Hong Kong and some states in the USA has facilitated a reduction in the proportion of owners that are required to terminate a scheme (Easthope and Randolph, 2009). However, a significant proportion of MODs are entering their end of life stage and research that can better facilitate termination is becoming increasingly important to the sustainability of future urban form.

Methodology applied in the literature search
Section: ▲▼

An exploratory qualitative research methodology utilising a three-stage search process was adopted to collate the MOD literature. First, a lexicon of terms was developed to identify the range of terms used when referring to MODs due to the range of terms used internationally (as evidenced in Table I). The Australian domicile of the authors has resulted in primacy afforded to the Australian context in this analysis.

Second, these terms, together with more generic terms such as: high-rise apartments, mixed use flats, serviced apartments, apartments and mixed ownership, were used in a search of databases (Proquest, Informit, Science Direct and Google Scholar). The database searches ensured broad capture of works concerned with MODs. Key academics known to be active in the field were also searched, such as: Blandy, Christudason, Easthope, Glasze, Grant, Guilding, McKenzie, Randolph, Sherry and Webster. Additionally, a specific search was made of the following journals: Housing Studies, Property Management, Urban Policy and Research, and Urban Studies. These journals were selected on the basis that they are internationally focused, represent a broad range of disciplines and their aims cohere with issues relevant to the field of MODs. Over 403 journal papers were identified in the initial search.

Third, all of the papers obtained during the second phase were entered into endnote. A search for duplicate papers was then undertaken. An Ulrich search was then utilised to identify only peer-reviewed journal papers and then further refined to include only empirical research papers. A total of 96 peer-reviewed empirical research papers were identified.

An iterative two stage content analysis process was then adopted to analyse the corpus of published works. First, a literature matrix by primary author discipline, MOD term, main themes, authors, methodology and jurisdiction was undertaken. Papers specific to MODs were then further categorised according to MOD life cycle category, research theme, MOD terminology, authors, jurisdiction and methodology. Code classification by life cycle category was carried out by one author, following detailed group discussion, to ensure consistency of categorisation (Yoo et al., 2010). Following this an inter-reliability check was conducted by a second author.
Findings and discussion

A significant number of authors, both professional and academic, contribute to the MOD literature (approximately 230). However, less than a quarter (96 or 23.8 per cent) of the papers identified were peer-reviewed, empirical research papers with most published in the last decade (approximately 90 per cent). These findings are unsurprising given that the study of “property” is not a traditional academic discipline. Although a number of universities deliver undergraduate and postgraduate property related degrees, very few offer MOD-specific programs or courses. As Getz (2008, p. 405) acknowledges new academic fields emerge when both professional practice warrants the implementation of courses or degrees at a university level and “[w]hen a critical mass of students, programs, and teachers is reached”. Currently in the USA and Australia, limited tertiary education courses are directed to or even incorporate the study of MODs. University educated professionals at the centre of the MOD sector are primarily from either the disciplines of business, law or planning. The largest professional stakeholder group, managers, either have business-based disciplinary education or participate in educational courses for accreditation via industry institutes or vocational training. The industry itself, in Australia at least, does not require formal industry-specific educational qualifications to become a manager. Furthermore, there are a number of conferences focusing specifically on MODs, although primarily practitioner (e.g. lawyers and managers) as opposed to academic focused.

Like other emergent fields of inquiry, knowledge creation in this arena has been ad hoc (Getz, 2008). It appears that the proliferation of this property development type, diversity of challenges that arise, multitude of stakeholders involved and the lack of academic investigation in the development of programs, dedicated journals and academic conferences, has contributed to a siloed and fractionised approach to research. This is evident from the review of literature undertaken in this study.

The MOD research literature derives from a diverse set of disciplinary perspectives that include: anthropology, architecture, built environment, business, construction, economics, environmental science and management, geography, law, paediatrics, planning, public policy and administration, real estate, social science, sociology, tourism and urban studies. However, the geography, planning and urban studies disciplines dominate with a third (34) of the journal papers authored by researchers from these fields. These disciplines have dominated the literature as the impact that these developments (due to size, scale and proliferation) have on local and region communities and the landscape is extensive. MOD proliferation has also impacted upon local government infrastructure responsibility and resource management, which in turn informs the way in which planners make decisions in the creation of towns and cities.

The diversity of disciplinary perspectives combined with the breadth of jurisdictions represented has resulted in a wide range of terms used to describe MODs. The MOD form most frequently referred to in the papers was gated communities (38 or 39.6 per cent), followed by high-rise or high(er) density (17). “Gated communities” was a term used in studies conducted in a broad range of jurisdictions including: the USA, UK, Argentina, Australia, Brazil, Bulgaria, Canada, Chile, China, Indonesia, Israel, Poland, Portugal, Saudi Arabia, Singapore, South Africa and Turkey. The terms high-rise, high density, or strata were used almost exclusively in the Australasian region (e.g. Australia, Hong Kong and Singapore). Although the authors acknowledge that the use of a term like MOD may be too broad and all-encompassing when conducting research on one specific MOD type (e.g. high-
rise building), the lexicon of terms used throughout the world creates barriers for researchers when attempting to uncover or identify pertinent research in this area. As more research is published in this field it will become more onerous to ascertain, with any certainly, the breadth of research on MODs and knowledge gaps.

According to Getz (2012), it is difficult to ascertain in new fields of inquiry “what is being argued, theorized, concluded, or questioned” (p. 182) without first mapping out the literature and assessing the methodologies, concepts, themes, and topics. Table II addresses this concern by providing an overview of those papers that relate to a particular phase of the MOD life cycle.

Approximately 45 per cent (43 of 96) of analysed papers aligned with a MOD life cycle phase. The occupation stage dominated, corroborating Dredge and Coiacetto's (2011) findings that strata title research has been concerned with sociological, economic, governance and management orientation of occupation. Popular themes within the occupation phase include resident satisfaction, MOD living experience, nuisance issues (noise, tobacco exposure), stakeholder relationships, disputes and conflicts, management issues, building defects and bylaws. For example, Appold and Yuen (2007) and Whitzman and Mizrachi (2012) have contributed to MOD occupation phase research by examining the experiences of families and children living in high-rise environments. Furthermore, Christensen and Wallace (2006) undertook research focused on the causes of disputes in a MOD context. Studies of this nature have the potential to promote understanding that can lead to better planning, design and construction of MODs.

Whilst the MOD occupation phase has generated the most research interest, further research opportunities relating to this phase are still evident. As the occupation phase signifies the occupation of MOD space by individuals, this phase carries the multiplicity of challenges surrounding living issues with the added complexities that arise from close quarter living. Future research focusing upon stakeholder relationships, owner participation and body corporate or owners corporation committee responsibilities, conflict resolution and disputes, legal compliance and community governance models are needed. The sociological aspects of community living, such as developing a “sense of community” and facilitating culturally and demographically diverse communities also require future research attention. Some examples of possible research questions that could be pursued include: what are the main causes of non-participation by owners in a scheme?; how would compulsory education of committee members impact upon committee participation and dispute resolution?; what measures can be introduced to minimise neighbour intolerance?; to what extent do committees comply with the law?

Research into sustainability inclusions that would enhance MOD liveability is also required. One possible focus concerns the potential implications of decentralised water management systems and other sustainability measures. In undertaking research of this nature, an understanding of the legal framework and how management and governance decisions are made would be fundamental.

The promotion and sales phase is the next most commonly researched phase of the life cycle. Interestingly, extensive commercial research directed to the significance of this MOD phase has not been matched by a similar quantum of academic research. Academic research has been limited to property valuations, marketing strategies and disclosure requirements. The literary emphasis of property valuations has been on the added value of, “gating” (Bible and
Hsieh, 2001; Pompe, 2008; LaCour-Little and Malpezzi, 2009). Research that can better inform the conduct of this life cycle phase is important, as it is during this stage that potential purchasers commit themselves to becoming a key stakeholder (owner) in a MOD. This is a challenging purchase decision, as purchases are frequently made off the plan with no opportunity to physically inspect the built form. Potential avenues of promotion and sales research that could be beneficial for the sector include: consumer behaviour and buyer targeting (investors vs prospective owner occupiers), marketing strategies employed, buyer inducements (including rental guarantees and levy ceilings for initial ownership periods) and agent representations.

Disclosure statements, which are frequently debated in the MOD industry, have also been the subject of research within the promotion and sales phase. Hetrick (2008) discussed the bombardment of disclosure documents in many jurisdictions and the ineffectiveness of disclosures in protecting consumers. In a study focused on serviced schemes, Riley and Li (2009) examined the need for commonwealth and state regulatory requirements for disclosure to be more synergistic and consistent. Valuable insights can be derived from research that examines the issuance, adequacy and effectiveness of disclosure statements. In addition, the legal advisory process invoked in connection with MOD sales would also appear worthy of academic research.

Whilst, engineering and construction disciplines have well-established bodies of literature, especially in relation to high-rise developments, a limitation of this research is the lack of MOD journal papers aligning with the construction phase. MOD research that focuses on construction issues is a necessity. Particularly, within the MOD context research is required to: uncovering and rectification of building defects, certification of works, issues confronting residents living in MODs while construction is on-going, and issues relating to the non-completion or revised design of staged MODs, or construction issues arising from the rejuvenation of existing buildings. Interdisciplinary informed research that is directed to the MOD construction phase would likely provide considerable insights into how some adverse situations can be mitigated. For example, ensuring residents are well informed about construction progress, anticipated disturbances and also using materials that minimise noise or smells can lessen the propensity for tensions arising between residents and a MOD developer.

This study identified limited research aligning with the planning, transition and termination MOD life cycle phases. Themes evident in the planning phase included planning conditions (specifically non-compliance of conditions and development control), privatising roads (i.e. the planning implications of privatising roads) and strategic planning (i.e. planning targeted towards sustainable growth and preservation). These findings support Dredge and Coiacetto's (2011, p. 425) claim that “research directly relating to strata title and its impact and relevance to planning is quite limited”. This is concerning as the quality of planning decisions carry implications for all ensuing MOD life cycle stages. Decisions made relating to legal titling, management and governance structure, the implementation and ownership of the equipment and infrastructure, are vital to the success of a MOD. Johnston et al. (2012, p. 12) claim “some [MOD] schemes are never able to overcome the issues created at the beginning and continue to suffer from dysfunctionalism”. Well informed planning is a key investment that has the potential to mitigate negative implications for a MOD structure and the range of stakeholders that own lots, live in or work in the structure. Therefore, research aimed at addressing planning concerns within the MOD life cycle will have significance for industry.
The transition phase, concerning transference of developer control and ownership to lot owners, is an under-researched area (e.g. Blandy et al., 2006). Themes evident within the transition phase were concerned with the transfer of control and power (specifically noting issues stemming from control retained by developers) and governance planning (legislative deficiencies that impact on property management). A tenet of Blandy et al.'s (2006) research examines the way that power embedded in the developer can have long-term consequences for lot owners, despite ownership transfer. New owners can be reliant on other stakeholders to understand the legal requirements bestowed on them to manage their development, how the development operates and is to be managed and maintained, contractual arrangements that need to be established, development of financial procedures, etc. Issues relating to a scheme's establishment, the turnover of control and power, conflicts of interest and, establishing governance and management frameworks, all constitute potential avenues for future research. It is often during the transition stage that issues relating to building defects can manifest. If building defects are not appropriately handled by the various stakeholders, considerable tension and conflict can manifest for an extended period.

Impediments to rejuvenation and collective sales were emergent themes relating to the termination phase. Ageing MOD stock, approaching the end of life stage, constitutes a challenge that confronts many owners and bodies corporate. Decaying and ageing high-rise buildings and impediments to renewal were explored by Hui et al. (2008) in relation to Hong Kong and Warnken et al. (2003) in relation to tourism properties in Australia. As building standards and requirements change (e.g. fire safety, health and safety, environmental sustainability measures) it can become prohibitively expensive to accommodate or retrofit the building. Challenges also often arise in these ageing developments when one or several owners refuse to sell, stifling building demolition and consequent site redevelopment. Balancing owners’ proprietary rights against the need for site rejuvenation is an area worthy of specific academic enquiry.

The proposed MOD life cycle model utilised as a framework to collate and analyse existing research in this paper extends property development and project management life cycles beyond the completion of construction phase to include the middle and end of life stages. This holistic MOD life cycle model has yielded insights into some significant MOD research activity patterns. It is apparent that some stages of the MOD life cycle have attracted considerable research attention while other phases have attracted negligible research attention. Use of the MOD life cycle model in this manner has also highlighted that there appears to be a lack of research directed to uncovering challenges that arise within each stage of the MOD life cycle and the potential solutions that might overcome these challenges.

Understanding the challenges that exist in each of the life cycle stages could better inform decision makers. Alleviating problems in design during the beginning of life stages, by taking into account common conflict issues which occur during middle of life stages, can achieve much in facilitating a more harmonious environment. From a research perspective, consideration should be given to the life cycle and the interaction between the life cycle phases in order to enrich this new field.

Table III overviews the 53 papers that do not align with the MOD lifecycle model. Strong themes apparent in this subset of the literature include: the emergence of MODs (gated communities in particular), issues relating to community segregation, social inclusion and integration, market characteristics and issues relating to crime and fear of violence as a rationale to gate. A number of papers also examined legal frameworks, structures and
policies. In analysing the collected data, many researchers drew comparisons with non-MOD properties.

The findings indicate that descriptive case studies dominate the literature. Exploratory research is common in nascent fields of enquiry (Stebbins, 2001; Steinle, 1997). As Edmondson and McManus (2007, p. 1162) note “[b]ecause little is known, rich, detailed, and evocative data are needed to shed light on the phenomenon”. Therefore, descriptive case studies and qualitative research techniques such as interviews and observations allow researchers to describe and understand the phenomena. Much of the existing research is also aimed at justifying the proliferation and rationale for MODs (particularly gated communities). Sociological (e.g. segregation) and psychological (e.g. fear of crime) considerations have also emerged as primary topics explaining the rise in MODs. Interestingly, consumer demand or other business management factors were generally not researched, despite the economic importance for development feasibility and business sustainability.

Conclusion

Rapid urbanisation and continued population growth is presenting challenges and opportunities for city planners and property developers. This paper has sought to identify the range and scope of existing MOD literature, both within the life cycle and wider discipline-specific context. Exploring and investigating MODs from a holistic life cycle perspective has the potential to unravel numerous avenues for research from a range of discipline areas. Significantly, whilst the paper contributed to mapping existing research it also sought to contribute to theoretical development through the conceptualisation of the MOD life cycle model. As more individuals are living and working within these MOD’s significant social, economic and environmental consequences arise. Therefore, it is timely that existing research is reviewed and research gaps identified to develop the field. The interrelationships that exist within and between these life cycle stages have significant implications for those living and working within MODs. Creating vibrant and functional MODs can only be achieved by considering all aspects of the MOD life cycle. We believe that the MOD life cycle model is a suitable framework for identification of research gaps and framing the future direction of this field of study.

The findings have also highlighted that discipline-specific research has dominated MOD research. This paper has argued that adopting an interdisciplinary perspective will strengthen future theoretical and industry development. MODs are not simply a static built form, but are akin to a living organism that changes over time. Focusing on how MODs are managed and governed, understanding the laws regulating these communities, how people live in these communities, the challenges that arise for each stakeholder group, the barriers in terminating a MOD and so forth, can inform planning research and property professionals. However, consistent with all nascent fields of study, this research has identified a plethora of future possible research directions.

In conclusion, societal expectations of functioning and sustainable communities necessitates that academic attention contributes to these debates. There is a need for informed research about the challenges that arise within each life cycle stage in order to plan for sustainable MODs. Sustained population growth and constrained physical space will continue to drive many governments towards a compact city planning approach. In a world that is constrained by physical space it is inevitable that more individuals and businesses will be operating and
living in MODs. This paper has provided a timely snapshot of current research, to provide the development sector and the housing literature with an understanding of the range and scope of research focusing upon MODs.

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Further reading


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