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Evolutionary Strategic Management based on Organisational Community Ecology: An Example from Saudi Real Estate

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Evolutionary Strategic Management based on Organisational Community Ecology: An Example from Saudi Real Estate

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Dedication

To my Late Father (Muhammad Younas Malick) who persevered to give us the best education despite his challenges.

To my Mother, constantly praying for her kids to achieve and perform to the best of their abilities.

To my Wife and Kids, who bore the long-nights, the moments of desperation, and are a source of encouragement to complete this great milestone.

To my siblings for *covert* support and encouragement.

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Durham University Business School's administrative staff team and Anne for providing guidance, and in managing an awesome programme. To my cohort members, "Thank You" for making the ride memorable, enjoyable, and

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[1]Alphabetically sorted by first name. I know some of you faced the rants more than others :).

[2]Again, alphabetically sorted

[3]This one is chronological

Research Abstract

Saudi Arabia's Vision 2030 program dramatically, changes the organisational landscape for organisations. One of the programs aims at increasing the pilgrim numbers to 30 million by 2030. This holds significant implications for hotels and retail organisation located in Makkah, Saudi Arabia. Our research aims to quantify existing organisational selection measures in the presence of growing resource numbers, with the fundamental question: does selection take place even in an environment of rising resources?

We utilise organisation ecology, a well-known theoretical framework to analyse organisation-environmental relationships. It states that organisations are "selected" for removal upon the organisation achieving environmental non-alignment. Historically, this knowledge body has demonstrated the impact of selection due to changes in the understanding of organisation categories (organisation forms), change in number of organisations in a category (density-dependence), market partitioning, and impact of organisation age. Our research applied the same theoretical fragments amongst dissimilar organisations and a religious environment, bringing novelty in the existing organisation ecology research, to identify the selection pressures faced by such organisations.

Our research used data from private (Knight Frank and STR) and public sources (Saudi Arabian Government Bodies) to develop an understanding on Makkah's hotela and retail organisations to research nine (9) hypotheses to explicate issues pertaining to organisational schematisation, vital rates, appeal structures, organisational diversity, and niche structures.

Our researched yielded some interesting results. Namely, the social schematisation is sensitive to hotel star ratings and not branding structures. The retail structure does not experience any schematisation selection pressure. 5-star ho-

tels prefer to setup within proximity to the Grand Mosque, with 4-Star hotels demonstrating an elevated mortality hazard within the population, but experience increasing founding rates with distance increases. In terms of density-dependence, the hotel population is undergoing legitimation, but have interesting sub-population dynamics. Branded hotels face elevated mortality hazards as pilgrims have choice, but the competition within the unbranded hotel category improves their life chances. Perhaps, the most interesting finding within our research context is the interrelationship of founding events between hotel and retail populations. We observed once a hotel is founded, within 1-year we see a retail founding leading to another hotel being founded within 2 years. Lastly, our research observed generalists fair better in comparison to the specialists identity.

KEYWORDS: Organisation Ecology, Community Ecology, Strategy Management, Organisational Forms, Density Dependence, Organisational Niches, Real Estate, Saudi Arabia, Makkah

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Part I

The Opening

Chapter 1

Introduction

2016 marks a pivotal event in Saudi Arabia's history, when the country's leadership, unveiled Vision 2030—an economic diversification agenda to reduce Saudi Arabia's resource generation from oil-based sources. It is based on three broad themes: Saudi Arabia's position in the Arab and Islamic world, its fiscal capacity to invest in global and local projects, and its strategic location for shipping routes. Vision 2030 contains 13 programs improving the country's socio-economic and governance fabric. Table 1.1 below provides brief elaborations on the 13 programs.

Out of these 13 programs, the Hajj and Omrah (or Umrah) program aims to increase religious tourism to Saudi Arabia—the epicentre of the Islamic faith. The Hajj and Umrah programme centres on increasing pilgrim numbers to 30 million per annum by 2030, the targeted completion date for Vision 2030. Such high numbers provide lucrative opportunities for investors to open a plethora of services endeavouring to achieve suitable returns for their businesses. Most importantly, the high number of resource availability is likely to change the organisational landscape. Thus providing us with a lucrative research opportunity.

In Saudi Arabia there are two cities constituting the epicentre of the Islamic Faith—Makkah and Madinah. We are unable to study the organisational landscape of both cities within the limits set by this thesis. Therefore, we proceed with understanding the organisational landscape of Makkah, as it is the *most*

Program	Description
Quality of Life	Improving the lifestyle of Saudi citizens and residents
Financial Sector Development	Revamping Saudi Arabia's financial sector to stimulate private sector growth
Housing	Providing affordable housing to Saudi citizens to increase home ownership
Fiscal Balance	Striking a balance between oil-based and non-oil-based revenue sources
National Transformation	Improving operational efficiency of governmental entities
Public Investment Fund	Transforming the Kingdom's sovereign wealth fund into an investment powerhouse
Privatization	Privatising government owned services and assets to improve services
National Companies	Creating and growing local companies by providing them with relevant opportunities
National Industrial Development & Logistics	Developing the industrial (manufacturing), logistics, energy, and mining sectors of the Kingdom
Strategic Partnerships	Developing the agenda for an integrated Gulf Economic Cooperation Council—an economic trade bloc
Hajj and Omrah	Increasing the number of pilgrims visiting the holy sites and improving associated services
Human Capital Development	Increasing the level of education, knowledge, and training for the Saudi Youth
National Character Enrichment	Inculcating Saudi values in its residents based on the Kingdom's legacy and Islamic values

Table 1.1: Vision 2030 Programs (2030 2018)

important city within the Islamic Faith.

The next step involves us selecting a suitable and relevant theoretical framework to study changes to the organisational landscape. Academic literature on management studies provides various options. For example, strategic management, as a discipline, allows for multiple theoretical frameworks to analyse a research objective. However, these theories have seldom a strong link with other theories inhibiting our ability to develop meaningful insights (Saloner et al. 2005). However, we have predisposition to analyse things from a long-term perspective.

We think a framework possessing abilities of a long-term time horizon with depth of historical dynamics predicting the future is best suited for our research context. Organisational Ecology (or Corporate Demography) is a suitable candidate providing integrated theoretical fragments to explain social dynamics. The objectives of Vision 2030 are likely to discharge significant social pressures changing the existing organisational landscape (2030 2018; Carroll et al. 2000a; Fattah et al. 2016).

We have positioned this paper to meet the needs of several audience groups, a challenge in its own right. Firstly, we hope to engage with the OE community on the growing concept of Community Ecology, explicating social processes for a community of the organisations. Secondly, we hope to make a meaningful contribution towards the Strategic Management literature and practice, by propagating the benefits of a long-term view of industries, as opposed to cross-sectional perspectives. Lastly, we aim this paper at real-estate practitioners[1] by providing an alternative thinking framework to arrive at meaningful decisions when choosing land plots for development. We initiate our discourse with the theoretical foundations of this thesis.

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[1]The author has significant experience within the real-estate domain, by helping organisation with their strategic priorities.

1.1 Organisational Ecology

1.1.1 General Overview

Organisation Ecology (OE) is a research paradigm concentrating on complex interactions between organisations and their environments. Over the years, various inter-related theoretical fragments were developed to understand the fundamental premise of OE—organisations face environmentally generated selection pressures raising their probability of death (mortality hazard). Initiation of the research program was through the seminal publication of Hannan et al. (1977), laying core theoretical arguments such as organisational forms, competition, and niche-width.

Organisation forms is a crucial and fundamental ingredient within OE's research paradigm, enabling logical organisational groupings that create sharp boundaries in a complex, and often, blurred corporate landscape. Various methods are used to achieve clusters, such as organisational feature similarity, internal structural arrangements, social boundaries, and social codes & identities. Logical grouping becomes intricate (and often complex) with the introduction of enthusiastic audience segments shaping the outcome of organisations by decomposing organisational activity to a set of co-created social codes in a highly active social environment (Carroll et al. 2000a; Hannan et al. 1977, 1984, 2007; Pólos et al. 2002b)

The second part of fundamental OE theories is competition created by rising organisational density—the count of organisations. Competitive pressures in a population is dependent on density levels determined by the organisations passing a legitimation test (taken-for-grantedness). Early stages of a population, the social force legitimation is active, as the organisation is seeking to establish itself in front of its chosen audience to attract and lay claim to its resources. Legitimating does not rise continuously, and reaches a finite ceiling, with further increases in density increasing mortality hazards and increasing competition (Hannan et al. 1977, 1992). Density-dependence theory has received significant empirical attention across multiple population (or industry) segments with meta-analysis of Bogaert et al. (2016) proving its applied empirical diversity.

Lastly, niche-width outlined optimum organisational orientation in response to the prevailing resource conditions. Organisations apply their internal capacity to match prevailing environmental orientations. Consequently, they develop two types of niches: (1) a broad-niche capable of operating in multiple resource configurations, usually referred to as generalists; (2) whereas specialists operate only in specific resource requirements, and hence they have a narrow niche (Freeman et al. 1983a; Hannan et al. 1977; Péli 1997).

Niche-width provided one possible explanation for population bifurcation between generalists and specialists. Resource-partitioning theory developed by Carroll (1985) outlines an alternative mechanism, whereby organisations develop niches based on resource acquisition. Carroll states the market centre contains abundant resources with few organisational members motivating mid-market organisations to move towards the centre. As mid-market organisations move towards the centre, they acquire resources overlapping resource bases of existing organisations initiating an intensely competitive battle. Consequently, as mid-market organisations move towards the centre, they forgo their periphery resource bases, allowing new organisations to be set-up on the periphery resource bases. Mid-market organisations face competitive pressures from larger organisations and smaller organisations on the periphery; mostly, they are stuck in the middle. Overtime weaker mid-market organisations are unable to sustain intense competitive pressure for extended periods; eventually, they die, leaving their resources that are acquired by existing organisations that become even larger. The larger organisations position themselves as generalists, whereas organisation on the periphery are specialists. This social process continues reaching an equilibrium bifurcating the population into neat organisational categories.

1.1.2 Inertia & Change

These three theoretical fragments represent the core of corporate demography allowing researchers to sketch an initial macro understanding of organisational populations. However, researchers sought to understand the inner working of organisations, with research concentrating in areas such as organ-

isational inability to successfully implement change due to inertial pressures (Hannan et al. 1984). Inertia started a new discussion on organisation change differentiating between core and periphery change (Barnett et al. 1995) and the role of intricacy, viscosity, opacity, and asperity in delaying change programs (Hannan et al. 2003a,b). Furthermore, researchers incorporated the role of age on organisational life-chances yielding new insights and predictions (Freeman et al. 1983b; Le Mens et al. 2011; Sørensen et al. 2000). Our research does not delve into organisational change and inertial matters

1.1.3 Logical Development & Integration

However, much research in organisational ecology faced an issue with different meanings embedded in the theories, resulting in different conclusions due to ambiguity embedded in natural language. This started a key movement within OE to use first-order-logic (FOL) to remove ambiguities inherent by describing the theory using natural language. Péli et al. (1994) reformulated inertia theory developed by Hannan et al. (1984) that proved a starting point to use logic and removing the ambiguity inherent in natural language. The need to use logic became greater when researches yielded contrary conclusions based upon common theoretical premises, suggesting certain exceptions were embedded in the theory.

Accordingly, Pólos et al. (2002a) developed new non-monotonic quantifiers to address theoretical exceptions. Later Hannan et al. (2007) completed an ambitious project integrating various theoretical fragments under a single framework to remove ambiguities that had arisen between the theoretical fragments, and they clarified theoretical machinery within them providing a sharper understanding of organisation ecology. For example, initially, density-dependence predicted organisational population changes due to legitimation and competition, treating them as somewhat static concepts. The unification work introduced grades-of-membership (conformance of an organisation to a social code) to explain population density changes (Hannan et al. 2007). Furthermore, researchers like Baron extended OE's scope highlighting functional practices (such as human resource management) at a population scale (Baron et al. 2001, 2002).

Future research trajectories in OE concentrate on two key areas. The first strand of research around the social emergence and cognition mechanisms employed by audiences to develop categories that culminate into organisational categories (Goldberg et al. 2016; Hannan et al. 2019). The second research strand concentrates on selection measures in the context of community ecology (for example: Lazzeretti 2006; Lomi 1995; Negro et al. 2010). Thus, we position this thesis within the domain of community ecology and hope for a meaningful contribution towards the field.

Historically research in OE focused on a single-population design, and at most, it included the same population from different geographic locations (for example, Hannan et al. (1995)). Research involving multiple unrelated populations lacks significant research attention (Carroll et al. 2000a, p.451). Lomi's (1995) study on Italian banks is a start, but it studied the interrelationship of two types banks restricted by location and concluding the interrelationship of organisational vital rates.

1.1.4 Community Ecology Studies

Negro et al.'s (2006) research provided insight for vertically integrated movie studios. Highlighting, the importance of a community ecology orientated study. Movie studios started to acquire distribution businesses reducing their probability of death (mortality hazard). The research spanned 80 years of production data, utilising density-dependence theory to show, as production companies expanded into the distribution business, it reduced the competitive intensity and environmental intensity of integrated companies and improving their fitness. Non-integrated companies did experience increased competitive intensity from remaining members of the population group.

Lazzeretti (2006) studied the emergence of the jewellery industry in Italy highlighted the power of community ecology. Primarily, the research focused on the role a location plays in organisational form legitimation, raising density, and increasing density.

However, the most significant research conducted in a community ecology context was completed by Ruef (2000) analysing the emergence of various

healthcare organisation forms between 1964–1994 delving into nature of cross legitimation. The legitmation of various healthcare organisation forms culminated the emergence of the Health Care Maintenance Organisation. His research covered 94 different organisation forms and the factors that led to the emergence, such as the discourse amongst medical practitioners, entrepreneurs, and regulatory environment. He proved his hypothesis by measuring the count (density) of the forms over the years proving organisations operate in an extended social environment and develop symbiotic relationships with spill-over of sociological factors.

1.1.5   Our Theoretical Positioning

We base this thesis within the sub-field of community ecology, by studying organisation with dissimilar organisation forms—meeting the requirements of our first intended group. Secondly, we will also demonstrate OE's value in the formation of an organisation's strategy to reduce its mortality hazard, and thus meeting the requirement of strategic management audience base. We refer to this as "evolutionary strategic management."

1.2   Makkah Overview

Makkah is a major city in Saudi Arabia, housing the Grand Mosque (GM), Islam's holiest site. Muslims, locally and from around the globe, visit the city to offer their pilgrimage rituals, and are required to visit it once during their lifetime, provided they are financially able to do so (Joanne Johnson 2010). The GM is a massive religious complex, with an approximate area of 1 KM^2 including its open spaces. Figure 1.1 below provides some perspective; the white marbled area represents the Grand Mosque. Over the years, the Grand Mosque has grown and has shed significant portions of its historical (Taylor 2015). To put this into perspective, the figure below shows Google Earth Imagery from 2004; in comparison to Figure 1.1 significant changes have taken place. Saudi Arabian Kings have routinely expanded the Grand Mosque to accommodate the growing Muslim population. At the time of writing, the Grand Mosque is

Figure 1.1: Aerial View of Makkah's Grand Mosque (Source: Google Earth, Image Date: 21-July-2019)

undergoing another expansion.

Upon visiting the Grand Mosque, instantly, one notices the presence of real estate development projects offering multiple services such as accommodation services, retail requirements, healthcare facilities, and food & beverage outlets, catering to different pilgrims tastes. Hotels and retail developments largely dominate the urban fabric of the city. Figure 1.3 below highlights (yellow) such developments in proximity to the GM. One of the most significant developments in proximity is the Jabal Omar Project under execution by the Jabal Omar Development company (2020). The project is targeting to house up to 36,000 guests and 100,000 visitors upon its completion. Currently, its portfolio consists of a wide array of branded hotels and significant retail areas.

Another, equally massive project is the Abraj Al Bait (or King Abdulaziz Endowment Project) that consists of hotels and retail space (Tall Buildings et al. 2020). Other planned projects include the King Abdulaziz Road Project, situated east to the Grand Mosque, with a sizeable area under development

Figure 1.2: Aerial View of Makkah's Grand Mosque circa 2004 (Source: Google Earth, Image Date: 7-Sep-2004)

(Construction 2020; Al-Thaqafi 2019), and the Rou'a Al-Haram (RAH) Project undertaken by the Public Investment Fund of Saudi Arabia—the country's sovereign wealth fund (PIF 2017). RAH is expected to cover an area of 854,000 square meters with 70,000 hotel rooms in addition to the provision of residential and retail asset classes. Analysts predict hotel development in Makkah is likely to increase as pilgrim numbers increase exponentially (Sequeira 2016).

It is not surprising to notice that an inherent and symbiotic relationship exists between hotels and structured retail due to the integrated nature of the real-estate development process (Miles et al. 2015); presenting as an ideal opportunity to apply principles of organisational ecology, specifically community ecology, in the context of dissimilar identity patterns.

At this point, real-estate practitioners may question our intent of utilising a different model to understand local dynamics, when the status quo satisfactorily completes the job as outlined by Miles et al. (2015). As we stated above, organisational ecology has strong empirical foundations in understanding organisation-environment relations, and the real-estate development pro-

Figure 1.3: A sample of areas with hotels and retails in proximity to the Grand Mosque

cess largely embeds the prevailing environment in the form of feasibility studies. Since feasibilities only capture the information at *that point in time*, it lacks a holistic perspective concerning: the industry's history, its existing formation, and changing dynamics.

Granted, most developers conduct a market study to understand the existing supply of an asset-class; what is missing is the *future trajectory* of the industry. organisational ecology offers a novel perspective in this regard, by analysing historical patterns to understand potential outcomes for the future. Additionally, such research provides an interesting intersection with the domain of strategic management equipping managers with the knowledge of the past to develop and implement decisions insulating the organisation from future environmental shocks.

1.3 Our Contribution

The limited yet stimulating research within the community ecology provides an excellent opportunity to position our thesis for academic readers and practitioners of real estate.

1.3.1 Academic Contribution

Historically, research in OE has focused on the Western World using old data sets that aided in the development of core theoretical fragments and framework. Increasing geographic diversity ensures cross-applicability of OE's and strengthening its intellectual prowess (for example Hannan et al. (1995)). Furthermore, data on organisations within the Western World is generally available for research purposes. Saudi Arabia has data but access to such data types is usually controlled and restricted, allowing us to share our experiences of executing research in such an environment.

Furthermore, the presence of Vision 2030 presents a unique opportunity to study the regulatory impact on life chances of organisation. Research of Ruef (2000) research shows the emergence of the Health Maintenance Organisation (HMOs) in the American healthcare industry proves regulations importance. Despite the organisation form achieving social acceptance (taken-for-grantedness), the emergence was only possible after legislative action. Regulatory impact on organisational activity is relatively underrepresented in OE's literature, and this thesis provides an opportunity to study it before such effects are introduced. At the time of writing, we believe insufficient time has elapsed for Vision 2030 to take full effect to change organisational dynamics.

Secondly, OE is primarily based on finite resources, whereas our context is dealing with increasing resources as a core objective of Vision 2030 is to increase pilgrim numbers. It is quite uncommon for industries to experience rising resources. In such a social environment, would the theoretical fragments such as resource partitioning persist in the market (Carroll 1985)? The same applies to other theoretical fragments that we covered above.

Lastly, theoretical development in OE focused on single-population or a community of organisations with similar identity patterns. Our efforts to re-

search an unrelated population is challenging and provides an excellent opportunity for future researchers to develop new (or update) theoretical insights based on a community population context and vital for the field's theoretical progress (Bogaert et al. 2016, p. 1363). For example, the literature does not provide an answer to the impact of rising density levels on two sets of unrelated populations. We may witness the confirmation of the original theoretical insights, or we may discover something new.

1.3.2 Practitioner Contribution

This paper also serves to increase contribution towards practitioners of strategic management. Through this research paper, we aim to engage strategic management practitioners to think beyond the analytical tools during an organisation's strategy development. They should focus on the industry, and its symbiotic partners to understand the social forces shaping its life chances. This creates a cognizant organisation identifying sources of shocks and continually managing its alignment.

Organisation ecology is a dense subject, and it can be daunting to the first-time reader[2], but we request our practitioner readers to demonstrate some patience. Why? Organisation decisions developed using ecological underpinnings provide a logical framework to analyse the firm's environment and develop logical conclusions that ensure achievable results (Carroll et al. 2021). Furthermore, ecology provides a holistic lens to analyse the industry over a long period. Knowledge of customer requirements is understood via theoretical frameworks such as offer appeals and engagement. Competition is understood via density and partial membership, making an organisation reflexive to its current environment and its expansion strategies. Lastly, an organisation can understand its limits to growth based on its niche-width. Each theoretical factor provides an integrated approach to understand the current organisational position and the steps it can take to navigate the future. Cross-sectional longitudinal planning mechanisms, as employed by the practitioner (for example, 5-year plans)

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[2]The author felt overwhelmed when initiating studies in organisation ecology, however, with due time it became clear. However, at times things are still unclear, but the author is extremely thankful to his supervisor László Pólos for being patient and guiding him through this journey.

provide a partial view of the history of the population and insufficient as they are unable to capture the path-dependency of the industry.

1.4   Document Structure

The application of such a theoretical framework to study the evolution of real-estate asset classes is indeed novel. However, we must provide an overall direction to ensure our efforts meet the desired objectives. In this regard, Chapter 2 details our research scope with a brief focus of the epistemological considerations. Chapter 3 provides a theoretical introduction to our chosen framework, and sets the tone for Chapters 4 – 6 providing a detailed review of three theoretical fragments applicable to our research context. Chapter 6 provides a review of researchers criticising organisation ecology as a research paradigm. Chapters 7 – 8 provide our hypotheses and its operationalisation, respectively. Chapter 9 is crucial for the research, as it documents our key "enabling works"[3]. In Chapter 10, we verify our hypotheses, validating our social intuitions. Chapter 11 provides a detailed discussion and implication of our research and closes with a conclusion for the thesis.

1.5   Overall Claim

We understand readers will have to read the entire length of the document to understand our overall claim. Hence, we have taken the liberty to document our overall claim based on the information provided in this chapter.

We believe distance from the Grand Mosque holds significant selection power for hotels and retail organisations. We envisage distance restricting organisational forms within the market. Areas in proximity to the Grand Mosque will see certain types of organisation forms, with other types spread across the city. Specifically, we envisage 5-star and 4-star hotels in proximity to the Grand Mosque, with remaining hotels spread across the city. On retail, we envisage

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[3]A term borrowed from real-estate practitioners; before the initiation of a development project, required infrastructure works (back filling, primary infrastructure etc.) are completed for vertical construction

community malls in proximity to the Grand Mosque, as larger malls are unable to establish due to land limitations.

A logical follow-on from organisational form restriction are founding rates. Founding rates of certain organisation forms will concentrate over certain distance requirements, whereas other will increase with increases in distances.

Competitive dynamics respond to distance and sub-population dynamics. Competition between 5-star and 4-star hotels is localised in proximity to the Grand Mosque, with competition from remaining hotels spread across the city. However, for retail, we believe competition increases as distance from the Grand Mosque increases.

Lastly, for resource partitioning at a community ecology level, we foresee it being played out on an identity level. Generalist identity is concentrated within proximity to the Grand Mosque, with specialists spread across the city.

Chapter 2

Research Scope

We have taken the liberty to divide our research section in two parts. The first part (this chapter) defines the overall scope of this thesis. We elaborate on the epistemological considerations, our research questions, and our data sources. In OE data sources heavily influence the outcomes as the disciplines relies on complete data sets. In Chapter 8 we detail our technical research methodology.

2.1   Research Philosophy

Existing work within organisation ecology follows strict empirical research tradition firmly grounded in positivism (Bryman 2012, Chaps 1-2; Carroll et al. 2000a, Chaps 5-8). We follow this tradition for this research thesis. Granted, this precludes other forms of knowledge acquisition and developing facts, mainly qualitative methods. Nevertheless, we believe qualitative methods are restricted to anecdotes for our research that create the "why" for our research. The author has significant experience in the domains of real-estate by their experience as a working professional in this field and continuously visits Makkah to perform their religious rites. Hence, the author has picked up significant "whys" during his time that he always wanted to quantify and understand.

2.2 Research Questions

Based on the introduction of organisation ecology and Makkah, our research questions pertain to three themes. Firstly, we investigate if rising resources has a role to play in organisational vital rates, as described in Vision 2030. Secondly, we seek to quantify competitive and tastes pressures witnessed by organisation. Social evidence alludes to such dynamics quantified along distance-based dynamics. Thirdly, we assess if regulation impacts organisational dynamics. Fourthly, in the context of organisational ecology we assess the nature of symbiotic relationship between the two organisational populations.

2.2.1 Research Question 1

Vision 2030's objective of increasing pilgrim numbers, creates an environment of increasing resource flows to Makkah's organisations, facilitating emergence of various organisational types in the community population. Figure 1.1 above shows land available on the northern and eastern sides of the GM, indicating availability of physical space for organisational emergence. Historically, 5-star and 4-star hotels occupy the area in proximity to the GM, and we expect the continuation of this social trend with various forms of structured retail as well.

As we stated in the introduction, the real-estate development projects of Rua'a Al-Haram and King Abdul Aziz Road project will act as enablers in achieving organisational diversity (PIF 2017). These projects do not restrict organisation creation to these areas, despite them, numerous hotels and retails have continued to exist with the Grand Mosque being the centre of activity. Implying, changes in organisational compositions are done by pilgrims and their taste profiles. Alternatively, another possibility is rather than witnessing organisational diversity; we see organisational concentration. This is possible due to general conditions within the organisation ecology framework that pertain to appeal dynamics and categorical grade-of-membership of organisations (Hannan et al. 2007).

Nonetheless, to-date, theoretical developments in organisation ecology are based on a finite set of resources, ever-increasing resource present a unique

research opportunity to advance knowledge for our academic readers. For our practitioners, it will highlight critical insights for strategic management the composition of organisational changes. Therefore:

> **Research Question 1**: *Given Vision 2030 creates an environment of increasing resources, would this lead to organisational diversity in the community, and its subsequent impact on vital rates of those forms?*

Increasing organisational diversity implies entries of organisations into the category impacting competitive relations. Business managers will be under pressure to ensure successful alignment to improve their business returns and reduce competitive pressures. They will be required to develop strategies that buffer the impact of such complex, competitive relations, but does it still apply in the case of rising resources? We will have to wait for our results to provide an answer.

2.2.2 Research Question 2

Makkah is an exciting place with the GM representing the focal point of activity. Presumably, the competitive activity of our community population increases as the distance from the GM increases, suggesting competitive dynamics in the proximity to the Grand Mosque are different to dynamics in remaining part of the city. Furthermore, it also suggests, offers developed by hotels/retail organisations will change based on distance from the Grand Mosque due to changing taste profiles.

Competitive pressure should result in rising mortality rates for the community population but based on our qualitative assessment through visiting the place; we do not physically see any hotels closing. Enough resources (in the form of pilgrims) are available for all population members, but this requires empirical verification. Similarly, taste profiles are bound to change concerning distance. It is common knowledge (for visitors and pilgrims) that hotels in proximity to the GM are expensive and luxurious, whereas such hotels are difficult to find located further away from the Grand Mosque. Thus, it suggests that after a certain distance, taste/offer profiles transform. For our academic audience

reading this paper, this question will contribute to the literature of changing audience tastes and its impact on organisational mortality (for example, Le Mens et al. 2015).

Similarly, business managers/practitioners within the real-estate world can use such a framework to know empirically, locations that conform to a particular taste profile. In sharp contrast, real-estate practitioners determine a land's viability by conducting a site analysis and assessing the presence of various real-estate developments in proximity to the location. However, the results are presented as returns, but what if a real-estate development's suitable is presented as hazard functions?[1] Although hazards may appear as complex figures, if they can be presented as relative measures in conjunction with financial returns, this should significantly enhance the decision making of real-estate practitioners. Therefore:

> **Research Question 2**: *How do we quantify competition and taste pressures along dimensions of location and distance?*

2.2.3 Research Question 3

Initially, Carroll et al. (2000, Chap 18.) raised the question of regulation influencing organisational activity. Research on the American Healthcare industry provides some credence to this possibility that led to the emergence of the Health Maintenance Organisation (HMO), as the regulatory change was the final roadblock in the form's emergence (Ruef 2000).

We see Vision 2030 as a form of regulation, potentially impacting dynamics of the community population. Why? The government is planning a massive complex north of the GM, inviting the private sector to collaborate and build hotels and retails to service the pilgrims (PIF 2017). Management practitioners are more sensitive to changes in regulator environment, as even simple regulatory compliance can trigger a series of changes (for example, Hannan et al. 2003a)

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[1]This portion of the paragraph stems from the author's experience in the real-estate industry. The author has experienced such site visits that result in a document stating an optimal development to generate sufficient returns for the business.

Research Question 3: *Does regulation impact organisational activity and vital rates?*

2.2.4 Research Question 4

Lastly, organisational communities only thrive if there is spill-over of social forces between populations. The presence of a statistically significant relationship will prove that the dynamics of community ecology exist, even in dissimilar organisational population. Our working assumption is that a statistically significant relationship does exist, to direct our research efforts. Qualitatively, we believe a symbiotic relationship exists as hotels and structured share an inextricable link. Hotels are established first, giving a shared resource base followed by the emergence of retail offerings that closely match tastes profiles of the pilgrims. Nonetheless, the thesis will take an exciting turn if we conclude otherwise. Therefore:

Research Question 4: *Does a statistically significant relationship exists between our population sets?*

2.3 Data Sources

In order to answer our research questions, we use diverse sources of data on our populations. Experience informs us of limited avenue for secondary information on various social aspects of Saudi Arabia. Therefore, we develop our dataset from multiple sources evaluated against four items: organisation coverage, event coverage, precision, and level of detail (Carroll et al. 2000a, Chap. 8). Organisation coverage ensures the correct organisations are represented within the data sample, excluding organisations that warrant exclusion and vice versa. Our data is from specialised sources that endeavour to capture relevant information.

We have to ensure the dataset does not suffer from left-censoring. A data-set becomes left-censored when the observation period omits organisations during the early phases of the population (Blossfeld et al. 2007, p. 40). Furthermore, the data sample should record the start and end dates of significant events

experienced by the population members, with dates recorded in the full format. This requirement is difficult to assess for data sourced from private companies, as we will never know (definitively) their inclusion criteria. Public sources owned by the government will have full information on organisation, whether they choose to share information is another matter.

Finally, the dataset should endeavour to capture organisational details, which are extra information recorded about organisations within the population (Carroll et al. 2000a, Chap. 8). To highlight the breadth of data requirements, a study in organisational ecology used organisational data from 1826-2009, a period coverage of 184 years (McKendrick et al. 2014). This puts immense efforts on us to find comprehensive data sources to develop meaningful insights.

It is also possible to conduct research on OE with *incomplete* (or data on organisations for only some of the years, however, this skews our understanding of vital rates. It is possible that our observation period may cover a period of intense environmental uncertainty that increases mortality rates, leading us to incorrect conclusions. In OE this situation is referred to as left censoring and can be mitigated with using computer simulations, however, this should be a contingency plan instead of the plan (Carroll et al. 2000a, Chap. 8). Accordingly, our data sources are as follows:

General Authority of Statistics (GSTAT). It is the country's authorised statistical body collecting various information such as population, economic indicators, trade, pilgrim movements, and others. It also collects information on the number of organisations established in each economic category. Annually, GSTAT publishes a yearbook of statistical information encompassing a broad range of economic activities. A vital aspect of the yearbook is information on the movement of pilgrims. Generally, their website provides information on Hajj and Umrah pilgrims, with details on pilgrim origination—that is the internal or external movement of pilgrims. Its archives date back to 1965, providing sufficient information on the growth pilgrims.

Knight Frank. Knight Frank (https://www.knightfrank.com.sa/en) is a real-estate consultancy located in Riyadh, Saudi Arabia. The organisation is a

well-known international consultancy specialising in several real estate services. A crucial part of their service portfolio is retail consultancy. Accordingly, we presume that they will contain information on retail establishments of Makkah.

Middle East Council of Shopping Centres (MESC). MESC (https://www.mecsc.org/) is a region-specific organisation that contains information on malls.

Ministry of Hajj & Umrah. The Ministry of Hajj and Umrah is another source of statistical information (https://www.haj.gov.sa/en). However, their focus remains on pilgrims arriving from outside of Saudi Arabia, with limited information on internal movements.

Ministry of Tourism. Ministry of Tourism is the hospitality regulator in the country and should ideally maintain a database on the hotels in Makkah. It was formerly known as the Saudi Commission for Tourism and Heritage (SCTH) formed around in 2000. Recently, this body was transformed to the level of a Ministry to regulate the tourism sector of the economy (Tourism 2020a). Part of the Ministry of Tourism's offering is the Tourism Information and Research Centre (www.mas.gov.sa) dedicated to providing information on hotels, which we hope will contain full information on the hospitality sector.

STR Global. It is a propriety database that contains census information on hotels around the world. We presume they will also have information on hotel for Makkah. Furthermore, STR Global operates an academic program, offering research students and their supervisors' access to the data for a period of one-year at no charge. We will also utilise this source as well.

2.4 Chapter Conclusion

Evidently, we will follow an empiricist viewpoint during the execution of this thesis, given our epistemological position. Furthermore, we demonstrated the link between our research environment and the questions arising from the current forces experienced by organisational members.

We envision challenges to data collection in Saudi Arabia where it is customary for government-based data sources to contain additional information in Arabic Language website, instead of the English language. Therefore, we will review information in both languages to develop a complete picture of the data. We have a rudimentary understanding of the Arabic Language, and use Google Translate when required. A major issue in such data is research replication, and we endeavour to provide access to the data sets upon completion.

Part II

The Criterion

Chapter 3

Ecology of Organisations

In this Chapter we set the case of using an ecological perspective to study organisations. Although this Chapter maybe brief in comparison to other Chapters, but it is essential as it sets the tone for Chapters 4-6. and our argument structure. We understand experienced readers in organisation ecology will find this Chapter trivial, but we included it to appeal to a broad range of audiences. Experienced readers may wish to skip the Chapter.

3.1   The Eco-Logical Case

Organisational ecology traces its roots back to the seminal paper developed by Hannan et al. (1977) which sets the theoretical foundations of the ecological field. At its time, the paper criticised the dominant adaptationist perspective to organisational evolution; which is organisations *only* adapt to the environment to become better market players. Hannan and Freeman stated rather than organisations adapting to the environment, the *environment selects them and removes them from the market.*

Organiastional Ecology starts its explanation from the sociological environment of organisations. There are two main actors working in this environment: *producers* and *audiences.* Organisation ecology uses the terms producers to denote entities which develop a product/service for the consumption of an audience segment. Accordingly, an audience refers to a *group* interacting with pro-
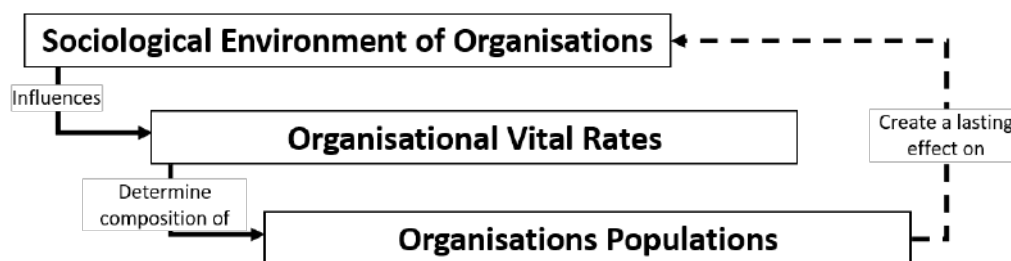
Figure 3.1: Ecological Model for explanations adapted from Carroll et al. (2000a, p.31)

ducers for consumption purposes. Sociologically this includes a diverse range of groups such as regulators, consumers, industry analysts and many more. Organisational Ecologists use a very broad understanding of audiences and create a specification based on their chosen analytical framework. A prime example in this regard has been Zuckerman's 1999 work on the United States equity market. It is common knowledge stocks (or shares) impact a diverse range of people, with each group having specific requirements. However, Zuckerman specified the impact of an audience segment to understand the sociological environment of organisations.

Definition 3.1.1 (Producers) *Producers refers to organisations developing a product or service for the consumption of audiences (Hannan et al. 2007)*

Definition 3.1.2 (Audience) *Audiences are various sociological groups interacting with Producers (Hannan et al. 2007).*

In Chapter 4 we analyse the producers and audiences in greater detail. At this point in our argument we refrain from applying these theoretical definitions to our research context. Furthermore, we also refrain from explicating our environmental conditions as these are covered in the chapters below.

Now we turn our attention to the second box of the graph: Organisational vital rates. Organisation ecology primarily concerned with organisational vital rates. What are these? Essentially, these are measures to quantify birth rate and death rates of organisations. As producers and audience interact they

impact the organisational vital rates. Their collective reactions create a conducive environment for increased organisational founding–thereby, increasing the birth rates for organisations. Conversely the interaction of audiences and producers can create an unsustainable environment increasing the death rate for organisations. (Carroll et al. 2000a)

Definition 3.1.3 (Vital Rates) *Vital rates refer to the birth or death rate of organisations in a sociological environment under study (Carroll et al. 2000a).*

As the vital rates change, it is bound to the change the composition of organisations populations—the status quo has changed, bringing our discussion to the last box. Since the composition of the population has changed it creates a *new* sociological environment for the organisations influencing a new set of vital rates modifying the composition of organisation. This *ecological process* keeps on continuing. It is important to state Organisation Ecologists refer to a collection of similar organisations as a population (covered in detail in Chapter 4).

Definition 3.1.4 (Organisation Population) *A collection of organisations having similarity (Hannan et al. 2007).*

The illustration we have elaborated may position organisation ecology as a theoretical construct analysing the process at different points in time—a panel-based understanding of vital rates. However, ecology positions such methods as providing a partial understanding of social phenomenon. Instead organisation ecology seeks to understand this phenomenon across a *continuous time period* and not just at specific time period. The continuity in the timeline provides a richer picture on the sociological dynamics(Tuma et al. 1984). The main objective of these theoretical constructs is to quantify an organisation's fitness—strong alignment with the prevailing market conditions

Definition 3.1.5 (Fitness) *Fitness is an organisation's strong alignment with market implying it is able to attract significant resources (Carroll et al. 2000a; Hannan et al. 2007)*

3.2 Mechanics of Ecology

Our elaboration above may illustrate a dynamic sociological environment. However, there are key theoretical components defining the sociological environment for organisations. In the paragraphs that follow we provide a brief overview of such components. Some of these components relate to our research questions as we mentioned above, and remaining are elaborated to provide readers with a holistic understanding of organisation ecology.

The first such theoretical component is about Populations of organisations. Research in this domain has sought to define an organisation and diversity of organisations. Theory in the field provides two main perspectives to define an organisation: (1) defining a population of organisations along a set of features; or (2) socially crafted organisations. The features method is relatively easy in its application for researchers, whereas the social method requires researchers to discharge a significant cognitive load. In Chapter 4 we provide a much deeper understanding on organisation forms (Hannan et al. 1984, 1985, 2007, Chap.1-4).

The second theoretical component is the concept of *density*. Essentially, density is the number of organisations—the count.

Definition 3.2.1 (Density) *The number of organisations in a population. (Hannan et al. 1992).*

However, it is important to understand the count of organisations in relation to a specific organisational population. This alludes to the strong link between organisation forms and density. As a population of organisations is readily identified it allows producers and audiences to develop interaction patterns. These interaction patterns causes other organisations to enter the organisation population and reap benefits from consumers, thus increasing the density (and the overall competition) of the organisational population. Therefore, there is a very strong link between organisation forms and density. Organisational Ecologists analyse the changing patterns of a density as cues to fixate and confirm the reasons for surge or decline in an organisation population. This requires quantitative statistical modelling to arrive at strong and generalisable research

conclusion. Density is another theoretical component used in our research with Chapter 5 detailing its inner workings. At this point in the argument we would like to highlight the strong theoretical link between organisation forms.

The third major theoretical component in organisational ecology is another interlinked component: organisation niches. This theoretical component elaborates the mechanism by which organisations develop their own *space* in the the environment ensuring they are buffered by unforeseen environmental changes. Organisations attempt such maneuvers to ensure they sustainability and continuity. However, depending on the prevailing economic conditions certain niche orientations are better (Hannan et al. 2007; Péli 1997). An alternative perspective of organisational niches argues organisations create niches based on control of resources (Carroll 1985). Organisational niches is another element covered in Chapter 6 as it is directly related to our research questions above.

The fourth theoretical component relates to age. This component analyses age at two levels: (1) age of the overall population; and (2) age of individual organisations. An organisation is exposed to multiple liabilities contingent on its *own* age. The first liability is referred to as the liability of newness. As the name implies the organisation has just been established and has yet to institutionalise its internal routines. The inconsistent routines create varying performance levels, reducing the organisation's fitness. The second is liability of adolescence. During this phase, the organisation matures and is performing. However, at time organisations are unable to sustain their cost structures due to changing environmental conditions elevating their mortality hazard. The third is liability of obsolescence, which applies at the population level and not to specific organisations. The population's existence is taken-for-granted. Implying, the structures of the organisation become obsolete with respect to the environment. Lastly, the liability of senescence is experienced when an organisation becomes large and sluggish in their environmental responses. (Hannan et al. 2007; Pólos et al. 2002a)

3.2.1 Secondary Mechanisms

The four theoretical fragments we reviewed work form the crux of organisational ecology, and provide detailed working of populations. However, research of organisational ecology has delved into the inner workings of organisations—again from a selection perspective.

The first such mechanism is referred to as *inertia*, whereby the internal organisation routines make changes to the organisation difficult. Why? The social standing of an organisation requires it to deliver performance standards that develop its good ans services. This causes the organisation to develop set routines to achieve such performance requirements. The side effect of such standardisation is the inability to change routines as the environment changes. Hence, raising the mortality hazard. (Hannan et al. 1984; Péli et al. 1994). However, this does not mean that organisations don't change and are stuck in their own construction. Rather, changes that impact the organisation's core create a long series of change impacting various facets of the organisation. During this chain-of-changes the organisations performance levels are uncontrollable as management allocates its attention to making a successful change (Barnett et al. 1995).

The second element is the internal arrangements and structure of organisation. This theoretical looks at the relationship between units of an organisation—referred to as *intricacy*. Complex relationships between organisational units makes it difficult for successful change implementations as management is unable to determine the extent of change-chains. Related to this is the concept of opacity—the clarity of inner workings of various organisational units. Similarly, if management is unaware of the inner workings of certain organisation units impacted by the change, they cannot determine when the change will end. Finally, on the human element, we have the taken-for-grantedness of the organisation's culture—referred to as asperity. Strong asperity makes change a very difficult process (Hannan et al. 2003a,b).

3.3 Community Ecology

The four elements summarised above illustrate the theoretical breadth of organisational ecology. Over the year numerous research studies have applied these theoretical construction in multiple ways with the chapters below reviewing some of them in greater detail. However, at this point in the argument we want to highlight the application of these fragments. As we stated in the introduction, the application of these theoretical fragments has largely been limited to a single organisational population (Carroll et al. 2000a). Whereas, our research seeks to apply this in a multiple-organisational population environment—referred to as community ecology. Our research context is firmly based within the sub-domain of community ecology.

Available research on community ecology largely concentrates on a single population design, albeit with certain dissimilarities between the population (Audia et al. 2006; Carroll et al. 1991a,b; Lazzeretti 2006; Lomi 1995; Negro et al. 2006; Wade 1996). For example, research on the beer brewing population differentiates between mass producers and smaller beer producers such as brew pubs, craft brewers and others (Carroll et al. 1991a,b, 2000c). Researchers within the field of community ecology seek to identify if the original theoretical premises developed for organisational ecology hold true. For example, in our research context, we would like to identify if there are cross-population density impacts. Does the increasing density of hotels increase the retail density? If it does, under what conditions is this applicable and inapplicable.

3.4 Literature Research

In Chapter 2 we elaborated our research questions; we have provided them below for ease of reference. The questions above provide an overall direction for the thesis with the answers culminating in a meaningful (hopefully) theoretical and practitioner contribution. Now we turn our attention to the theoretical underpinning of this thesis, with the research underpinning as largely positivist and empirical.

An implicit research tradition, in organisational ecology, is a precise and

Research Question	Description
Research Question 1	Given Vision 2030 creates an environment of increasing resources, would this lead to organisational diversity in the community, and its subsequent impact on vital rates of those forms?
Research Question 2	How do we quantify competition and taste pressures along dimensions of location and distance?
Research Question 3	Does regulation impact organisational activity and vital rates?
Research Question 4	Does a statistically significant relationship exists between our population sets?

Table 3.1: Research Questions

sharp review of existing literature to provide background knowledge and understanding. It took four decades to develop OE's intellectual diversity, and it is impossible to review all theoretical fragments within the constraints of this thesis. We adhere to reviewing literature in a specific and precise manner, with theoretical fragments matching our research question. Readers in organisational ecology will realise different theoretical fragments are available to study a particular social phenomenon, but our choice reflects the belief that the chosen fragments are suited to our research at this point—an initial exploratory view of the real-estate asset classes in Makkah. In the future using the same social context and applying different theoretical fragments, we will understand new social insights.

3.4.1 Research Question 1

Question 1 requires a theoretical fragment navigating the complex, and often, blurred world of organisations. For example, McDonald's and Burger King both offer a fast-food burger experience. In terms of product and broader restaurant characteristics, their offers are *nearly* homogeneous. Yet as consumers, we still maintain differentiation based on specific features.

In OE, the theoretical strand of *organisation forms* provides the theoretical

machinery for organisational categorisation. Broadly, categorisation is achieved through: static-feature analysis, understanding the presence of social boundaries, or dynamic-features as co-created by organisations and their audience groups (Carroll et al. 2000a; Hannan et al. 1977, 1984). In our context of increasing resources, organisation forms provides the framework how categorical differences impact organisational activities. Organisation forms provide a framework to identify and contextualise changes in organisational categories similar to research on the brewing industry witnessing the emergence of new categories (Carroll et al. 2000c).

Alternatively, we can study organisational diversity in terms of changes in density patterns, as explained by the density-dependence theory (Hannan et al. 1992, 2007). Density-dependence theory posits that changes in organisational populations arise due to changes in forces of legitimation and competitions. Over time, a population reaches an equilibrium with sharp organisational boundaries as witnessed in the beer brewing research study. In earlier research efforts, brewing density was unable to fully explain the changes in underlying dynamics (Carroll et al. 2000c).

Furthermore, organisational diversity is influenced by population density at the time of an organisation's establishment (Swaminathan 1996), stating organisation's founded during times of high-density have an elevated mortality rate throughout their history (Carroll et al. (1989) the density-delay effect in a population).

Another perspective to study organisational diversity is by researching organisational fitness vis-à-vis the environmental conditions (Le Mens et al. 2015; Miner et al. 1990). This strand posits organisations with high environmental fitness are candidates with durable survivability in comparison to organisations with low-level of environmental fitness. This perspective requires a granular understanding with a focus on internal organisational workings to understand mechanisms leading to environmental misalignment, requiring a significant research effort.

Niche-width explains the dichotomous organisational diversity (Hannan et al. 1977, 2003c; Péli et al. 1994) between generalist and specialists; or through resource partitioning (Carroll 1985) that uses competition for resources as an

underlying factor for diversity. Given, we have multiple theoretical fragments to answer our first research question, how do we select amongst the theoretical fragments?

The theoretical fragment should provide the necessary framework to contextualise organisational idiosyncrasies allowing reflexivity in researchers towards changes organisational landscape. It should act as a foundation that enables perpetual analysis. For example, density-dependence explains the changing organisational landscape in terms of the number of members. If a new, closely-related member is established, chances are classical density dependence *may ignore it*, or that member will be classified as part of the overall population as was the case with microbreweries (Carroll et al. 1991b). This mandates the theoretical fragment to be reflexive towards organisations closely related to the population under study, and identify avenues of organisational diversity that arise as a consequence of macro-social processes.

Therefore, to answer Question 1, the Organisation Forms presents itself as the ideal candidate for the study of organisational categories. Primarily due to its rich intellectual history and evolution as a theoretical concept. Initially, it started as a static understanding of organisation forms (Hannan et al. 1977, 1984), developing into an understanding of social processes (Hannan et al. 1985), and culminating into "live" concept that continuously co-created by organisations and their audiences (Hannan et al. 2007). Future research provide sufficient theoretical power to understand mechanisms that create organisational categories (Hannan et al. 2019).

3.4.2 Research Question 2

Question 2 seeks to understand the pressures faced by organisational members due to the knock-on effect of increasing resources which lead to rising founding rate founding rates in a population, leading to increased density and competitive relations. organisational ecology offers density-dependence as the prime candidate to explore issues of competition (Hannan et al. 1992). Over the years, enhancements in theory incorporated weights (for example Baum et al. 1992), the role of fuzziness (Bogaert et al. 2010; Kuilman et al. 2009) and meth-

ods of entries (McKendrick et al. 2003) have enhanced the theoretical power of density-dependence. Moreover, for us, such impact across unrelated populations are worth exploring and contributing towards the academic development of this discipline.

Additionally, a by-product of competition is increasing mortality hazards for organisations due to ensuing competitive relations. Resource partitioning provides an alternative explanation for changes in population densities (Carroll 1985). As densities increase, organisations founded during such times experience an elevated mortality hazard throughout their life-time, referred to as density-delay (Carroll et al. 1989). Therefore, to answer Question 2 holistically, we will conduct a review of the theories of density-dependence, density-delay, and organisational niches.

3.4.3 Research Questions 3 & 4

Research Question 3 does not require an underlying theoretical fragment for study purposes. We asked this question to understand the role of regulation in determining organisational vital rates. Research has shown that regulation does impact activity in organisational populations (Negro et al. 2006; Ruef 2000, 2004). However, our research is novel due to dissimilar populations.

Research Question 4 seeks to confirm if meaningful relationships can exist between organisations with dissimilar identity patterns, to confirm he notion of community ecology. It will be interesting to witness if this statement is rejected in favour of *inter-organisational* dynamics as opposed to *intra-organisational*.

3.5 Other Elements?

Although, we would like to apply all the aforementioned theoretical fragments to our research context. However, we believe limited availability of data and limits of this thesis preclude us from executing such a research program. We hope that this is covered in future research by us and/or other researchers to provide a holistic view of our populations.

3.6 Chapter Summary

In this Chapter we have provided a brief, yet expansive summary on the theoretical domain of organisation ecology. So far in our argument, we have refrained from providing extensive details on the theoretical components as these are covered later. Organisation forms, density and organisational niches are the key theoretical components used to develop an initial understanding of a organisational population. Similarly, we selected these components as the basis for our research. Furthermore, we hope with this chapter, we have created an initial understanding of organisational ecology for our readers and prepare them for the following detailed chapters. At times it may appear the information has been repeated, but we have purposefully done it to ensure relevant information is provided to the reader without the need to jump between the sections.

Chapter 4

Organisation Forms

In this Chapter we introduce our first theoretical element and develop a deeper understanding of organisational categories. We introduce the concept of organisation as a social category, and various methods used to define it. Next we review research studies that sought to outline forms as they emerged within the social environment. This is followed by a review of organisation forms in Makkah. Our research provides information in two respects: (1) organisational categories, and (2) individuals actors performing in the category. We also specify the organisational categories we study within the remits of this document, and the factors affecting them. Finally, we provide some concluding notes.

4.1   Theoretical Overview

We initiate our theoretical discussion with organisation forms, a tenet within OE equipping researchers to discriminate between organisations. Forms play a vital role in OE, enabling categorisation into manageable analytical constructs—imagine if all organisations were a single type. For example, we can easily differentiate between McDonalds's and DHL as both conform to very sharp organisational categories—food and logistics, making such differentiation easy. We as individuals can distinguish between organisations at a very minute scale, and even organisations differentiate between themselves, even though they may seem themselves similar—for example, McDonald's and Burger King.

Despite the high product homogeneity between the two organisations, we as individuals ascribe different values to their features (for example, grilled patty versus fried patty).

As individuals we are located along specific points of a socio-demographic space (referred to as "Blau Space") with groups of individuals located along a specific dimension having high taste similarity. Adjacent groups also share some tastes similarity, but to a lesser extent (Blau 1977). Similarly, such phenomena exist for organisations, as organisations with high-trait similarity and readily identifiable features communicated using a standard language are part of a single category (Carroll et al. 2000a; Hannan et al. 2007)—that is we can differentiate between a "fast-food" and "gourmet burger". The underlying mechanisms that create this differentiation, and its readily identification are part of the vast sub-domain of organisation forms.

A significant amount of research effort has been (and is being) expended in understanding organisation forms. We approach the literature by reviewing classical conceptualisations of an organisation. The classical view is followed by defining organisations with their socio-environment location. Research in this vein concentrated on the presence of social boundaries. Lastly, we review organisations as a social construct that is continuously co-developed by members of the organisation's environment.

Following the literature review we, we outline the organisation forms for our community ecology. Our research hypotheses stemming out from this literature review are provided in Chapter 8.

4.2 Theoretical Definitions

In this section, we review three definitions used in organisation ecology to forms. We start the discussion with an orthodox understanding of organisation forms by reviewing classical literature. Secondly, we review organisation forms as a social construction limited by social boundaries. Finally, we review a refinement of socially defined organisation forms, upon which future research efforts were based upon (for example Hannan et al. (2007), Hsu et al. (2011), and Kovács et al. (2010))

4.2.1 Feature Defining Forms

Early definitions of forms stated that organisations possess specific features creating differentiation amongst themselves to achieve social visibility and distinction. Hannan et al. (1977, 1984, p. 156) outlined four aspects that create sharp distinctions amongst organisations. Firstly, the overall direction of the organisation as encapsulated through corporate mechanisms such as vision, mission, and goals. Collectively, they provide a sense of direction and set the overall organisation goal. Secondly, the internal authority structures used to approve various organisational decisions, coupled with the implementation of vital operational processes outline a form as well. This feature can be understood in great depth by the extensive work of Baron and colleagues (Baron 2004; Baron et al. 2002) that studied employment patterns in the start-up technology companies located in the Silicon Valley. The research yielded five different employment models: star, engineering, commitment, bureaucracy, direct control. Each model had implications for employee control, talent selection criteria, and workplace engagement, and had underlying implications for authority structures. Thirdly, the core technology used by organisations can also define forms. In this regard, research by Wade (1996) showed that a clear delineation existed between organisations that created microprocessor designs and those that used those designs to manufacture microprocessors. Lastly, marketing strategies also determine organisation forms. Ingram (1996) analysed the impact of naming strategies for hotel chains. His research proved hotels adopting a hotel-chain name had better chances of survival as opposed to hotels that did not. Organisations possessing similarity in these core features are combined into a single organisation category referred to as a population (Carroll et al. 2000a, Chap. 4). Arguably, organisations possess additional features, but these are considered periphery features without commonality amongst organisational members (Hannan et al. 1977, 1984).

Definition 4.2.1 (Features-Based Organisations Forms) *An organisation form is defined based on similarity of features, with organisations with similar features classified as a single category.*

The critical advantage of delineating organisation forms based on these four

key features is its simplicity. It is quick to apply and allowing researchers to develop meaningful comparisons. The features-based definition fails to capture the dynamic nature of organisations that establish multiple engagement patterns with relevant stakeholders in the environment (Hannan et al. 2007); we use an illustrative example of two organisations.

Suppose we have two organisations that seek to provide residential housing for its customers. We also assume that both organisations use standard management structure to deliver on their intended objectives utilising latest construction technologies to build energy-efficient houses, and both are targeting middle-income residents. Up to this point, we can assume that both organisations are similar and part of a single organisational category. Now, suppose that the second organisation is an entity owned by the Government and the second is based on private investment, can we assume the same form? The answer is yes if we define organisation forms using features as a definition and is not a straight yes if we use a social constructed definition. Nevertheless, the ownership structure weighs heavily on our cognition, as we are unable to determine its placement.

Organisations are dynamic entities with multiple engagement patterns with the environment and a rigid definition of stipulating features limits granular differentiation amongst organisations. Features are not readily observable, making it challenging to delineate the form. For example, it is tough to find internal authority structures of organisations in their published documents (Carroll et al. 2000a, Chap 4.).

Another parallel definition delineated forms using internal structural arrangements. However, if organisations change their internal arrangements, does it invalidate their form (Pólos et al. 2002b). As an example (albeit outrageous), if banks decided to close their retail outlets—an internal arrangement for cost-saving—and solely focus on digital banking, do they stop being a bank? We mentioned the work of Baron et al. (2002) on employment blueprints, even this on its own, constitutes as a valid definition of forms based on employment patterns.

Due to the limits of a features-based definition, research on organisation forms, entered its second phase, by defining the presence of social boundaries.

4.2.2 Final Frontier

Hannan et al. (1985) explored the concept of defining an organisation along the dimensions of their niche-width—positions an organisation can take along a continuum of possible environmentally resource configurations. It states that organisations are selected to a particular orientation based on resource availability without any considerations for competitive events—that is the fundamental niche (Freeman et al. 1983b). Organisations fall under two broad categories called generalists and specialists. Generalists operate under a diverse set of resource configurations with specialists focusing on a narrow set of resource configurations (Hannan et al. 1977). The critical element in defining the organisation using niche-width is the identification of social boundaries by studying:

> "social network ties, closed flows of personnel among a set of organizations, technological discontinuities, social movements articulating the interests of a set of organizations" (Carroll et al. 2000a, p. 63)

Researchers need to understand multiple variables such as technology used, cost structures, the social networks used between organisations and customers, presence of actors that can produce a collective social action, and the acceptance of the form, to ascertain precise location of such boundaries. Furthermore, researchers are required to be cognizant of factors that blur boundaries as organisations tend to recombine their operations to develop new products/services. The boundaries are defined with the aid of fitness functions, which are mathematical formulae that define the range of possible resource tolerances (Hannan et al. 1985).

However, the knowledge required to understand the precise location of these boundaries is intricate as social processes either segregate the boundaries or blur them, requiring a significant cognitive load on researchers to spot discontinuities in the social forces. Nonetheless, boundary-based forms required significant cognitive load on researchers to make *a priori* assessments of the population they were studying. The lack of consensus meant differing results/interpretations for researchers and challenging to develop generalisable

results (Pólos et al. 2002b).

Twenty years later from the original conceptualisation of boundary-based forms, Pólos et al. (2002b) embarked on an ambitious project to develop a revised understanding of organisational forms reducing researcher load while enhancing the theoretical understanding of organisation forms—we refer to this as socially-engineered forms.

4.2.3 The "Social" Force

The problems with features and boundary-based forms led to a new definition incorporating previous definitions—features and boundaries—to define organisations forms. This research effort captured the social nature of an organisation form, and the idiosyncratic behaviour various stakeholders play in developing them. Two pieces of works were instrumental in developing this sophisticated understanding. Pólos et al. (2002b) outlined the first development effort by proposing that organisations are composed of and adhere to a series of social rules restricting their performance ability. That an organisation cannot choose to do what it feels; instead, it does what is expected from it. These codes are developed for each organisation that restrict its operations and determine possible resource flows.

Definition 4.2.2 (Organisation Codes) *A series of socially developed features restrict the organisation's operation at the population level.*

This element of *expectation* is the underlying force of inert organisations (see Hannan et al. (1984) for implications for inertia). Additionally, another contribution of this paper was the concept of nested identities. It explained that certain organisation forms are part of higher-order forms refining the concept of organisational categories. A prime example, is the industry classification systems used by various regulatory bodies to place organisations (we touch upon this later in the argument)

However, the research effort left unanswered some questions such as the development of codes, implications of code (un)compliance, and partiality of code membership. These knowledge gaps led the same collaborators to develop a

more formal and precise understanding of forms (Hannan et al. 2007, Chaps. 1-4)[1]. They position audience groups (briefly explained above and detailed explanation below) as the leading proponents for organisation form definition. Their power stems from their control over critical resources such, end customers in the form of sales, and bankers in the form of capital. Audiences *authorise* the existence of an organisation *in a category* enabling access to resources. HPC outlined that creation of forms as a three-phase process, as shown in the figure below.

Figure 4.1: Three Phases of form creation (Hannan et al. 2007, p.75)

The purpose of outlining the form emergence process is for readers to appreciate the complex environment organisations operate in, to justify their existence; just by being *in* business, an organisation is *not in* the business. The society continuously evaluates organisations across several dimensions and criteria that justify their existence. It goes back to the original premise of organisation ecology—the environment selects the best organisations (see Hannan et al. (1977)). This maxim is evident in the organisational form emergence process. We endeavour to provide a brief overview of the process to present a clear picture for our readers and purposefully omit the technical details to maintain brevity.

Phase 1—Class

This process starts in an unstructured space between two key roles: audiences and producers. The latter is self-explanatory, an organisation that is offering a product/service. The former is a much broader role encompassing a variety of social groups; direct consumers of the product/service, regulators,

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[1]The work they developed has tremendous influence in organisational ecology literature. They put significant effort in developing a comprehensive understanding of organisations. Hence, when referring to this work and its contribution, we use the term 'HPC' or 'HPC Framework' for reference purposes.

suppliers, policymakers—essentially, any group engaging with the organisation is an audience member. However, audiences and producers need a medium to exchange information in this social setting. Prevailing natural language serves as the universal medium between the roles—this point is essential as the form is developed throughout its history, and language is used as the medium to convey intrinsic meaning. For example, the moment we mention a "hotel" audiences start to develop their own mental representations with a set of features we have experienced either through experience or recounting the experience of individuals within our Blau Space. A prime example is a the author, his own quantitative inclination allows him to research in a highly quantitative knowledge domain. Similarly, we as individuals have shared vales with other individuals in proximity to our Blau Space.

During this time audience groups spend tremendous effort in understanding the features demonstrated by organisations. Audience groups start to group the features by an underlying commonality resulting in similarity clusters.

Definition 4.2.3 (Similarity Clusters) *Small Clusters on which audience groups collate information regarding interacting organisation.*

Factors such as technology, network ties, geographical proximity, audience engagement patterns, help determine the commonality. Recall, these are the same factors included in definitions of features-based and boundary-based organisation forms. A classic example of similarity clustering is the emergence of microbrewery and brewpub organisation forms (Carroll et al. 1991b, 2000c). These forms possessed features vastly differently from the dominant mass-producers along dimensions such as consumers, production technology, and size. It is also an example on the concept of nested identities. The overall category is brewing which is further classified into sub-categories of: mass-brewers, brewpubs, craft brewers, and brewpubs. However, at times audience groups are unable to put them in the same league as mass-producers and overtime developed a distinct cluster.

Do all audience groups expend cognitive forces to develop similarity clusters? Only enthusiastic audience groups would endeavour to develop clusters with non-active audience members just following. Once clusters develop, the

audience moves to label them, assigning a readily identifiable tag from the applicable language used between audiences and producers. At this point, the power of language is important. The objective of these labels is to use a readily identifiable signal communicating the *meaning* of the label.

Audience members apply various labels to every developed cluster; in turn, each cluster is cross-tested by other audience members. Through this cross-testing the audience is endeavours to generate consensus. Collectively, the audience group tests the labels of other members and check its 'applicability'—the ability of the label to encapsulate and communicate the meaning of cluster delineated. A high-level consensus on the label's applicability promotes the delineated cluster to a *class*.

Definition 4.2.4 (Class) *A class is a cluster with audience groups agreeing on its meaning.*

However, this implies the consensus *must* cross a certain threshold, depending on the social understanding and agreement.

Phase 2—Category

Phase 2 requires significant cognitive from active audience members as they endeavour to develop the *meaning* of the labelled class. Each class undergoes a detailed review of codes and tested against the labels communicability; that is, does the label capture the meaning.

Audience members develop a schema for the cluster that restricts the organisation's performance ability—it determines what they can and cannot do. It is these schema codes that Pólos et al. (2002a) mentioned in their previous research effort, at that time, they positioned the audiences as a passive force for code development, in contrast with the HPC work in which audiences are an active force. Each audience member develops their schema to capture the meaning of the label developed in Phase 1. Developed schemas are cross-tested to ensure harmony in meaning. At this point, the class undergoes three crucial milestones. Firstly, during the cross-testing, audience members lack the luxury to check each feature developed in the schema and resort to the concept of minimal test code.

Definition 4.2.5 (Minimal Test Code) *A minimal set of features the audience segments uses to determine if a organisation is a member of the class under consideration.*

If an organisation meets the minimum test code, they assume remaining features of the schemata are met and fulfilled by the organisation. Secondly, each audience member also develops taste preferences of the producer's offer, in regard to their social position. Recall, we mentioned the concept of Blau Space. This space also determines the audience group's tastes preference with respect to the organisation. Essentially, these tastes outline the potential demand (or intrinsic appeal) of the offering. Hence, the tastes of the organisation are codified for the organisation. Thirdly, the audience members try to develop consensus on their efforts to promote the class into a category.

However, not all audience members may agree to an organisation's placement in a particular class. The novelty of the HPC Framework is an organisation's membership partiality. Organisations are assigned GoM (grade of membership) scores reflecting the organisation's conformance to the taken-for-granted schema. Each feature is mapped to a $0 \rightarrow 1$ score interval inclusive of both numbers. A zero (0) score denotes non-compliance, and one (1) score implies full compliance to the schemata. Implying, organisations in a certain class can have various GoM scores. One one extreme we may have organisations with a full compliance to the code, and on the other extreme we have organisations with zero compliance. Zero compliance means the organisation is *not* part of the class. If developed visually, this information shows the distribution of GoM score for organisations under analysis, thus determining the level of taken-for-grantedness of the schema. In a population with dispersed GoM scores over the 0-1 range, it shows the population contrast is low, reflecting the audiences' behaviour—they have not entirely accepted their developed assumptions. Consequently, scores concentrated over specific ranges indicate a high contrast and stable category.

Definition 4.2.6 (Contrast) *A quantitative measure allowing researchers to determine the level of taken-for-grantedness of the class.*

Coupled with the concept of contract is fuzziness. Organisational ecologists use the term to denote a category with low contrast or a category experiencing shifting contrast scores.

However, this does not mean contrast does not change, it does. Significant or quick successive changes in organisational contrast imply a turbulent category that can potentially increase organisational mortality hazard as tastes, social positions, and niche of organisations are continuously unsettled leading to unpredictable performance levels (Hannan 2010). However, once the audience segments agree on the schematisation requirements, the Class is promoted to a Category, with the process moving to Phase 3.

Phase 3—Form

Once a category is developed, it comes under the purview of general audience members and undergoes a significant legitimation test on the work completed by the active audience members.

Definition 4.2.7 (Legitimation) *The level of taken-for-grantedness of a set of assumptions, features, or other organisational matters.*

Legitimation requires general audience members to accept the work completed, with minimal modification on the developed clusters, labelling, and schemas. Once this legitimation crosses a threshold, the category is promoted to a form, becoming an established, visible, and active member of the organisational society.

Definition 4.2.8 (Form) *A category with a very high-level of taken-for-grantedness.*

One a category is developed into a form, two important issues requiring highlighting: organisational identity and multiple category memberships.

Identity. At this point, the concept of identity becomes exceptionally relevant. Identity is a unique aspect of socially engineered forms and considering an organisation's ability to conform a minimum set of features in the schema. It is also the mechanism by which an can claim membership in multiple categories.

Hannan et al. (2007, p. 42) use the distinction of universities such as Harvard and Hamburger University (from McDonald's) to show both conforming to the 'university' label. However, each has certain idiosyncratic features that blur the label. This is primarily due to identity, whereby the form becomes a social construct and acts as the primary mechanism for claiming multiple category memberships.

Multiple Category Memberships. Multiple category membership confuses the audiences as they are unable to *understand* and determine the performance restrictions. Furthermore, it impacts the organisation GoM score in each respective category, as it never becomes a full-member in each category thus impacting resource flows, appeal positions and legitimation of organisation membership (Hannan et al. 2007, Chap. 5; Pólos et al. 2002b). Built upon the HPC framework Hsu et al. (2011) developed the first wave of theoretical integration, to develop a coherent understanding of identity. If the audience believes an organisation is conforming to schemata of 2 labels, and conformity is taken-for-granted for one of the labels, then it implies that an organisation's grade-of-membership, intrinsic appeal, contrast contribution, and taken-for-grantedness are higher for the audience has attached and not a previous label attached to the organisation—audiences determine the fate of multiple category organisations. Future research in multiple category memberships understands implications of such behaviour (Goldberg et al. 2016; Kovács et al. 2015; Pontikes 2012).

4.3 Empirical Applications

Organisation forms may appear as a theoretical concept lacking any empirical application. We now outline a few studies showing the relevance of organisation forms. This is by no means a comprehensive review of the empirical applications, but a selection to show applications of the HPC Framework.

Category Labelling. Ingram (1996) researched naming strategies for hotels and their impact on organisation mortality. It may seem the research is not related to organisation forms, but he researched a very crucial part of the form

emergence process—the labelling of categories. At that time, the category was experiencing the advent of branded hotels, offering consistent service and performance level—in HPC framework terms, creation of a new label. His research covered hotels from 1896–1980, requiring hotel owners to choose between two naming strategies; (1) to label a hotel based on the local community; or (2) to use a name from the overall chain. Essentially, forcing producers to apply a label determined by the audience group. His research concluded that naming strategies based on a chain improved the life chances of that hotel due to repeat business from customers. In HPC Framework terms, the utilisation of an appropriate label signifies a hotels conformance to the established schema, enabling patrons to satisfy their minimal test code, leading to higher intrinsic appeal (at a category level). In comparison to locally-branded hotels when a patron is unable to develop a perception of the offer, thus degrading environmental alignment and increasing mortality hazard for individual hotels. This research also shows the impact intrinsic appeal has on organisational mortality. Since the audience group knew that a particular hotel belonged to a *branded* category, they were able to develop default perceptions of the hotel's offering.

Similarly, McKendrick et al. (2003) analysed the disk array market to understand the emergence of organisational form. A unique element in their research is the type of category labelling they opted, which was the entry mechanism of an organisation. Their research applied two critical labels on firms: *de novo* (new entrants), and *de alio* (entrants from another population). From a theoretical point, the schematisation of these two labels imply organisational action and not an organisation's claim to a category. As expected from the audience segment, they positioned *de novo* firms as better suited to the disk-array market reducing the mortality hazard of the population, whereas *de alio* increased the mortality hazard. Audiences perceived *de alio* organisations as not belonging to the market, due to their presence in another category, hence confusing audiences. In terms of labelling dynamics, the proliferation of *de alio* entrants confuses the audience group, reducing appeal and leading to higher mortality hazards.

Schematisation and Partial Membership. Bogaert et al. (2010) is a prime example of the HPC framework in two respects. Firstly, their detailed account of Dutch accounting associations' efforts in developing schema to codify the "accountant" label resulted in tremendous turbulence in the population delaying the legitimation of the organisations. The high fuzziness was caused due to the evolving interpretation label and its associated schema. Secondly, their research developed a working model of partial memberships by classifying membership of accountants to respective accounting bodies. Audit organisations that had dispersed membership were assigned a lower GoM, whereas concentrated memberships had a higher GoM. A dispersed membership implied that the audit organisation is still confused about the "accountant" label and thus cannot decide to which association it belongs to, hence, its GoM for the label is low. From the perspective of methods, it shows researchers have the flexibility to construct a suitable measure for grade-of-membership scores as the HPC framework outlined the general principles of its application.

Whereas research by Bogaert et al. (2010) depicted audience confusion leading to implications for mortality hazard, the research of Kuilman et al. (2009) provided an alternative perspective. Their research analysed the impact of foreign banks entering the Shanghai banking market. Similar to Bogaert et al. (2010), Kuilman et al. (2009) utilised the notion of membership fuzziness to determine the density trajectory (density dependence is covered in Chapter 5). Their research provided evidence of increasing density for banks with low GoM (foreign banks) in a category with, supposedly, high semantic consensus.

Community Forms and Symbiotic Legitimation. However, does this the HPC framework apply in the context of commuinty ecology? The most notable work in this regard has been by Martin Ruef's (2000) analysis of the healthcare forms in the United States from 1964 – 1994. His work was published seven years before HPC's framework, but one can draw parallels. Ruef mentions the use of non-hospital birthing centres gained prominence as a consequence of active social movements by relevant healthcare audience groups. Similarly, the authorisation drive (in the form of legislation) gave rise to organisation forms such as the HMO (Health Maintenance Organisation). The research covered 48

different organisation forms and tracked the similarities in their identities, implying a complex research effort. His research confirmed a vital hypothesis: that organisation forms with similar identities experience a symbiotic effect. If the count (density) of identity is increasing, then other similar identities do see increases in as well—a cross-population density effect impact. Secondly, his qualitative review of the healthcare industry and various social forces—legislation, audience effort, audience labelling—proves (albeit retrospectively) the applicability of HPC framework to understand organisation forms. Furthermore, his research expanded OE's world by researching a community of organisations, with a commonality.

Multiple Category Punishments. Zuckerman's (1999) work on the American equity markets is another prime example of the application of the HPC framework. Similar to Ingram's work, this research pre-dates the HPC framework and is within a different literature context[2]. His research identified negative aspects associated with multiple category membership. His research shows, as organisations expanded categories or conformed to multiple categories, stock analysts were unable to report on an organisation's performance. Their definition of expanded categories emanated from the organisation's operational activities, as an organisation expanded its operational activities into other categories, the confusion (fuzziness) increased.

The analysts executed the role of audience members in HPC's framework that are highly active and continuously applying GoM scores to organisations under their purview. Analysts undertake a significant cognitive load developing similarities between organisations to place them into the "correct" audience sanctioned categories. Organisations that had expanded categories were covered by the analysts from the focal category and not expanded category. From a stock price movement perspective, an organisation benefits from more analyst coverage as it becomes more visible to potential investors. This is a parallel point to the study of Hsu et al. (2011) on composite labels and its implications. In this case, the implication is reduced appeal by stock analysts to cover the

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[2]The paper is not strictly part of the organisation ecology domain, but is testament to the theory developed in organisation ecology.

company in their analyst reports.

Secondly, the processes described to attract the attention of the analysts suggests the force of legitimacy at play. Organisations strive to conform to the established analyst schema, increasing investor attention (audience legitimation and appeal) and fund allocations (increasing resource flows). However, if an organisation is unable to satisfy the schema, it is deprived of these benefits. This is like GoM's as proposed by HPC with high GoM's leading to increased intrinsic appeal and taken-for-grantedness[3]. Our interpretation of the article is that the author uses a custom GoM referred to as the "coverage mismatch" to calculate organisation specific GoM with the established schema. The two points outlined above show that although HPC framework was developed much later, its technical prowess explains the underlying processes in precise detail of social forces at play in determining the existence of organisations.

4.4 Our Theoretical Preference

Given the detailed review of socially engineered forms definition, it is evident we ascribe to this latest definition and intend to use it for this research project as this definition provides a harmonious theoretical integration to other aspects of organisation ecology. The definition extends theories of density-dependence and organisational niches (see below) to provide a complete picture of the population. The relevant integration will be covered in the respective sections.

Our research context contains multiple audience segments that influence population hazard rates. For example, we have pilgrims as direct consumers for hotel services; they are continually evaluating the service provided by hotels. Government agencies that are seeking to improve the urban infrastructure to enhance pilgrim management and experience. Landowners and/or investors that want to develop suitable financial returns from their projects. In such a complex social melting pot, a robust theoretical framework to accommodate,

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[3]We understand that simplistic understanding changes in the context of segregating processes, where the position of the organisation in niche and/or market position determines the taken-for-grantedness of the organisation.

explicate, and control these variables is required. The new definition provides the necessary theoretical framework to analyse the forms embedded within our community population, that is not possible within old definitions of forms.

Our theoretical preference does not position the remaining definitions as impractical. Rather, our selection is a decision to explicate the complex social environment of our population to provide a more robust understanding of our social environment. In certain situations, given data limitations, it is possible to apply simpler definitions to understand the social environment.

4.5   Research Gap

Our literature review on Organisation Forms suggests the broad applicability of categorisation of organisations. Most research in organisation forms and identities has concentrated on similar identity patterns such as brewing (Carroll et al. 1991a), banking (Barron 1998; Lomi 1995), healthcare (Ruef 2000), movie studios (Negro et al. 2006), hotels (Ingram 1996), disk-array manufacturers (McKendrick et al. 2003). However, most of these research programs have concentrated on similar identity patterns. Whereas our research is seeking to make a modest contribution by analysing schematisation efforts in a community ecology perspective of dissimilar identity patterns. We highlighted hotel and retail share a symbiotic link in the context of Makkah. We would like to further understand if the there is a common schematisation at play for the hotel and retail populations.

4.6   Makkah's Audience Segment

Audience members play an essential role and are crucial in the categorisation and institutionalisation of forms. Table 4.1 shows the main audience groups with a list of individual actors for our research context. We provide this information to highlight the multitude of players that can influence organisational form emergence. Before we begin we need to assume the level of legitimation for our organisational categories—hotels and structured retail. We assume that organisational categories are sufficiently legitimated.

Assumption 4.6.1 (Category-Level Legitimisation) *The hotel and retail categories are fully legitimated categories.*

Some readers in organisation ecology may object to our assumption above, as things are always changing in organisational environments. However, we have proceeded with this assumption because, pilgrims have been visiting Makkah for a very long time. Granted, in the very early part of the population's history there was no information on retail establishments, but some level of hotels existed. Therefore, from a perspective organisation categories, these have existed for a very long time.

Government Bodies	Consumers	Ancillary Audience	Real Estate Developers
General Authority for Statistics (GSTAT)	Pilgrims	Airlines	Jabal Omar Development Company
Makkah Municipality	Tour Operators	Booking Websites	Umm-ul-Qura Development Company
Ministry of Commerce and Investment			
Ministry of Hajj and Umrah			
Ministry of Tourism			
Public Investment Fund			

Table 4.1: Categorical list of sample audience members

4.6.1   Government Bodies

There are multiple audience groups, shaping and potentially regulating the population's environment. General Authority of Statistics (GSTAT) is responsible for all statistical information in the country's economic sectors. It records, maintains, and publishes periodic economic information across a variety of indicators such as population, housing, trade, GDP and others. GSTAT's role in the HPC framework can be influential depending on the stage of the form emergence. Why? As the country's official statistical body, it needs a classification schema to place an organisation and record their activity. Hence, it may use its power at the initial stages of a new organisation and provide the initial seeds for remaining audience members to apply similarity judgements leading to the eventual creation of organisation forms. Alternatively, they may attach new organisation forms, to their existing classification structure of economic sectors and position it as a sub-form. As researchers, this can be problematic for data collection (GSTAT 2016b). In the current research context, we believe, their

power is somewhat limited in defining new organisational categories, as GSTAT uses their own method for organisational classification (GSTAT 2018). Furthermore, we believe the Ministry of Tourism is the dominant audience member developing the required codes for hotel populations.

It appears there are different players at the municipal level. Firstly, Makkah Municipality (2017) is the primary municipal entity governing the city's development patterns, some licensure requirements, developing urban growth plans, issuing various construction permits, and conducting inspections to detect any violations. The municipality may not be active in the creation of organisation forms, but it is active in enforcing the taken-for-granted assumptions of a particular form. For example, if a new hotel is developed, the municipality may not grant it an operating license, because it is unable to issue a license from its organisational classification structure. Furthermore, the municipality is also the audience group to impose penalties on organisations that violate stated goals. Under the HPC framework, organisations are punished for non-conformance (Hannan et al. 2007, Chap. 4). Secondly, there is also Royal Commission of Makkah City (RCMC 2019) another body with broad goals to improve Makkah's competitive environment. At the time of writing, their scope is unclear, and how they will work with Makkah Municipality to achieve those goals. Our preliminary analysis suggests, collectively, these bodies may not hold significant power in determining the category requirements. We believe, they simply follow the rules set by the Ministry of Tourism.

We also have a relatively large collection of Ministerial bodies with oversight in Makkah. For example, the Ministry of Commerce and Investment is the main body to grant licenses to the organisation seeking to open their offices in the Kingdom. Ministry of Hajj and Umrah 2020 are essential, as they regulate various activities of the pilgrims' experience. Furthermore, the Public Investment Fund are leading significant efforts in attracting investments for Makkah city, that is bound to change the organisational landscape of the city (PIF 2017). Similar to the previous two points, we believe this group does not play an active part in determining the organisation forms.

Lastly, the Ministry of Tourism is the prime audience segment for our research context. Initially, it was called the Saudi Commission for Tourism and

National Heritage (SCTH), it was recently granted the status of a Ministry (Arabnews.com 2020; Tourism 2020a). The Ministry is the primary body in Saudi Arabia, regulating the hospitality industry in the Kingdom that develops, enforces, and apply's hotel licensure requirements. The English version of the website shows its coverage on the hotels and furnished apartments categories, with a section of the website dedicated to currently licensed establishments. In the Arabic website[4], the scope of the Ministry is quite broad. It regulates different types of hotel categories these are hotel villa, road-side hotels (motel), resorts, tourist lodges, hotel apartments, heritage hotels, eco-tourism camps, agriculture inns (rural break), and heritage hotel villas. Collectively, the Ministry refers to them as *tourist accommodations*. This information is more aligned to the requirements of the HPC Framework. The Ministry is a critical audience member outlining the features for each category. We believe our research efforts should concentrate on identifying relevant information contain within the web pages of the Ministry of Tourism's website.

4.6.2 Consumers-at-large

The second group of audience members are pilgrims consuming offers developed by our community population. Pilgrims represent the majority of our group, as they seek to stay at hotels to perform their religious obligations. We believe, in Makkah, the consumer is critical in defining offers for hotels. Pilgrims represent a broad spectrum of people that are demographically, racially, and financially different, that institutionalises a wide variety of tastes preference for our organisation form category. They are also the group which help to outline the intrinsic appeal for hotels and retail organisations (Hannan et al. 2007). The potential options for hotels to position themselves on this taste profile spectrum are large and varied. Once hotels define, their taste profile, they cannot change it due to the licensing and physical requirements that dictate the organisation's membership requirements. A hotel's taste profile is embedded in its core physical and management structure with such changes being

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[4]https://scth.gov.sa/TourismInvestment/TourismLicensing/Pages/Tour1.aspx (date accessed: 17-Feb-2020).

costly projects raising the mortality hazard (Barnett et al. 1995; Hannan et al. 2003a,b). For example, if they wish to cater to pilgrims on a tight budget, they certainly will not design rooms meant for 5-star hotels and based on a symbiotic population it will impact the retail population, as well. If a vast majority of pilgrims represent, a relatively mid-low-end of social and financial positions; it follows retail developers to cater to this segment, based on our premise of community population sharing symbiotic effects. The subsequent impact of offers in one population can impact offers of the other population. Similar to pilgrims, tour operators influence the taste profiles for our categories, albeit to a lesser extent.

4.6.3   Ancillary Audience

These are various airlines or hotel booking sites that store information about the hotels. They directly do not shape the hotels but engage in a limited way and are located on the periphery of the audience group. They may have inactive involvement in defining the organisation forms but are extremely crucial in providing avenues for audience engagement patterns.

4.6.4   Real Estate Developers

Lastly[5], we have the Real Estate Developer audience group. This group has an active part in developing real estate projects within Makkah. We have provided two well-known organisations assisting the Government Bodies to achieve their real estate objectives, and offer their own real estate products to the Makkah Market by using their own purchased land or a long-term lease mechanism from the Government. The main role of Real Estate Developers, in organisational ecology terms, is producing various offers (in form of real estate products) for the consumption of pilgrims (in the form of hotels), resident Makkah Population (in terms of houses), and Government Bodies (in terms of development projects). We believe, real estate developers indirectly embed the social schematisation requirements as part of their real estate development process, in form of market research studies (Miles et al. 2015, Fig. 1.1). This

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[5]Section largely drawn from Author's professional real estate experience.

positions real estate developers at the forefront of interaction with consumer segment for organisational form co-creation and in return they received an inflow of resources to cover their cost structure. At time, the Real Estate Developer may also have an interest in an organisation form (for example hotel or retail) to generate a continuous stream of resources (in the form of cashflows).

4.7 Makkah's Organisation Forms

In this section we conduct preliminary research to identity current organisation forms in Makkah pertaining to our populations, enabling us to: understand our poulations, develop working assumptions, and eventually develop relevant hypotheses. Firstly, we elaborate the tourist accommodation category of organisation forms, followed by retail organisation forms. Subsequently, we define our organisation form and the unit of analysis. We then discuss some important social forces in Makkah that led to our hypotheses in Chapter 8.

4.7.1 Tourist Accommodations

HPC framework provides a flexible framework to develop sharp boundaries between our populations while being cognizant of partial memberships. The author is an audience member engaging with these forms while visiting the Grand Mosque to frequently to perform their religious obligations; presenting an exciting avenue to study Makkah's organisation forms as a researcher and as a passive audience member. We adhere to the categorisation used by the Ministry of Tourism for tourism accommodations where its regulations define tourist accommodations as:

> "Any place mainly provides the service of overnight stay (for guests & tourists), for charge, whether this place is a hotel or any other residential unit, which serves the same purposes, as well as any other supporting services." (Tourism 2020b, p. 4)

The Ministry of Tourism subdivides tourist accommodations into two subcategories, as shown in the Table 4.2 below.

Complete Service Facilities	Self-Service Facilities
Hotels	Furnished Residential Units (FRU)
Heritage Hotels	Tourist Inns
Resorts	Environmental Tourist Camps
Road Hotels (Motels)	Environmental & Agricultural Inns
Hotel Rooms	
Hotel Villa	

Table 4.2: Tourist Accommodation Categories

This is similar to the concept of nested identities as described in the HPC Framework. The high-order identity is Tourist Accommodations decomposed into two distinct categories, which is further decomposed into respective sub-categories.

Ministry of Tourism allocates a star rating from 5-star to 1-star (high to low) for all sub-categories of the complete service facilities category. For self-service facilities, it allocates a First, Second, Third, and Fourth Class (in descending order) rating to organisations. Even though these are two distinct categories as per the Ministry of Tourism's website, but are they truly *distinct?* Answering this question requires us to analyse the features values of organisational categories present in Makkah.

We reviewed both the English and Arabic websites and identified that only Hotels and Furnished Residential Units are present in Makkah City, the remaining organisation forms are not, and given the apparent similarity between the two categories, we proceed with conducting a detailed analysis of their schema to achieve relevancy and focus.

Code Categories

Ministry of Tourism operates two schema for each tourism accommodation category—General and Makkah & Madinah-specific[6]. We started our analysis with the General Schematisation requirements in English. Ministry of Tourism

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[6]Readers can refer to Appendix A that contains the English version of the Ministry's code requirements. Please note that the Arabic version did have more requirements which conflict with the English versions, we implore readers to always refer back to the Arabic version in cases of conflict.

applies the General requirements to all cities in Saudi Arabia, except Makkah and Madinah, we as we expected. We compared English schematisation requirements to the Arabic[7] requirements, and the latter did contain additional information. We took the Arabic schematisation requirement as final, in instances where discrepancies were identified. The composition of each schema is provided in Table 4.3 (below) showing the comparisons in number of features. We did not identify any difference between the schema of Furnished Residential Units (FRUs) for Makkah and General and proceeded with combining them for our analysis (the details are covered below);fundamentally, they both followed a single schema.

Category	Hotel-General	Hotel-Makkah	FRUs
External Buildings	9	7	9
External Hotel Entrance	11	10	12
Front Offices (Reception)	33	34	22
Lobby	24	23	21
Public Toilets	14	14	15
Elevators & Stairs	15	17	15
Corridors	20	20	20
Rooms	112	109	105
Room Toilets	55	56	54
Rooms for People with Special Needs	22	22	19
Rooms for People with Hearing & Vision Disabilities	9	9	8
Coffee Shop	26	26	24
Restaurants	29	28	–
Public Facilities	20	19	13
Recreational Facilities	28	–	21
Central Kitchen	4	4	–
Management & Employees	11	8	7
Total	**442**	**406**	**365**

Table 4.3: Number of Feature Values

As expected, the Ministry of Tourism removes the recreational facilities category for Hotels in Makkah. Socially, pilgrims are inclined and focused on their spiritual enlightenment, in comparison to their physical well-being. Additionally, the excessive walking required to perform religious obligation renders pilgrims extremely tried for a workout. This serves as a prime example on the nature of organisational codes, showing how social understanding can put

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[7]The author has a working, but rudimentary knowledge of Arabic. In some cases, we utilized Google Translate to provide some clarity on the meaning.

restrictions. In any part of the world, hotel patrons will *expect* recreational facilities in a 5-star hotel as part of their stay, even if they do not use it.

Similarly, FRU's are expected to have a kitchenette which removes the need for a central kitchen to supply various dishes to the restaurant at the organisation level. Remaining differences between schema are marginal and expected since the type of tourist accommodation is changing with inherent tastes profiles. It would have been interesting to conduct an in-depth analysis on the evolution of such taste profiles. However, due to insufficient data we are unable to delve deeper into their taste profiles.

Based on this preliminary analysis, we can presume we will not see a significant differences between the two categories, which becomes paramount for understanding social dynamics. We presume high similarity in features implies similarity in selection mechanisms.

Auxiliary Assumption 4.7.1 *Similarity in feature value implies similarity in selection mechanisms.*

Readers in organisation ecology may question our assumption. Our rationale is as follows: since both organisational categories are similar from a social perspective, it follows the responses from the audiences will be similar in nature.

Our assumption is still ambiguous lacking a quantitative threshold to *define similarity.* Therefore we believe, a similarity of $\geqslant 60\%$ is a suitable starting point. We are aware this is an arbitrary classification, but necessary in absence of detailed data on the development of features for the two organisational categories. If the similarity score between these two categories (Hotels and FRUs) is $\geqslant 60\%$ we will consider them as belonging to a single organisational category.

Auxiliary Assumption 4.7.2 *A similarity score of $\geqslant 60\%$ implies similar organisational categories.*

Now we turn our attention to the treatment of detailed features value as employed by the Ministry of Tourism.

Code Structure & Treatment

The structure of the feature values—individual requirements—is somewhat confusing as employed by the Ministry. The individual schema stipulate the requirements for obtaining a tourist accommodation license by meeting the requirements for a commercial license (referred to as *license* by the Ministry) and then meeting the minimum requirements for a facility license (referred to as *class*); an example is provided in Table 4.4.

Feature Value	5*	4*	3*	2*	1*
Lobby area more than 160 m^2 for each 100 rooms					
Lobby area 100 – 160 m^2 for each 100 rooms	C				
Lobby area 50 – 100 m^2 for each 100 rooms		C	C		
Lobby area less than 30 m^2 for each 100 rooms	L	L	L	L	L

C: Class; L: License;

Table 4.4: Example of MEPNC Code in Schema

For example, the Ministry mandates (for licensing) the minimum requirements for a hotel lobby, needs to be at least 30 square meters for 100 rooms. However, at the same time, it has mandated the requirements to qualify for a specific hotel class (5-star for example) hotel would need to have a lobby area of between 100 – 160 square meters per 100 rooms. Therefore, if a 5-star hotel meets the lobby requirements, it meets the requirement for its class *and* the license requirements. We have referred to these as Mutually-Exclusive Pseudo Nested Code (MEPNC), as adhering to one code renders the other null and void in a nested code structure. To streamline MEPNC's we treated them as shown below.

If a feature in a sub-category has a higher *class* requirement and a lower *license* requirement, then we merged these two codes at the *higher feature level*—as shown by C/L in the table below. From a real-estate development perspective, it is illogical for investors/entrepreneurs to build to meet the minimum license requirement when the goal is conformance to a higher category. Such things require re-investment into the real-estate asset class. Hence, it is better to set minimum requirements at a higher level. Accordingly, this treatment renders the

Feature Value	5*	4*	3*	2*	1*
Lobby area more than 160m^2 for each 100 rooms	Supp.	Supp.	Supp.	Supp.	Supp.
Lobby area 100 – 160m^2 for each 100 rooms	C/L	Supp.	Supp.	Supp.	Supp.
Lobby area 50 – 100m^2 for each 100 rooms	n/a	C/L	C/L	Supp.	Supp.
Lobby area less than 30m^2 for each 100 rooms	n/a	n/a	n/a	L	L

Supp.: Supplement; C: Class; L: License; C/L: Class/License n/a: not applicable

Table 4.5: Example of Treatment of MEPNCs

lower codes as not applicable. If a feature value exists above the class/license feature, we treated this as a supplement, implying, the hotel does not need to conform to it, but it *may* if it chooses to do so. Lastly, features with individual license requirements were coded as license, with a higher value as a supplement.

It may seem strange that low-star hotel should have higher features as supplements—implying that they can "upgrade" the class. Although, it is complicated to change the physical properties of a lower-rated hotel to an upper-class, its plausible with significant investments. Whether investors choose to or not, is an entirely different discussion, but importantly, the codes *do not restrict it.*

Code Comparative Analysis

Tables 4.6 and 4.7 shows a comparative analysis of hotels and furnished residential units, respectively. We see that significant differences exist between the *General* and *Makkah* hotel schema, with the latter having reduced features value. This is expected as we saw earlier, Ministry of Tourism has removed some feature categories. Based, on this we can infer some level of similarity between these two schema based on our auxiliary assumption above. However, comparison between FRUs and hotels shows them as distinct categories. Furthermore, it appears licensure requirements are somewhat constant among both category-level schema.

Recall, in the organisation form emergence process, audiences utilise the concept of minimal test codes, whereby a specific set of features are used to place an organisation into a category. Similarly, the Ministry of Tourism uses a scoring methodology for each category with the the Arabic version of the

Feature Type	General Schema					Makkah Schema				
	5*	4*	3*	2*	1*	5*	4*	3*	2*	1*
L	101	104	121	129	130	103	106	124	132	132
C/L	30	27	9	1	0	30	27	8	1	0
C	166	140	78	8	0	143	120	64	6	0
Supp.	85	135	222	300	309	70	117	202	267	274
N/A	60	36	12	4	3	60	36	8	0	0
Total	442	442	442	442	442	406	406	406	406	406
DTC	297	271	208	138	130	276	253	196	139	132
Supp.	85	135	222	300	309	70	117	202	267	274
N/A	60	36	12	4	3	60	36	8	0	0
DTC : Full Code	0.67	0.61	0.47	0.31	0.29	0.68	0.62	0.48	0.34	0.33

Supp.: Supplement; C: Class; L: License; C/L: Class/License n/a: not applicable; DTC: Default Test Code

Table 4.6: Code Comparison for Hotels

schematisation requirement stating minimum scores required for each sub-type. For example, the hotel has to obtain 80% of the overall score for 5-star, 70% of scores for a 4-star, 60% score for a 3-star, 50% score for a 2-star, and 30% for a 1-star. Similarly, for FRU's the establishment must reach a score of 75% for first-class, 60% for second-class, 40% for third-class, and 30% for fourth-class (Tourism 2020b).

In light of the HPC framework, we consider the scoring mechanism secondary to the feature value. Supposedly, even if Ministry of Tourism assigned a 1 to each feature value, the conformance of a hotel to a respective category will largely depend on the hotel's adherence to feature values. We position the License (L_i), Class/License(C/L_i), and Class (C_i) features as the Default Test Code (DTC) as a parallel to the minimal test code in the HPC Framework (Hannan et al. 2007, Chap.4) we calculate DTC as follows:

$$DTC_i = \frac{L_i + C/L_i + C_i}{\sum_i} \qquad (4.1)$$

Surprisingly, these scores match the scoring requirements of the Ministry

Feature Type	General Schema				Makkah Schema			
	1st class	2nd class	3rd class	4th class	1st class	2nd class	3rd class	4th class
L	93	114	121	122	95	113	122	122
C/L	28	7	1	0	28	8	0	0
C	98	42	12	0	97	40	12	0
Supp.	107	194	231	243	109	194	231	243
N/A	39	8	0	0	36	10	0	0
Total	365	365	365	365	365	365	365	365
DTC	219	163	134	122	220	161	134	122
Supp.	107	194	231	243	109	194	231	243
N/A	39	8	0	0	36	10	0	0
Total	365	365	365	365	365	365	365	365
DTC:Full Code	0.60	0.45	0.37	0.33	0.60	0.44	0.37	0.33

Supp.: Supplement; C: Class; L: License; C/L: Class/License n/a: not applicable; DTC: Default Test Code

Table 4.7: FRU Code Comparison

of Tourism alluding to the superficial nature of the scoring methods, and the importance of adherence to social codes. Furthermore, it shows the theoretical power of the HPC Framework.

Code Similarity Test

At this point, we have established that the schema for the two organisational categories (hotels and FRUs) are different on an *individual scheme* level analysis—that is conducting an isolated analysis of the two schemes.

But is there a difference *across* the schema? We aligned the features statements for each schema across all four schemas and computed a pairwise Jaccard Similarity coefficient—comparing Schema A with B and then B with A. If a feature did not exist we the left the value as blank. Readers will notice we only show one FRU scheme. We conducted a similarity test and found a high-degree of similarity (Jaccard Coefficient = 99.996%) between FRU-General and FRU-Makkah allowing us to proceed with a merged schema. The results of our similarity analysis are shown in Table 4.8

The cross-comparisons shows high-similarity amongst the hotel category and somewhat significant differences between the hotel and furnished apart-

	Schema	1	2	3
(1)	Hotel-General	1.0000		
(2)	Hotel-Makkah	0.9518	1.0000	
(3)	FRU-General & Makkah	0.7019	0.6436	1.0000

Table 4.8: Jaccard Similarity Scores for Cross Comparisons

ment categories. Plausibly, these differences emanate from differences in offer development. For example, FRUs do not need a central kitchen to service restaurants as tourists or guests use the available kitchenette for their nutritional needs. Similarly, the composition of the rooms is different as well. We computed Jaccard Coefficients at each feature-category level as well to confirm our understanding. The results are shown in Table 4.9.

Comparison	(1)	(2)	(3)
External Buildings	0.9000	0.8820	0.8333
External Hotel Entrance	0.9000	0.7663	0.6895
Front Offices (Reception)	0.9780	0.6021	0.6304
Lobby	0.9524	0.8483	0.8483
Public Toilets	0.9993	0.9143	0.8600
Elevators & Stairs	0.7497	0.8735	0.8112
Corridors	1.0000	0.8321	0.9033
Rooms	0.9537	0.6759	0.6555
Room Toilets	0.9810	0.9076	0.8942
Rooms for People with Special Needs	0.9993	0.8680	0.8681
Rooms for People with Hearing & Vision Disabilities	0.9979	0.8712	0.8729
Coffee Shop	0.9985	0.9135	0.9216
Restaurants	0.9579	0.0000	0.0000
Recreation Facilities	N/A	N/A	N/A
Public Facilities	0.9370	0.3502	0.4522
Central Kitchen	1.0000	0.0000	0.0000
Management & Employees	0.7260	0.6351	0.5541

Table 4.9: Feature-Category Comparisons

Comparison 1 conducts a comparison between the schemas of Hotel-General and Hotel-Makkah. As expected, high-similarity for most feature-categories except for elevators & stairs and management & employees. For elevators & stairs, we have noticed that the Ministry of Tourism some additional features for hotels in Makkah. Whereas for management & employees, the Ministry has

relaxed some requirements pertaining to training requirements.

Comparison 2 is between Hotel-General and FRUs, and we start to notice some differences due to organisational categorical differences between the labels of "complete service facilities" and "self-service facilities" as categorised by the Ministry of Tourism. This intensional difference in the organisation form sub-category is reflected in the feature-level differences. For example, the composition of the room has a similarity of 0.66 as rooms in FRUs have a kitchenette, which is not a standard offering in most hotel rooms. Other significant differences pertain to the hotel entrances and receptions, as hotels are expected to have a lavish entrance to reflect the service quality. Interestingly, public facilities are a significant difference between the two due to the availability of business centres and common prayer facilities as FRU's are exempted from having them, but hotels are required to have. Comparison 3 is between Hotel-Makkah and FRUs with differences arising due to the same factors as elaborated for Comparison 2.

Our analysis *does not consider* the alignment of intended meanings of the schemas, as we have noticed that the Ministry of Tourism has used different words to convey the same meaning. For example, in the central kitchen, the Hotel-General schema states: "A Saudi chef preparing Saudi cuisine" and the in Makkah the same feature states: "The presence of a Saudi chef serving local Saudi dishes"[8]. Both features convey the same meaning, but we did not endeavour to bring harmony to the features as provided by the Ministry of Tourism. Another example is regarding smoking rooms with the Hotel-General Schema stating: "Provide several non-smoking rooms"; and the Hotel-Makkah schema stating: "Provide several non-smoking rooms (10% of total room count)". In this case, the Jaccard coefficient was 0.9952, and has significant implications for someone constructing a hotel, as the latter provides greater specificity. We are not at the liberty to answer on the intensional meanings by the Ministry of Tourism.

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[8]Although for this example, we got a Jaccard score of 1.000.

Conclusion

Earlier we used an auxiliary assumption stating if the similarity score between the schemas is ⩾60% it should be treated as similar categories. Based on the analysis conducted, we can conclude that Hotel and FRU *should be* treated as similar categories. However, we choose to cancel this information in light of greater specificity gained from our analysis. The greater specificity is gained from the deep understanding of the features values as these highlight the intensional differences between the two categories. Accordingly, we conclude the selection mechanisms experienced by the two categories will be different and distinct.

4.7.2 Retail Definitions

In comparison to tourist accommodations, the retail population is more straightforward. Primarily, the population has two categories: (1) retail housed within an existing structure such as mall or retail located underneath a building; and (2) independent retail, located along streets like a high street in most British cities. Based on our professional experience in the real-estate industry, a secondary classification takes place for structured. Such developments are categorised on the basis of leasable (lettable) area. We contacted MESC (our data source) to obtain the classification method (personal communication with MESC; see Appendix B); Table 4.10 shows the classification structure. Retail

Sub-category	Lettable Area (sqm)
Super Regional Malls	⩾90,000
Regional Malls	30,000 – 90,000
Community Malls	10,000 – 30,000
Neighbourhood Malls	3,000 – 10,000
Convenience Malls	⩽3,000

Table 4.10: Sub-categories for retail within existing structures

classification are straight forward leaving little room for ambiguity. GSTAT's database did not contain any information to classify retail organisations. In our personal conversation and industry experience, this is the method used to clas-

sify structured retail organisations. ACcordingly, we proceed with this definition to classify retail organisations.

4.8   Organisation Form Specification

The purpose of the schematisation analysis of tourism accommodations and retails is to specify our organisation forms accurately to base our hypotheses. Hotels and FRUs are substantial populations to study for this thesis, and given the categorical differences, they are suited to study in the context of community ecology sharing somewhat similar identity patterns. However, we proceed to exclude FRUs from research paper. The Ministry of Tourism is the primary source to obtain information regarding Hotels and FRUs. We contacted them to assess if they can share information for our research project. Unfortunately, it turns out they cannot share such information (email communication; see Appendix C). We searched further and were unable to identify suitable sources containing information on FRUs. STR, which is a recognised data source for information on hotels did not have any information on FRUs's for Makkah as well. The inclusion of this sub-population would have helped us to develop very novel insights into our community population, as we would be able to study a community population context whereby one population shares similar identity patterns with a focal population.

Another consideration in specifying our organisational forms is the significant presence of 1-star and 2-star hotel accommodations. A review of the Ministry of Tourism's Arabic website reveals a list of participating hotels, with a sizeable portion in the 1-star and 2-star category (Tourism 2020b). As stated above the Ministry is unable to share this information. Therefore, this sub-population is featured in our research, as long as the hotel information is provided in our data sources.

STR includes any hotels that have an excess of 10 rooms as part of their census database, however, if they have missed out some hotels it is because they are unaware they exist (personal communication with STR; see Appendix D). We also believe, socially, the legitimation of 1-star and 2-star is on the decline as the government pushes regulation towards the attraction of 3, 4, and 5-star

tourist accommodations due to prevailing government regulations (PIF 2017). Although it would be interesting to study this sub-segment as well to develop holistic insights, again due to data unavailability, we cannot move forward as based on our preliminary analysis we were unable to find any information from the STR data source.

In regards to retail, data is unavailable for independent retail establishments. We conducted an extensive review of GSTAT's and identified an establishment census, but information is aggregated and uses a different categorical structure as required by this thesis' theoretical framework (GSTAT 2020). We reached to Knight Frank, a real-estate consulting organisation based in Saudi Arabia. We contacted them to assess if they can provide information on Makkah's retail landscape. They were grateful enough to provide information. Hence, we resort to using data from Knight Frank for structured retail and omit independent retail establishments for our thesis.

Based on our visits, our two populations represent the core activity in the city. We would love to expand the research effort to include additional organisation such as laundry shops, bus transport companies, restaurants to research the phenomena of community ecology adequately, but data unavailability render it impossible. For example, what would motivate someone to record all the restaurants in Makkah? Even though some OE researchers have endeavoured to do it, some examples (Freeman et al. 1983b; Goldberg et al. 2016; Kovács et al. 2015). We have chosen to exclude them from our research as it ensures a focused and achievable research plan. Therefore, we define our community population as follows:

Definition 4.8.1 (Community Population) *Community Population refers to two population sets Hotels and Structured Retail.*

Definition 4.8.2 (Hotel Population) *Encompasses all tourist accommodations operating in Makkah holding a Star-rating issued from the Ministry of Tourism and with accessible data.*

Definition 4.8.3 (Retail Population) *All distinct buildings offering a retail experience as part of: (1) readily identifiable physical structure; or (2) part of a larger complex with distinct entry and exit points with their data easily accessible.*

To develop our hypotheses for Organisation Forms and other theoretical fragments, we employ an additional analytical element throughout the research document. In addition to the star category employed by the Ministry of Tourism, we add branding as another element for analysis. Branded hotels bear the name of well-known international hotel chains, such as Hilton or Marriott and come with their level of quality and service. An unbranded hotel does not carry a well-known international brand but may carry a locally crafted brand. For this research, locally crafted hotel brands are considered as un-branded hotels. We proceed in this direction as brands help audience members to develop default perceptions about the offers.

Assumption 4.8.1 (Branding) *Branding structures hold significant analytical value to be considered as part of the research effort.*

At this point, it is essential to acknowledge and treat changes in a hotel's brand, similar to Ingram's (1996) analysis of naming strategies for US Hotel Chains. Even though the hotel may not change its physical location, the change in branding reflects a change in offer. For example, an independent hotel adopts a brand of a well-known hotel chain, and with it comes the audience's perception regarding the offer. Ingram reports, hotels following such a strategy witnessed reduced mortality chances. In HPC terms, adopting a brand reflects changing social positions of the hotel, its offer, and the audience's perception towards the hotel's offer. Therefore, we consider changing a hotel's brand name as a significant organisational event, and STR's data contains changes in an organisational brand.

Definition 4.8.4 (Hotel Mortality Event) *A hotel experiences a mortality event through two ways: (1) complete closing of a hotel; or (2) a hotel changing its brand orientation from unbranded to branded or vice versa.*

4.8.1 Distance

In Chapter 1, we hinted towards a vital variable for our community population. We outlined that hotels closer to the GM are higher quality with structured

retail. As one moves away from the GM, the urban landscape changes as we witness a drop in the hotel and retail quality. It seems the existing schematisation requirements of the Ministry of Tourism are superimposed by an overarching social code as well—changes in distance from the Grand Mosque. We believe, inherent in this social schema is the distance of the organisation from the Grand Mosque, that restricts a hotels ability over specific feature values. For example, five-star hotels have feature values dictated by the Ministry of Tourism, if these values are met; the hotel will secure a five-star rating, irrespective of its physical distance from the GM. However, audiences evaluate a producer's proximity to the Grand Mosque as a luxury given the reduced commute times for prayers, and we doubt that pilgrims will pay 5-star hotel rates to stay 3 KM away from the GM. Essentially, distance becomes an audience generated feature-value included in the social schematisation of organisation forms in Makkah. Additionally, distance impacts the appeal structure of hotels, with appeals more nuanced in proximity to the Grand Mosque. We believe that as distance increases organisation forms for both retail and hotel changes moving from a restrictive schema to a more relaxed schema.

Assumption 4.8.2 (Distance & Schema) *As the distance from the Grand Mosque increases, the Community Population schema moves towards a less restrictive schema.*

It is important to specify our meaning of restrictive. In our context, it signifies hotels and retail establishments with the highest amount of feature value requirements. In hotels the most restrictive schema is the 5-star hotel, then the 4-star and so on. In the retail case, the schema restriction is based on lettable area. Implying the super-regional mall is the more restrictive schema. Therefore, in areas proximity to the Grand Mosque, only the most restrictive organisations forms will be present, with other located as distance increases from the Grand Mosque.

There are multiple ways to define the distance variable. For example, we can take the travelling or commuting distance between two points or a straight line between points on a map. We take a simplistic approach and define distance as a straight line between the Grand Mosque and the organisational member on a

map, as opposed to the travelling distance which can vary based on the time of day.

Definition 4.8.5 (Distance) *It is calculated from the centre of the Grand Mosque to the location of the organisation as a straight line and expressed in Kilometres.*

4.8.2 Population Membership

The HPC framework empowers audiences to assign partial scores to organisations complying to a schema. We believe organisations in our population do not carry any partial membership scores and are crisp members of their population. We use an illustrative example to elaborate on our point. The Ministry of Tourism is a critical audience member that dictates the membership scores for hotels as it applies the schema label for respective hotel establishments. Hotels are required by the Ministry of Tourism to display the secured rating on the main entrances of the hotels, effectively, removing any rating provided by audience members. This requirement leads us to believe that membership in hotels is crisp—each member in its respective category. Similarly, the retail population is crisp as well as it is impossible for retail development to be partially in an existing structure and partially on the high-street.

Assumption 4.8.3 (Population Membership) *We assume that members in our population sets are crisp; we do not have any partial membership.*

Following from a crisp membership, are the dynamics of population contrast, reflecting the level of agreement amongst the audience group. Since we have assumed crisp membership, we have to assume that the community categories are high contrast as well.

Assumption 4.8.4 (Population Contrast) *The Community Population has sharp contrast.*

4.8.3 Appeal Structures

Earlier in Section 4.6.2 we hinted towards a symbiotic appeal structure—whereby it is difficult to find offers catering to low-end social positions in proximity to high-end offers of hotels. The rationale is such people would rarely

engage at the low-end of social positions as its is significantly *far* from their position in the socio-demgraphic space. Therefore, the *position* of retail appeal structures follows the appeal structure of hotels—that is, high-end retail appeal structures follow high-end hotel appeal structures.

Assumption 4.8.5 (Appeal Structures) *Appeal structures within a community ecology context follow the lead of the focal population.*

The assumption above provides an incomplete picture about our community of organisations, as it does not account for the interaction of appeals and distance from the Grand Mosque. We believe, changes in distance from the Grand Mosque impact the nature and structure of appeals. Appeals in proximity are more nuanced and complex, and as distance increases the appeals are less complex. Additionally, at this point in the argument, we refrain from the making assumptions on the quantum of the appeals.

Assumption 4.8.6 (Appeal and Distance) *Appeal structures are more complex in proximity to the Grand Mosque and become simpler with increases in distances.*

4.9 Chapter Conclusion

Research on organisation forms concentrates on delineating and understanding mechanics of organisational categories. Initial research positioned organisations as entities possessing specific features values, but this understanding *limits* the power of selection measures, a fundamental requirement within organisational ecology. Subsequent, research explicated selection measures, such as the role of audiences in defining of forms, and alignment between organisation offers and audience tastes.

We explicated Hotels and Structured Retails as two distinct organisational categories for our research environment using principles laid out by theories on organisation forms. Issues of data availability precluded analysis on Furnished Residential Units (FRUs).

Each category is enforced with schematisation requirements: hotels adhering to list of regulated features; whereas, retails have categorised by areas. Despite

the presence of schematisation dynamics, distance from the Grand Mosque plays a substantial role in determining organisational identity claims.

Our social intuitions suggest Hotels in proximity to the Grand Mosque are mainly 5 and 4-star hotels, with remaining organisational categories spread across the city with retails demonstrating a similar pattern. Such distributions also impact vital rates as explicated in Chapter 8.

Lastly, although we have assumed crisp membership in our population sets, we *strongly* believe partiality exists in the market.

4.9.1 Notes on Partiality & Identity

Partiality. Despite these definitions we believe that the hotel population demonstrates partiality on prices allowing us to calculate hotel-specific GoM (grade-of-membership) scores. For example, we have seen for certain room types between the 5-star and 4-star prices are very similar at different points in time. Due to lack of data, we cannot test this social intuition empirically.

Identity. organisational ecology readers may object to our use of identity to describe the community population, which is technically speaking, an incorrect usage. Identity inherently implies similarity between organisational categories (Hannan et al. 2007). In isolation hotels and retail are not related and are distinct organisational categories, but from two perspectives a commonality is established. Firstly, is the real-estate industry where hotels and retails forms the basis of primary asset classes (Miles et al. 2015) and the basis of mutual commonality. Secondly, we are using organisational defined by a geographical space as another factor of commonality between organisational forms, allowing us to use the term identity with some flexibility. Geographical-based commonality has been used in multiple research studies (such as Barnett et al. 1987; Lazzeretti 2006; Lomi 1995)

Chapter 5

Density-Dependence

We now move towards our second theoretical fragment—density depen-
dence measuring the impact of rising (or decreasing) population members on
vital rates (Hannan et al. 1992). Research Questions 1 and 2 of our thesis
outlines causes for diversity and quantification of competitive forces. Density-
dependence provides the theoretical machinery to answer our research ques-
tions by identifying mechanisms causing diversity and quantification of compe-
tition.

Our chapter begins with a review of classical density-dependence that gener-
ated significant research attention, proving its applicability across a wide variety
of organisational forms and industry settings (Hannan et al. 1992). However,
Hannan and colleagues were unsatisfied in the theory's *grey areas* and improved
its efficacy by elaborating the impact of partial memberships, explaining the
specific role of legitimation, and conditions of competitive release that impact
population density (Hannan et al. 2007). Similar to organisational forms, we re-
view the classical understanding of density-dependence followed by the recent
understandings.

Following on, we state our theoretical preference for analysing density in
Makkah and explicate our density assumptions for Makkah. Our assumptions
are harmonised with schematisation dynamics developed in Chapter 4 showing
the role distance from the Grand Mosque plays in density dynamics. We provide
the hypotheses stemming from our literature review in Chapter 8.

5.1 Theoretical Review

Density-dependence is also a logical follow-on from organisation forms, as once a form is socially taken-for-granted, it commands significant attention of the audience to generate resources, as predicted by the organisation form emergence process elaborated in Chapter 4. The logical response is that we should witness a significant amount of attraction by various interested audience groups in establishing hotels and retail establishments and thus increasing respective population counts. There are two main theoretical camps explaining density-dependence: classical density-dependence and fuzzy density-dependence. Our literature review covers both to provide a holistic understanding.

5.1.1 Classical Density-Dependence

Classical density dependence starts once an organisational category becomes a legitimated member of the organisational environment—that is a form. The theory posits that changes in organisational populations take place due to two main forces: legitimation and competition. During the initial phases of a population, organisational form specific densities are low as the organisation form has just been established. The Organisation form is seeking acceptance from the wider audience. Increasing social acceptance attracts entrepreneurial activity, positioning the organisation form as a legitimated member of the socio-organisational environment. Thus increasing the population's density, and increasing audience attention in the form of resources. At this point in time, the force of legitimation is strong and responsible for increasing density. As density increases and new members enter the population, legitimation forces become secondary, and competition determines the evolutionary path of the population. High density leads to increase in competitive relations raising the mortality rate of organisations. However, the population self-corrects itself to reach an optimal level–referred to as carrying capacity (Carroll et al. 2000a; Hannan 1986; Hannan et al. 1992). In the interest of providing a holistic understanding, we delve deeper into the concepts of legitimation, competition, and carrying capacity in the following paragraphs. We take this step for our readers to develop an appreciation of the complex world of organisations.

Legitimation

Legitimation is concerned with social taken-for-grantedness of the organisation form. The original theory provided two perspectives on legitimation: (1) conformity of the organisation to the stated rules (coercive isomorphism); and (2) social taken-for-grantedness—that is constitutive legitimation (Carroll et al. 2000a; Hannan et al. 1992). It is the latter component of legitimation that the classical theory and various enhancements use. Legitimation is intrinsically linked with the concept of organisation forms, as organisations forms are widely accepted the founding rates increases; conversely, the mortality rates for the same organisation form continue to drop. During this time, the population has a resource-rich environment facilitating the set-up of new organisations. In mainstream management terms, this translates to low barriers to entry into the market (Saloner et al. 2005).

Definition 5.1.1 (Legitimation) *Legitimation is a property (or indicator) whereby a social phenomenon is taken-for-granted by the society.*

Legitimation is not an infinite force and reaches a ceiling once the form is fully taken-for-granted. Graphically, it implies, legitimation increases slowly in the early part of the population, with significant increases in the middle part and tapering off closer to the end of the phenomena. Otherwise, we would witness the continuous rise of organisations. However, this does not mean legitimation ceases to exist at the end of its cycle. Once legitimation is entrenched in the society it has a 'sticky' nature and is difficult to change (Carroll et al. 2000a; Hannan 1986; Hannan et al. 1992).

Empirical Applications of Legitimisation   In this Chapter we have opted to present the empirical applications as part of the argument structure providing relevance to the specific points. It should be noted significant research in organisational ecology was dedicated to the study of density dependence (Bogaert et al. 2016). Hannan and Freeman's (1987) research on labour union founding provides the earliest empirical evidence for legitimation for unions. Their research analysed the emergence of the labor unions from 1836 until 1985, whereby the

increasing density led to the finding of more labour unions. Fundamentally, legitimation gives prominence to an organisation, but has the ability to operate in different contexts, as we elaborate below.

Carroll and Swaminathan's (1991) study of the American brewing market provides an excellent example to study legitimation. Their research covered American brewing firms from 1633 till 1988—coverage of 350 years. Before the Volstead Act, brewing firms were experiencing a downward trend, and it continued from after the Act was repealed. The downtrend arose due to the changing nature of legitimation and the anti-corporate sentiment towards mass-brewers (Carroll et al. 2000c). This paper shows the importance of legitimation as a social construct and not necessarily a legal one. Once the legal ban on brewing firms was over, founding rates continued their trend from the pre-prohibition era reflecting the social underpinning in organisational evolution. Largely, the legitimation for mass producers was declining and giving rise to other types of brewery firms. It wasn't the prohibition that caused their decline, rather the *delegitimation* of mass-brewery category. This study has conceptual similarities with Ruef (2004), whereby, the plantation form was socially unappealing and the increasing social movement to free slaves. Overtime, the *delegitimation* of the plantation form continued to increase, to an extent the entire category was obliterated.

Martin Ruef's (2000) research on the US Healthcare industry is another critical research paper demonstrating legitimisation's role as an active social force—specifically, this study focused on legitimisation's spill over effects in a community of orgnaisation's with related identity patterns. In the period of study, the healthcare industry experienced multiple legislative events, eventually giving rise to a new organisation form referred to as the Health Maintenance Organisation (HMO). An active audience segment achieved these legislative changes at different social positions, such as direct consumers, advocation, and researchers documenting the impact of such organisations on patient-care experiences. Such movements resulted in the legislative action bringing down the barriers facilitating the entry of new healthcare-related organisation forms. Furthermore, the research also proves that co-legitimation is possible between organisations forms provided audiences perceive similarity in identities. This

shares some conceptual similarities with research focusing on legitimation's geographical spill over, in which the concept of the automobile gained traction within key European countries (Hannan et al. 1995).

Technological changes also influence legitimation increasing obsolescence for certain organisations (a form of delegitimisation). Wade's (1996) study on the microprocessor market demonstrated that technological innovation brought by main design sponsors (an organisation that introduces a new microprocessor design) helps give rise to a new set of organisation firms known as the 'second-source' organisations. These organisations use the designs developed by main sponsors to develop audience relevant products to increase their resource flows. Consequently, density for 'second-source' faired better for such organisations than main-design developers.

Similarly, Dobrev, Kim, and Carroll's (2002) study on the automobile market proved that innovation in engine size capacities improved founding rates for organisations offering the latest engine styles. In this context, legitimation was linked with audience tastes for the new engine sizes. Recall, we mentioned as the category is being formed, the tastes are also being formed. Furthermore, the industry maturity proliferated the available technology causing more organisations to enter leading to raising mortality rates due to increased competition.

According to Bogaert et al. (2016) legitimation *can* operate across distinct populations, but current research is unable to provide evidence. Our motivation to show such empirical applications is two folds: (1) to understand the underlying social mechanism which gives rise or prominence to an organisational category, and (2) to highlight the diverse environments under which legitimation operates. We conjecture, based on the theoretical framework legitimation operates within our operate. However, we believe, its operationalisation is slightly different and linked to the distance from the Grand Mosque. Unequivocally, all physical areas of Makkah experience legitimation, but certain areas have a strong effect of legitimation to certain organisational categories. We hope our research effort is able to make a humble effort in this regard.

Entry and Exit Methods. Linked with the overall concept of density dependence is the method of organisational entry—how organisations enter a

population. Usually, there are two types of entry methods: purely new entrants (*de novo*) and entrants from another population (*de alio*). Methods of entry hold significant value from an analytical perspective enabling researchers to assess which methods hold significant benefits for organisations. Similarly, the method of exit also holds significant analytical value, albeit the methods of exit are varied. (Carroll et al. 2000a). In Chapter 9 we specify our entry and exit methods for our organisations.

Competition

Now we turn our attention to the second force in density-dependence: competition. As new organisations set up, the population starts to get crowded, and organisations start to occupy relevant resources, increasing competitive relations—giving rise to the second force of density-dependence. The theory uses the concept of diffuse and not direct competition as the latter targets a focal organisation for competition and acquiring resources. Since ecology concerns itself at a population level, it is more relevant to use diffuse notion of competition where all organisations compete to acquire resources, consistent with the social behaviour of organisations. Socially speaking, organisation do not enter a population to compete against a focal actor, but at the same time, they are aware of the presence of other competitors (Carroll et al. 2000a; Hannan et al. 1992).

Competitive relations become complicated, and intense as the number of organisations increase, potentially restricting the entry of new organisation—at which point the founding rates for the organisation form start to drop or rising mortality rates. Resource base is finite with existing resources occupied by existing players making it difficult for new organisations to occupy the resource space.

Organisation's that do set-up during this phase of high-density tend to experience a higher mortality hazard throughout their lives—referred to as Density Delay. It explains the persistently elevated mortality hazard for organisations founded during high-dense environments. Multiple reasons contribute towards the elevated mortality hazard such as insufficient time spent in planning rou-

tines, insufficient time spent in building trust with its audience segment, unable to transition to optimal capacity due to intense competitive pressures, unable to secure sufficient resources, or are generally incapable of sustaining the competitive environment (Carroll et al. 1989).

We do not believe that the theoretical implications posited by density delay apply to our research study, primarily, due to increasing resources. Knowledge of density-delay is crucial as it explains increases in mortality hazards during specific periods and is essential to consider as a time-based covariate for our analyses. This is intricately linked with the research methodology for density-dependence that is covered in Chapter 9.

Empirical Applications of Competition.   We have to qualify this section, as research on competition is quite broad and vast. Here our focus is on competition as defined within the organisational ecology framework. The key piece of research to explicate competitive processes within organisational ecology is the the research conducted by Barnett et al. (1987) on telephone companies located in the United States. The research analysed two types of telephone companies: (1) mutual companies, which have a non-for profit orientation operating in rural areas; and (2) commercial companies with a for-profit orientation and operating in urban areas. The research provided evidence of the mutual telephones companies generating commensual competition with a reduced mortality hazard for mutual at lower levels of density. However, at very high levels of density the mortality hazard started to increase. Whereas, the commercial companies demonstrated standard competition behaviour. We have refrained from providing additional applications in this section, as section 5.1.1 provides alternative understandings on competition.

Carrying Capacity

As competitive relations increase, the founding rates of the organisation forms begin to reach a minimum point; conversely, mortality rates are the highest, and the population density has reached a theoretical maximum referred to as carrying capacity—the maximum number of organisations that can exist for a population. In this phase of the population, competition is extreme, and

only the fittest organisations survive the competitive intensity. Consequently, the founding rates for the organisation start to fall with further increases in density, suggesting that founding rates have an inverted U-shape with density. The opposite story is applicable for mortality rates, as density rises mortality rates initially fall, reach a low point at the carrying capacity point, and then start to rise with further increases in density (Carroll et al. 2000a; Hannan et al. 1992).

Classical Density-Dependence Criticisms

Unlike organisation forms, classical density dependence witnessed significant research attention and contribution in various industries, automobile (Hannan 1997; Hannan et al. 1995, 1998; Rao 1994), banks (Lomi 1995, 2000; Ranger-Moore et al. 1991), brewers (Carroll et al. 1989, 1991b, 2000c; Swaminathan et al. 1991), newspapers (Carroll et al. 1989; Dobrev 2001), computer-related manufacturing (McKendrick et al. 2003; Wade 1995, 1996), and hotels (Ingram et al. 1996), showing a rich empirical tradition (Bogaert et al. 2016). Given the strong empirical tradition of density-dependence, the classical version is not free from shortcomings.

Legitimation is the critical force in generating taken-for-grantedness for single populations, as evidenced by the significant empirical research. However, theoretical issues arose as the formulation for legitimation was somewhat static (Bogaert et al. 2016; Carroll et al. 2000a, pp. 218–219). Understanding at that point in time positioned legitimation as a singular force towards increasing counts for the organisation category unable to explain fully negative changes in legitimation—delegitmation which reduces density counts.

Ruef's (2004) extensive research into the American plantation farms is a prime example of population delegitimation, concluding that increasing density of mid-sized farms and smaller agricultural made the Southern Plantation form less appealing. This change was supplemented with the changing regulation and the desire of farm labourers to free themselves from slavery and transition towards farms that offered better incentives. Surely, the density-delay argument was there, but it was unable to explain the changes fully. Further-

more, research conducted by Hannan et al. (1995) proved legitimation is not restricted to a single social and geographic context. Their research proved legitimation operates more broadly transcending various contexts to plant the seeds of taken-for-grantedness. This is an essential consideration for us since we plan to research a density study across a different set of populations.

According to Bogaert et al. (2016), the current legitimation theory is insufficient to explain the difference across populations. Their study conducted a meta-analysis of density studies dating back to the 1980s that yielded 52 different density studies. They added two elements into each density report to study legitimation effects: simplicity of goals and tangibility of offerings. The simplicity of goals is an audience's perception of the stated goals of the organisation as simple goals are readily understood by the audience translating into quicker taken-for-grantedness for the organisation. The tangibility of the offerings refers to outputs of the organisation manifesting in physical form, something the audience can interact with their primary senses. When these two variables were introduced in the study, it did explain some of the legitimation across populations, but still had significant variations. The understanding of legitimisation becomes exceptionally challenging in a community with distinct organisational categories as legitimation spillovers from one category are not straightforward.

Secondly, competitive pressures are assumed uniform amongst organisational members. Practically, this is never the case, as the most dominant and relatively unknown players cannot be exerting the equal amount of competitive forces on remaining actors of the organisation form. Some developments in this regard were made to accommodate "weights" into density models, to quantify the degree of competitive pressures exerted by each organisation. This resulted in the creation of weighted density dependence models with weights assigned based on: (1) categories, (2) metric, or (3) competitive strength.

For example, Barnett and Carroll's (1987) research study on telephone companies in Iowa used the category of organisation and geographic location to develop a holistic understanding of competitive pressures facing the organisations. As we stated earlier, organisation located within rural market exert a very low competitive effect on the overall population, whereas organisations located within the urban centres exerted significant effect on the population *and* the

organisations located within the rural areas–highlight a different competitive dynamic as posited by the theory of density dependence. Baum and Mezias' (1992) density study on hotels used the concept of a metric-based density model. Their metric was based on two variables physical distance and size of hotels to a focal actor. The larger the differences imply the lower the competition between the hotel and focal actor. In this study, the nature of competition is more cannibalistic the hotels try to consume resources (in the form of tourists) from other hotels, sitting in stark comparison to Barnett et al. (1987). Lastly, the competitive strength requires a priori assessments on the nature of competition within the population (Carroll et al. 2000a).

Considering these grey areas, Hannan and colleagues embarked on proposing an alternative theoretical framework to classical density-dependence—fuzzy density-dependence linked directly to the concept of grade-of-memberships as covered in Chapter 4. Despite earlier developments remaining valid theoretical fragments.

5.1.2 Fuzzy Density-Dependence

The most notable contribution to the theory of density-dependence was from the HPC Framework (Hannan et al. 2007) by reformulating three aspects of the density-dependence: the role of audience members, legitimation, and competition by integrating the impact of partial memberships on organisational density.

Audience Structures

Classical density-dependence ignored the role of audience members in shaping density since legitimation operates through them. Under the classical theory, audiences were considered as a static group that directed resource to organisations. The classical version assumed legitimation was exerted at a uniform rate by the audience members, the rate decreasing as time increased for the population.

In the reformulation, audiences are distributed along certain dimensions rooted to their social positioning, providing an overall structure and identifying

their social position as part of the organisation's operating environment. Qualitative or quantitative dimensions are available to structure and assign locations to audience members.

As per the organisational form emergence process, audiences develop tastes at their respective social positions, in essence the audience outlines the *category-level intrinsic appeals* (category-level potential demand), outlining resource availability for organisations. In return, organisations develop various offers targeting those social positions with the objective for resource acquisition.

Definition 5.1.2 (Category-Level Intrinsic Appeal) *The level of potential demand created at the category-level available organisation to target for their resource acquisition.*

Since other organisations are also in the population they compete amongst each other for *that* particular social position, and not generally within the category. This creates are very nuanced understanding of competition—that is fuzzy-based competition. When an organisation engages with the audience at those social positions, it impacts their legitimation and competition; we elaborate below (Blau 1977; Hannan et al. 2007; Pólos et al. 2002b, 2010).

Legitimation

Once the audience is structured with their appeals, organisations match their current offers at those social positions. Organisations may choose to engage at multiple social positions to target a broad audience, or at certain positions and thus outlining their *niche* (the concept of niche-width we explain in Chapter 6). Developed offers targeting the audience's social position represent the organisation-level intrinsic appeal (potential demand).

Definition 5.1.3 (Organisation-Level Intrinsic Appeal) *The social positions targets by the organisations for resource allocation, which are a sub-set of the Category-Level Intrinsic Appeal.*

Therefore, organisational level legitimation is a function of their offers, matching the audience tastes at the chosen social position. Implying, legitimation is linked with GoM scores, as discussed in Chapter 4. It allows audience

members to assign partial GoM scores to offers of an organisation, reflecting the organisation's compliance to the agreed upon schemata. This shows the strong link between the theories of organisation forms and density-dependence. High GoM attainment enables the organisation to attain legitimation at chosen social positions. This is a sharp contrast to classical density-dependence, where legitimation is treated as a uniform population-level event with organisational-level mechanisms hidden from the view. Despite this, the original component of the classical theory remains, as legitimation increases density increases.

Competition

Similar to legitimation, competition under the reformulation is defined along audience appeals as well. As mentioned in Chapter 4, audience tastes outline the category-specific intrinsic appeal, and the organisation's offer is the organisation-specific intrinsic appeal. However, conversion of the organisation-specific intrinsic appeal to *actual* appeal, is contingent on the organisation's engagement efforts—its ability to learn about customer taste idiosyncrasies. Organisations that score high GoMs in comparison to other members have a stronger legitimation and fit with the prevailing tastes at the selected audience position and reduced mortality hazard.

Definition 5.1.4 (Organisation-Level Actual Appeal) *Organisations convert their organisation-level intrinsic appeal to actual appeal by engaging with audiences at the desired social position.*

Due to legitimation, other organisations enter the population and also develop offers at social positions of their choosing. Organisations compete to get the audience's attention for appeal conversion—creating a competitive event between the organisations.

Definition 5.1.5 (Competition in HPC Framework) *When two, or more, organisations engage a specific audience social position to convert their intrinsic appeals to actual appeal.*

Quantification of this competitive event is a ratio of each organisation's intrinsic appeal to the *social-position specific category-appeal.* As more organisations

enter the population, with differing GoM scores, it increases the competitive relations amongst them, and mortality rates begin to rise. Due to the competitive pressures, the audience members are unforgiving to organisations with low GoM scores; consequently, over time, low GoM organisations are eradicated from the population, leaving a crisp set of organisations.

Similar to organisation forms, the revised density dependence increases the power of the original theory to develop a sharper understanding of underlying forces that shape populations. Not only are we able to understand density at the form level, but with the inclusion of audience social positions, we can predict social positions that will witness significant density rises.

Empirical Application of Fuzzy Density-Dependence

Empirical applications of fuzzy density-dependence have been limited, possibly as organisational ecology's research trajectory shifted towards categorisation processes after the publication of Hannan et al. (2007).

In Chapter 4, we introduced contrast quantifying the taken-for-grantedness on a population's assumptions and perceptions. Contrast is the underlying theoretical machinery to explain differences in legitimation at different points in time, allowing to make meaningful comparisons between different periods.

Kuilman et al. (2009) researched the impact of fuzzy density-dependence on the banking population in Shanghai. They defined population fuzziness "as the density of the subpopulation divided by the density of the total population" (p. 237). Their research showed that as fuzziness increased in the population, it led to the entry of new banks, reducing the overall population contrast, leading to greater audience acceptance. This is in stark comparison to the reformulated theory of density-dependence in which the acceptance of an organisational category should increase acceptance leading to high-contrast raising the founding rates in the category.

Bogaert, Boone, and Carroll's (2010) research on Dutch accounting over approximately 50 years covers a period of intense schematisation consensus to apply the label 'Accountant' successfully to the profession. Their research empirically proved that fuzziness and fragmentation in a population hinder the

legitimation. Hence, the first-order effect of density is not witnessed if the population is fuzzy. In an earlier research effort they were unable to explain changes in density patterns fully (Boone et al. 2000).

The two research studies sit at opposite ends of the developed theory. Is the underlying theory wrong? We think, the theory may require a reformulation after significant research effort has expended on empirical applications of fuzzy density-dependence.

5.2   Our Theoretical Preference and Research Gap

Theoretical Preference.   The reformulated density-dependence offers a granular understanding of selection mechanism in a population, and studying this in the context of community ecology is novel undertaking. Our theoretical preference relies on utilising the classical density dependence and not fuzzy-density dependent, due to data unavailability issues. We researched the available data sources and were unable to identify any data enabling us to undertake the research. For example, pilgrims represent the audience group and a mechanism to understand their social positions can be their income levels. However, this data is not recorded within our data sources preventing us from linking pilgrims to their preferred hotels.

Anecdotally, we *know* pilgrims in the lower social classes stay away from the Grand Mosque (>3 KM), but are unable to develop an empirical model of this anecdote. Earlier, we highlighted towards a possible operationalisation of partiality using price and room type combinations, but insufficient data restricts us. Furthermore, within the organisational ecology framework we *should see* a cluster of 2-star and 3-star hotels located at such a distance from the Grand Mosque. This shows the offering of such hotels is standardised (or commodified) without regard to any taste nuances. Accordingly, we *should see* high founding (and density) rates for such sub-population segments proving our social intuition. Why? Such appeal positions are easy for a wide range of hotel and retail developers to appease given the simplicity in comparison to the 5-star taste profile, whereby the audience segment is much more refined with taste nuances. The complexity of the taste profiles require hotel and retail developers to

create multiple offers matching the diverse taste requirements of the audience segment, as opposed to 3-star hotels having a lower number of offers. Consequently, ,the cost structure of 5-star hotels are higher to service the diverse taste profiles. The theory of density-dependence can highlight such discontinuities in the offer standardisation by skewing the density of sub-populations.

Research Gap. A significant number of density studies have focused on either a single-population design or a community of populations with related identity patterns (Bogaert et al. 2016). We believe a gap in the literature exists for a density-dependence study for population sets with dissimilar identity patterns— this we can execute based on the data we have. Social intuition suggest the interaction of founding events and latency of inter-population founding will be of great research value, which we cover and explore further.

5.3 Makkah's Density Forces

We now develop some working assumptions for legitimation and competition, the forces that shape population density patterns, enabling us to develop relevant hypotheses covered in Chapter 8.

5.3.1 Legitimation Assumptions

Pilgrimage visits to the Grand Mosque are taking place for a very long time (Joanne Johnson 2010, p. 7) with both population categories having access to resources for a very long time. The basic needs of pilgrims remain the same—a place to stay to perform their religious obligations. Therefore, we assume that legitimation for hotels, as a concept, has reached a peak of constitutive legitimation. Furthermore, coupled with this concept is the legitimation of social-position specific appeals. Based on our intuition, we believe the offers of hotels are sufficiently legitimated as well. Implying, the audience has full understanding of the offer when the label *5-star* is communicated.

Assumption 5.3.1 (Hotel Legitimation) *The hotel category has reached its limit of constitutive legitimation along with its offers.*

However, we believe that structured retail is a relatively new category in Makkah with earlier forms of retail requirements concentrating on open-air markets or road-side retail (Taylor 2015). Therefore, the advent of structured retails (such as malls) is relatively new.

Assumption 5.3.2 (Retail Legitimation) *Structured retail is experiencing the force of legitimation.*

This assumption is essential for retail as we can attribute the rising founding rates to the legitimating force as predicted by the theory and the economic policy orientation towards developing such a category further. For example, the Public Investment Fund's plan to develop Rua Al-Haram Project is a massive undertaking. The project is located within close proximity to the Grand Mosque and has a sizeable retail offering (PIF 2017).

5.3.2 Competition Assumptions

Similar to organisation forms, changes in the distance also impact the competitive forces in the community population. We use the same distance definition used for organisation forms.

Competition between hotels tends to centre around distances from the Grand Mosque. A cursory review of Makkah hotels on booking.com (www.booking.com) shows slogans such as '500 meters away from the Haram' acting as signalling mechanisms to relevant audience segments to develop default perceptions of the hotel's offer (Hannan et al. 2007). In HPC Framework terms, the distance of the hotel from the Grand Mosque outlines the category-specific intrinsic appeal. As proximity from the Grand Mosque evokes connotations of ease, the luxury of services, and a comfortable pilgrimage and the hotel's offer holds high intrinsic appeal concerning the audience social position and physical distance of the hotel. Similarly, hotels and retail establishments further away are less appealing to pilgrims, due to the comparatively longer commute times. Hence, these organisations compete fiercely to attract the attention of pilgrims. Therefore, as a general rule, we assume:

Assumption 5.3.3 (Community Population Competitive Force) *The community-level competitive force increases as the distance from the Grand Mosque increases.*

We believe that given the social dynamics of Makkah, the above assumption is generally applicable to most organisations. Pólos et al. (2002a), outlined that in situations of greater specificity instances, the general rule of the logic structure be overridden. Here we believe that the general competitive rule does not apply to 5-star and 4-star hotels. As we outlined above, we believe distance is another element of the social schema that limits the establishment of 5-star and 4-star hotels after a certain distance. As after a certain distance, 5-star and 4-star hotels are unappealing as pilgrims are required to undertake significant commute times. Hence, their competitive force decreases as distance increases from the Grand Mosque—because, we believe it is difficult for 5-star and 4-star hotels to survive far away from the Grand Mosque as the category-level appeal is linked with distance. The closer they are to the Grand Mosque, the more appealing for pilgrims associated with those social positions creating strong competitive relations. In other words the region of peak appeal for 5-star and 4-star hotels is constrained by a specific distance measure.

Assumption 5.3.4 (Hotel Competition Force—4* and 5*) *As the distance from the Grand Mosque increases the competitive force for 5-star and 4-star hotel decreases.*

Our hotel competitive assumptions project a sense of localised competition concerning the hotel's presence in a radial zone. This is similar to the density-dependence study completed by Baum and Mezias (1992). Their mechanism to operationalise localised competition was based on hotel size and location in the Manhattan hotel market. Our research methodology section will utilise something similar to develop a holistic understanding of competition.

5.4 Chapter Conclusion

Density-dependence analyses changes in population compositions via count of organisations or new organisational categories attracting significant audience

attention and resources. There is strong link between the theories of organisational forms and density-dependence, as once a category is established it attracts attention of various organisations. Similar to previous theoretical fragments, density-dependence has a classical and reformed understanding. The classical understanding states density patterns change due to changes in the forces of legitimation and competition. However, classical density dependence was unable to explain change fully. Accordingly, the classical theory was revised showing the power of audience segments to define appeal structures, and them assigning GoM scores to organisations based on their developed offers. Organisations with poor GoM scores are removed from the organisation.

This shows density-dependence is impacted by population level contrast (Kovács et al. 2015). Similar to organisational forms, density-dependent dynamics are restricted due to population contrast. In our research context, we see hotels are sufficiently legitimated due to the long tradition of pilgrims arriving to the Grand Mosque. Therefore, the impact of population contrast will not impact negatively in our population.

In comparison, retail appears as a newer organisational category undergoing the force of legitimation. We expect to see rising founding rates as per the established theory.

In our formulation of the competition force, competition of 5 and 4-star hotels decreases from the Grand Mosque as the schematisation requirements limit their founding after a certain distance from the Grand Mosque. In comparison, the competitive force increases for the community population. We refrain from a claim of *no competition* between 5-star and 4-star hotels after a certain distance from the Grand Mosque, as it alludes to perfect understanding of social dynamics, something impossible. In contrast, the competitive dynamics of remaining hotels increases with distance from the Grand Mosque.

What about fuzzy density-dependence in our community population? We *do* believe the existence of fuzzy-density in our population. Earlier we stated the existence of partiality based on pricing dynamics, whereby the pricing strategies of 4-star mimic 5-star hotels, but not 3-star hotels. Similarly, this partiality is (possibly) the cause for fuzzy legitimation, with 4-star hotels being less legitimated than 5 and 3-star hotels (or 4-star hotels may have a higher mortality

hazard as a consequence). However, data is unable to support this research effort.

Chapter 6

Organisational Niches

In this final chapter of our theoretical argument, we outline organisation niches. Organisation niche is an integral part of organisational ecology, as it captures the shifting dynamics of the organisation themselves due to internal decision making, and the broader environment.

organisation ecology offers two perspectives to study organisational niches, mechanisms creating a dichotomy in the organisational population. One concentrates on the possible configurations an organisation can position itself, referred to as the *fundamental niche* (Hannan et al. 1977, 2003c), outlining positions an organisation an organisation can take in the absence of competition. The other perspective introduced competition, thus restraining the available positions, referred to as the *realised niche* (Carroll 1985; Hannan et al. 2007). We conduct a theoretical review of both fragments along with the reformulated understandings.

This is followed by our choice of the theoretical positions, as applying both understandings is not possible within the remits of this thesis. Similar to previous two chapters, we develop assumptions for our research context harmonised with organisation forms and density-dependence.

In Chapter 8 we provide our hypotheses developed from this theoretical fragment.

6.1 Theoretical Review—Fundamental Niches

There are two perspective in understanding Fundamental niches: classical and reformulated; we review both below.

6.1.1 Classical Perspective

The classical perspective of organisation niches states that environmental conditions determine two types of organisational orientation: generalists and specialist. Generalists are types of organisations that can operate under broad conditions; whereas specialists operate under a specific set of conditions or situations. Each orientation holds significant implications for organisations as we review throughout this Chapter. (Freeman et al. 1983a).

Definition 6.1.1 (Generalism) *An organisation orientation enabling operations under a broad set of environmental conditions.*

Definition 6.1.2 (Specialism) *An organisation orientation enabling operations under a very specific set of environmental conditions.*

The theoretical imagery holds that the organisation's operating environment is continually shifting between environmental states, with each state measured along a scale of similarity. In an environment with frequent dissimilar shifts, generalists respond by accumulating slack as a hedging mechanism to maintain operational flexibility as required by the audience group (broad niche) (see Hannan et al. (1984) for the benefits of slack). Conversely, environments with infrequent yet similar shifts, specialists become accustomed to a narrow range of resource configurations (narrow niche) and develop internal routines aligned to such resource availability (Freeman et al. 1983a; Hannan et al. 1977).

Definition 6.1.3 (Classical Niche) *An area of the resource space where an organisation is able to operate without the presence of competitive forces (Hannan et al. 2007, Chap.10).*

The key question is: how do organisations develop such orientations? Organisation orientation is dependent on three variables: (1) environment dissimilarity, (2) environment variability and (3) grain, and is assessed in light

of the observation period. Environment dissimilarity is the average degree of difference between two environmental states. The high average difference between states implies significant environmental uncertainty concerning resource requirements. Secondly, variability refers to the overall dominance of the environmental state in the observation period. If one state is primarily dominant, the environment is considered as having low variability; otherwise, it is considered high. Finally, grain refers to the duration of each environmental state. If the environment follows a predictable pattern duration, then the grain is considered as fine; otherwise, it is coarse (Freeman et al. 1983a; Péli 1997).

A combination of these variables favours a particular organisational orientation. However, the earlier theoretical formulation lacked a "if-then" approach to arrive at the correct orientation for the organisation leading to conflicting results.

In this regard Péli (1997) research has been groundbreaking as he used first-order-logic to remove ambiguities embedded within natural language to explain the concepts of niche width (Bruggeman (1997) conducted a similar research, as well). Péli's use of logic improved the workings of niche-width, and how the three variables worked together to determine the correct environmental orientation. Table 6.1 provides a summary of environmental conditions suited to generalists and specialists.

Generalist Orientations			Specialists Orientations		
Dissimilarity	**Variability**	**Grain**	**Dissimilarity**	**Variability**	**Grain**
High	High	Coarse	High	High	Fine
Low	High	Coarse	High	Low	Coarse
Low	High	Fine	High	Low	Fine
			Low	Low	Coarse
			Low	Low	Fine

Table 6.1: Conclusions from Péli (1997, p. 24) research study

The table shows that generalists fair better in volatile environmental conditions, whereas specialists are better in conditions of low volatility. However, if an organisation is misaligned to the environment it holds significant negative implications. Péli stated such misalignment in terms of increased outflows—it's inflows are insufficient to cover the organisation's cost structure, raising the mor-

tality hazard of the organisation. His research shows that most environmental conditions favour specialists over generalists.

Péli's efforts yielded a better understanding of the mechanics of niche-width and the implications of environmental misalignment impacting an organisation fitness. Some readers may criticise the abstract nature of niche-width objecting to its difficult application. However, as we will elaborate below, the general concept is applicable and holds significant research value.

6.1.2   Niche-Width Reformulation

Despite Péli's reformulation efforts, HPC reformulated the theory, by expanding the role of audiences and redeveloping the niche from the perspective of organisational categorical form emergence (Hannan et al. 2003c, 2007).

Like organisation forms and density-dependence, audience segments play a significant role in determining the niche-width. This process takes place at two levels: the category (or organisation form) level and the individual organisation level. This shows the importance of organisation forms in organisational ecology; it is a central pillar connected with all theoretical fragments.

Category-Level Niche

The first step in defining the category-level niche is understanding the audience social positions and tastes *specific* to their social position. Similar to organisational forms and density-dependence, the audience is structured along social positions that are either categorical or metric-based. Recall, as per the form emergence process covered in Chapter 4, while the audience develops the schema (social codes) for the category, they *also* define social position specific tastes. Similar to organisational forms, these tastes profiles are also legitimated as part of the normal categorical legitimation. Therefore, if the category has a stable schema it has stable tastes profiles (high contrast), with lower mortality hazard for the organisations, vice versa(Le Mens et al. 2015).

It is understandable that the combined tastes at *all* social positions will represent the category-niche. However, the HPC framework introduced another concept: typicality. Typicality is concerned with understanding the defaults for

the category. This extends to the default codes as we discussed in Chapter 4 and developing prototypical tastes as discussed in the paragraph above. Therefore, one way to understand category-level niche is to culminate the tastes profiles to outline the category-level niche. However, this creates an incomplete picture as it does not accurately define a niche. Accordingly, typicality is introduced to develop the niche stating that a niche is defined along *typical tastes of a typical organisational member. Thus creating the category-level fundamental niche* (Hannan et al. 2007).

Definition 6.1.4 (Category-level Niche) *A typical outline of a tastes profile for a typical organisation.*

Organisation-Level Niche

Once the category-level niches and the prototypical tastes are established, organisations develop products or offers closely matched to their selected appeal positions allowing them to outline their organisation-specific niche-width. As stated earlier, engagement at selected appeals positions converts intrinsic appeal to actual appeal (similar to our discussion in Chapter 5). The revised formulation shares some theoretical similarities with concepts covered in revised density-dependence. So far, most of these dynamics are as elaborated in previous two chapters. The key difference for determining niche-width is the "principle of allocation." It states organisations are unable to engage all possible points due to resource limitation, and thus cannot fully meet the tastes at their chosen social position. The principle of allocation requires the organisation to prioritise its appeal positions for engagement (Hannan et al. 2007)

Definition 6.1.5 (Principle of Allocation) *The principle requiring an organisation to decide on a trade-off between the organisation's ability to (1) engage with new social positions (niche-breadth); or (2) add new social positions (engagement intensity).*

Organisations cannot readily decide to engage on new positions as they see fit. Such a strategy requires change in its internal routines and changes. This has implications in its own right (Barnett et al. 1995; Hannan et al. 2003a,b).

Accordingly, they concentrate on appeals points that have a maximum fit between with their offers and tastes—defined as the organisation's region of peak appeal. Remaining positions are left unengaged, and thus reaching the first step of defining organisation-level niche-width.

Once organisations are aware of the category-level niche and their specific organisational-niche, which is a subset of the category-level niche. The next step requires conversion of the peak appeal region to actual appeal. HPC used GoM to quantify engagement and an organisation's offer meeting taste requirements—similar to a form's compliance with a schema. An organisation's low ratio in either the engagement or offer implies limited returns for the organisation and increasing mortality hazard. Once organisations decide to select their social positions, they start to finalise their *organisation-level fundamental niche*. The organisation's fundamental niche represents the total positions the organisation can operate without competition.

Definition 6.1.6 (Organisational-Level Realised Niche) *All social positions the organisation is able to engage based on its GoM's of the offer and its engagement pattern.*

Once competitive elements are introduced, the organisation starts to operate within its realised niche. The understanding of competition is similar to revised understanding of density-dependence. Recall, we mentioned that two or more organisations can target a specific social position, creating a competitive relation. Under niche-width the definition of the competitive relation is overlap of niches between organisation. The higher the overlap of the niches between competitors, the stronger the competitive relations and intensity between them raising the mortality hazard for unfit organisations. How is this fitness determined or achieved? It is related to strong conversion of intrinsic appeal to actual appeal, which is achieved if the organisation's offer: (1) attain a high GoM score for the targeted social positions and (2) the organisation's engagement efforts are successful (Hannan et al. 2007; Le Mens et al. 2011, 2015).

Niche Expansion

At this point, we would like to add another aspect of niche-width for theoretical completeness—its expansion. The HPC Framework (Hannan et al. 2007, Chap. 13) explicates that organisation niches can expand to other regions of the audience appeal space.

Definition 6.1.7 (Niche Expansion) *The act of the organisation to increase its Organisational-level Fundamental Niche to include additional appeal positions.*

There are four main implications arising from niche expansion, which we review briefly.

Latency. Firstly, benefits that accrue to the organisation from an expanded social positions are not instantaneous. Rather, a time period has to elapse before an organisation is able to reap those benefits; the HPC Framework has referred to this as the latency effect.

Definition 6.1.8 (Latency) *The time difference between when the organisation added a new social position and when first set of benefits were received.*

The latency effect increases the mortality hazard of the organisations, as it is still learning the taste idiosyncrasies at the newly engaged positions. Organisations need to spend time to understand the taste profile, to develop suitable offers, attain a significant GoM score enabling them to reap the benefits. Such strategies may or may not work for the organisation—hence, the elevated mortality hazard.

Principle of Allocation. The second implication arises from the principle of allocation. As stated earlier, an organisation cannot equally engage at all of its chosen social positions. Naturally, organisations choose to concentrate on regions of its peak appeal. Therefore, once a new social position is added, an organisation has to *shift* resources from its region of peak appeal to extract resources from the new social position. Such actions put an organisation in a disadvantageous state, as coupled with the latency effect, and thus increasing the mortality hazard.

Internal Changes.   Once an organisation decides to expand the niche, it entails internal changes as well. The newly added social positions entail the restructuring of organisational units to cater to the new tastes profiles, development of offers, and management of engagement patterns with the audience segment. Issues of change cascade and internal make-up of organisation structures (Barnett et al. 1995; Hannan et al. 2003a), and taken-for-grantedness of organisational assumptions (Hannan et al. 2003b) can contribute towards elevated mortality hazards.

Social Position Choice.   Another consideration in niche expansion is the organisation's choice of social positions. It can choose to expand to positions closer to its existing niche, or further away. Logically, if the organisation expands to positions located further away from its existing regions of appeal, it raises the mortality hazard. As the tastes profiles vary greatly for positions located further away from its niche, in comparison to closer points. This entails the organisation to spend time and understand tastes at the newly added position— and coupled with the latency effect, there is a delay between the organisation adding the positions and receiving a benefit (Hannan et al. 2007, Chap. 13).

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Under the reformulation of niche-width, HPC positioned the generalists vs specialist debate as a secondary issue. Instead, the focus was on development of offers related to the their chosen social positions, organisations attaining a high GoM for developed offers, developing suitable engagements patterns to understand taste profiles, and presence of organisations competing for the same social—the selection mechanisms within the theory of niche-width. One can draw a parallel with the classical theory by stating an organisation operating on a broad set of social positions has a generalist niche, while the opposite applying to specialists. However, we believe, such a comparison diminishes the value created in the reformulated theory.

6.2 Theoretical Review—Realised Niches

We now move the discussion forward and elaborate on the mechanics of niches in the presence of competitors—realised niches. Readers maybe confused at our mention of realised niches, considering we covered it as part of the reformulated niche theory. Unlike the previous theoretical fragment, this one deals with issues of marketing partitioning. Whereas, the niche theory deals with organisations outlining themselves in the market. This fragment deals with a population as a whole; hence, it has a more macro perspective to develop insights. Similar to previous theoretical fragments, this also had a classical understanding developed by Carroll (1985) followed by the reformulation by Hannan et al. (2007). The same set of collaborators embarked on revising resource partitioning to develop new theoretical insights. In following sections we provide a detailed overview of this theoretical fragment's development.

6.2.1 Classical Perspective

The second perspective—resource partitioning—states that generalist and specialist orientation is a consequence of competitive pressures generated between organisations as they contest for resources.

Glenn Carroll's (1985) departure from studying large organisations enabled him to answer the presence of smaller organisations in the presence of large organisations. The abstract imagery starts with a population contesting for resources, with abundant resources located in the market centre. There is implied understanding the market centre *will* contain regions of resource abundance.

Definition 6.2.1 (Market-Centre) *A region of the market with an abundance of resources (Hannan et al. 2007)*

Organisations move towards the centre in pursuit of additional resources and the benefits associated with increasing scale; in ecological terms, the ability of reduced mortality hazard. During this process, the resource bases overlap similar to the niche-overlap we mentioned above, increasing competitive relations. Weaker organisations, located in the market centre, are unable to sustain

highly competitive dynamics raising their mortality hazard leading up to their final demise. They leave behind their resources, acquired by existing players in the centre who get even larger. This process continues until an organisation experiences limits to its adaptability and are unable to acquire all resources, leaving some unwanted resources. It is in this unwanted resource space that specialist organisations are formed (Carroll 1985; Carroll et al. 2000a).

Three conditions needs to exist for a population to experience resource partitioning, which we review briefly below. The first condition is: the presence of limited resources. Organisations move to the centre when their current resources base become insufficient to meet their strategic needs. They seek out areas of the market with high availability of resources, hence, moving to the centre. The second factor is scale-advantage, which is linked directly with more resources. As an organisation acquires more resources it uses them to grow in size and become larger exerting significant competitive pressures on remaining members of the population. The final condition is also linked as consequence to the organisation's size. Since they have become large, they are unable to quickly change their strategies, due to inertial factors (Carroll 1985).

Two of these preconditions suggest that we may not see the emergence of resource partitioning in our research context. Firstly, our research environment has increasing resources as we elaborated in the Introduction. The Government's plans to attract an ever increasing number of pilgrims implies an expanding resource base. Secondly, we believe restrictions may apply to scale advantages. Once a hotel or retail organisation is developed, it is challenging to increase size, as the physical addition of space entails enormous costs. For example, a hotel was developed with 200 rooms, adding another 200 rooms to accommodate additional pilgrims requires the hotel in buying additional land (which may not be available), incurring construction costs, and then operating. Such a feat may not be possible.

Carroll et al. (2002) elaborated on additional dimensions of resource partitioning supplementing the predominant market location dimension which are: (1) service customisation; (2) anti-mass producer sentiment, and (3) organisation status. Resource partitioning is possible along the dimension of product offering—between standard and non-standard product offerings. Boone et al.

(2000) researched into the Dutch audit industry highlighted smaller audit firms were flexible in their offerings compared to larger auditing organisations, despite the larger obtaining more market share. Secondly, at times the audience may develop position against larger organisations with their preferences towards smaller players. This was witnessed in the case of microbrewery movement of the American brewing industry, which lead to the creation of a distinct organisation category with its own set of selection mechanism (Carroll et al. 2000c). Lastly, in status-based resource partitioning increasing market concentration raises the mortality hazard of high-status firms. In contrast, it is lowered for low-status firms (see Park et al. (2000) for a detailed analysis).

We believe in our community of populations the last conditions (organisation status) may apply to our research context. The presence of 5-star hotels and super-regional and regional malls maybe considered as organisations with a high status value. It is interesting to see the potential in applying resource partitioning to diverse organisational populations and using diverse dimensions to analyse market concentration. We elaborate on our selected dimension below.

6.2.2   Resource Partitioning Reformulation

Similar to the previous two theoretical fragments, Hannan et al. (2007) also enhanced the understanding of resource partitioning by redefining three elements that sustain resource partitioning in a population: scale advantages, market structure, and crowding. Recall, these are the same elements reported in earlier theoretical development efforts of resource partitioning (for example: Carroll 1985; Carroll et al. 2002). We have proceeded with reviewing this in some detailed to show the interconnectedness of the theoretical fragments aiding to a nuanced view of the world of organisations.

Scale Advantages

An essential requirement for resource partitioning is scale advantages as an organisation grows in size. Initially, this was understood as reduced cost structures with increasing organisational size (Carroll 1985). Under the HPC Framework scale advantages is linked with securing additional appeal, provided

engagement at those social positions also increases with size[1].

Definition 6.2.2 (Scale Advantage) *A market experiences scale advantages, if increasing in size leads to increased engagement leading increased appeals.*

The new appeal position causes an overlap amongst other organisations creating a competitive base. Increasing overlap signifies a strong competitive relation decreasing fitness and increasing mortality hazards.

Market Structure

Under the HPC framework, the revised definitions of market centre and market locations aided to a sharper understanding of resource partitioning mechanisms.

Market Centre.   The definition of the market-centre was linked with the concept of appeals as we saw earlier for Density-Dependence (Chapter 5). Similarly, the market-centre would be a location with significant appeals in comparison to remaining market location. Therefore:

Definition 6.2.3 (Market-Centre) *"The market centre for the population consists of those social positions at which the potential size of the demand for the offering of a prototypical members of the category exceeds the average across social positions in the market by some (unspecified) criterion" (Hannan et al. 2007, p.215)*

Organisation's Market Location.   They defined three market locations market-centre, near-centre, and periphery. Each market location is ordinally structured according to appeal bundles. Therefore, the market centre is defined as those social positions where the potential demand is more significant than remaining social positions. An organisation's location in the market is contingent on two items: (1) the organisation's peak appeal is in a respective location; and (2) its fundamental niche intersects the region of location-specific peak appeal. For example, If the organisation's *fundamental niche*[2] intersects the market-centre

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[1]This point is not to be confused with adding new social positions due to niche-expansion.

[2]Recall, fundamental niches is the combination of all appeal positions for an organisation in the absence of competition; it *is realised* niche in the presence of competition.

appeals, and *all* of its appeals positions are in the market-centre, then the organisation is in the market-centre It is important to note, the concept being used here to define an organisation's place *is* the fundamental niche.

Definition 6.2.4 (Organisation in Market-Centre) *An organisation is in the market-centre if its appeal positions are in the market-centre and its organisation-level fundamental niche intersects the market-centre.*

Definition 6.2.5 (Organisation in Near-Centre) *An organisation is in the near-centre if its appeal positions are just outside the market-centre and its organisation-level fundamental niche intersects the market-centre*

Definition 6.2.6 (Organiastion in Periphery) *An organisation is in the periphery if its appeal positions are outside the market-centre and its organisation-level fundamental niche does not intersect the market-centre*

Crowding

Lastly, for partitioning to work, the market requires crowding—significant presence of organisations. The HPC Framework defined crowding in terms of the *thickness* of their niche overlaps. For example, thick overlaps between market-centre with near-centre, and between near-centre with periphery organisations signify a crowded market.

Definition 6.2.7 (Market Crowding) *A market is considered crowded if (aggregated) niche overlaps of the organisations cross a (high) threshold.*

The use of an established threshold is more analytical allowing researchers flexibility to use a relevant metric. In our case it can be number of rooms for hotels and leaseable (lettable) area for retail.

Summary of Reformulation

The revised model for resource partitioning developed a chain-effect between the market positions, in stark comparison to the original formulation by Carroll (1985) that positioned it as a race to acquire more resources. Organisational scale advantages lead to growth in size, leading to niche overlaps with

existing organisations. Centre organisations overlap niches of near-centre organisations and the near-centre overlap with periphery organisation. Implying near-centre organisations have a double overlap. The double overlapping of the near-centre organisation increases their mortality hazards and experience the highest competitive pressures, resulting in their mortality. Over time, the population evolves into a crisp population set, removing any fuzziness that may have arisen during the population's evolution.

However, this reformulation did not address two aspects of resource partitioning. Firstly, in niche-expansion, we saw that an organisation could expand into new social positions. Hence, what is the impact of such phenomena on resource portioning? Secondly, once a population experiences partitioning does it become unpartitioned with time?

6.2.3 Persistence of Resource Partitioning

In order to answer the above question, the same collaborated again to advance on resource partitioning. Specifically, this focused on removing inconsistencies of audience structures, market structure, appeal dynamics, and scale & growth reviewed below (Pólos et al. 2010).

Audience Structure and Appeal Dynamics

The revised theory further decomposed audience structures. Initially, it was implicitly assumed that *within* the market-centre contained market-centre audience positions. However, the revised theory positioned the audience as disjointed segments, each with its taste profiles—that is a varied taste profile. In spite of this refinement, the culmination of appeals in the market-centre is greater than the near-centre. Similarly, the near-centre has more resources than the periphery. This is consistent with the classical understanding of resource partitioning. Previously, the *joint* appeals were distributed between the centre, near-centre, and periphery positions as a single space. This theoretical rendition allowed for a granular understanding of audience positions, as even audience tastes within a social position tend to vary albeit by smaller degrees.

Definition 6.2.8 (Audience Structure Revised) *Market-centre, near-centre audience, and periphery audiences are defined as follows: "(1) the three segments are disjoint; (2)the centre-audience positions are a subset of the positions that comprise the market center; (3) the near-center audience positions lie outside the market center but contain more category resources than peripheral position; (4) tastes are more similar within audience segments than between; (5) the near-center of the market lies between the center and periphery in terms of taste in the sense that the schemas (for the label under consideration) of prototypical members of the center audience are more similar to those of the those in the near-center audience than to the those in the peripheral audience" (Pólos et al. 2010, pp. 3–4)*

Secondly, the theory posited the notion of converting positions of low intrinsic appeals into actual superior appeals through persistent engagement. This implies an organisation spends significant time at this expanded social positions to understand the taste profiles and expends its organisational capital which has implications for raising mortality hazards (see Le Mens et al. 2015 for detailed implications on organisational capital). However, this implies that an organisation's capital is replenishable to cover its cost structure and spend on various organisational activities including engagement. Additionally, this engagement should increase with size increases (scale advantages) as described by the HPC Framework. Therefore, the organisation has the ability to convert its diminished appeal into superior actual appeal.

Definition 6.2.9 (Persistent Engagement) *"Length of period of superior engagement sufficient to ensure superior actual appeal" (Pólos et al. 2010, p. 8).*

Market Structure

Previous understanding of resource partitioning largely remained silent on producer locations except the classical version (see (Carroll 1985). Since the audience segment is granular, the theory matches producer locations in relation to the locations of their audiences' appeal position. If the producer's fundamental niche overlaps the relevant audience segment (for example centre) and it engages with one of those social positions, then it is considered a valid

player of that location. This creates a sense of dual-mapping of market structure. The first one is a distribution of audience appeals, with the distribution of organisations superimposed on it to understand market locations.

The theory relaxed a significant restriction as allowances were given to market-centre organisations to enter the peripheral zones for resource accumulation. This allowance is in stark comparison to the original formulation (Carroll 1985) and revised formulation of the HPC framework. However, it shares similarities with the principles of niche-expansion (Hannan et al. 2007). Previously, an organisation market-centre organisation would not enter the peripheral zones for resource accumulation, as the theory presumed it was not worth the required efforts. The net effect of such a strategy was increased mortality hazard as opposed to reduced. But the revised theory allows an organisation to invade the periphery, seek out a new social positions, and use persistent engagement to develop new regions of actual appeal.

Crowding

Pólos et al. (2010) relaxed the definition of market crowding. Instead of niche overlaps, they used established thresholds to determine market crowding. As researchers this allows for significant flexibility in developing a comprehensive model.

Resource Partitioning Reversal

This theoretical rendition of resource partition provides additional conceptual enhancements to the underlying mechanisms for resource partitioning. However, the most exciting development (in our opinion) is a reversal of the resource partitioning phenomena in the population—whereby a partitioned market becomes unpartitioned. A prerequisite is the intention of centre organisations to invade the periphery—a predatory intent due to underlying competitive contexts (Barnett 2008). This movement is similar to niche-expansion, and the latency effect. This lag increases if the peripheral audience is located far from the organisation's region of peak appeal.

During the ordinary course of resource partitioning, the near-centre organi-

sations cease to exist, and the market is partitioned. Once the centre organisation is successful in invading the periphery, it takes the shape of a monopolistic population, becoming an unpartitioned market. However, resource partitioning can be maintained if the periphery develops a new label and schematisation for the organisations located in the periphery (Pólos et al. 2010). An example of this is the emergence of microbrewers in the American brewing industry (Carroll et al. 2000c).

6.3   Empirical Applications

We now review a few empirical studies that applied resource partitioning or niche-width to study the social dynamics of organisations. Both theoretical fragments have received significant empirical attention on a wide variety of populations. Niche-width was applied to Canadian day-care centres (Baum et al. 1994a,b), investment banking (Park et al. 2000), automobile (Dobrev et al. 2002), movie studios (Negro et al. 2006). Resource-partitioning was applied to brewing organisations (Carroll et al. 1992, 2000c; McKendrick et al. 2014), audit organisations (Boone et al. 2009), newspapers (Boone et al. 2002; Carroll 1985), banks (Lomi 1995). Like the previous chapters, we provide a few selected empirical articles to provide a holistic understanding of organisational ecology.

Technology-based niches.   Technological innovation can change niche dynamics. Empirical research conducted by Dobrev et al. (2002) on the US Automobile sector proved it. Firstly, there is the aspect of offer legitimation. During the observation period of study, it showed the extensive research being expended into developing new engine sizes. It took some time before these new engines sizes were legitimated for the automobile population. Subsequently, it caused the sector to undergo a time of rising densities—as explained by the theory of density-dependence. Secondly, the concept of category-level niche was analysed by understanding the highest and lowest engine capacity produced during the year, which continued to expand until the late 1970s (see Dobrev et al. 2002, p. 250 Figure 1). At which point it began to shrink, possibly due to prevailing situation involving the oil crises and inefficiencies associated with larger

engine sizes. However, the industry was also experiencing market concentration/consolidation, the presence of large automobile producers in the market centre. Their study is novel as it analysed the impact of niche-width dynamics during a time of increasing market-consolidation and expansion of market niche. Their research proved that market concentration due to scale advantages resulted in favourable settings for an ultra-small organisation (an organisation with production capacities of <50 cars)—aligned to the established perspective of resource partitioning. However, their research found "crowding within a firm's technological niche elevates mortality" (Dobrev et al. 2002, p.262). Although, earlier than the development of the HPC framework, it hints towards the competition at specific appeal points and the overlapping of niches. Additionally, it highlights an important aspect of niche-width as highlighted by the HPC Framework–the ability to define niches using a metric scale. They research shows the applicability of the defining audience segments across engine sizes, although this was not explicitly addressed or modeled within the respective regression analyses.

Category Spanning & Niches. Organisational category-spanning impacts niche-dynamics as well. Recall, we highlighted the negative impacted associated with category-spanning, usually in the form of a confused audience that is unable to mobilise resources for the organisation. Negro et al. (2010) analysed the impact of such category spanning on audience appeal structures by studying methods of wine production. Niches were delineated by production methodologies of traditional, international, and mixed. It goes without saying, that as per the form emergence process as outlined in Chapter 4 each label has a certain set of schematisation requirements. Accordingly, each production method contained a set of feature values. In their population, each producer was free to lay claim to production techniques and by proxy to the schema. However, producers started to lay claim to multiple production technologies, thus signaling to the audience of their intentions to the span their original categories. Consequently, audiences were confused as traditional wineries lost their authenticity when they adopted international production techniques—even if the wine was made using traditional production techniques. The expansion into

different production technique expanded the niches of the category. Their research concluded as organisations laid claim to multiple production techniques, the overall category-niche expanded, but audiences were unable to distinguish between the organisation, dropping the category-level contrast and reducing appeal for products. Interestingly, their research also included the classical component of generalism and specialism concerning skill acquisition in their respective categories, concluding that category-spanning also limits skill acquisition.

Identity-based Niches. Organisational niches can also be developed based on organisational identity as we outlined above. Research conducted by Carroll et al. (2000c) research identified the emergence of a new organisational category with a robust oppositional identity from the existing mass producers. Their research confirmed the original resource partitioning hypothesis—as the market concentration rises, resources are freed on the periphery facilitating the emergence of new organisations; the emergence of a new identity—microbrewers and brewpubs-was novel. If new organisational forms can maintain a strong identity, and with the passage of time, get sufficiently legitimated, become an enduring part of the market. The microbrewers and brewpuds organisation forms attained achieved such a status. Conversely, the craft brewers were unable to secure sufficient legitimation, demonstrating elevated mortality hazards. Although this research preceded the development of the theoretical work completed by Pólos et al. (2010), it proves the theoretical underpinnings. It is pertinent to mention, the research focused on *realised* niches and not *fundamental* niches. The activity of microbrewers and brewpubs manifested as a force of competition eating away on the niches developed by the mass-producers, who were engaged in a competitive battle amongst themselves. Furthermore, it is important to note the role audience activity played in legitimising microbrewers and brewpubs as a valid member of the beer organisational category. Such research shows the interconnected nature of organisational ecology and the relevant of the HPC Framework in revising the key theoretical fragments.

Authenticity-based Niches. Lastly, organisational niches can be defined along dimensions of authenticity. Authenticy is an organisation-level trait which informs relevant audience groups on an organisation's realness (Carroll et al. 2009). Research by McKendrick et al. (2014) studied the impact of ownership patterns of scotch whisky distilleries. Their research analysed—qualitatively and quantitatively—ownership patterns of distilleries, with conflicting results. Qualitatively, the audience group preferred drinks that were owned, operated, and produced in Scotland—a trait which communicated the "realness" of the whiskey. The authenticity creates a strong oppositional identity as required for the persistence of resource partitioning. In Chapter 4 we outlined the audience developing the schematisation (or feature values) set for a label, which in the research are the whiskey distilleries. However, the *embedding* of ownership pattern as a feature value to the whiskey distilleries label took a long time. Accordingly, resource partitioning took significantly longer to establish despite the presence of identity patterns.

6.4 Our Theoretical Preference and Research Gap

The theoretical advancements of both niche-width and resource partitioning upgrade these fragments to realities of organisational environments. An additional benefit of theoretical development enables researchers to select an appropriate version in the context of the population. For example, if our data sources contained detailed information on organisations, we might be able to apply advanced theoretical concepts. If not, we can default back to the original theories.

Fundamentally, both niche-width and resource partitioning explain the segregation of organisation populations. Niche-width focuses on the segregation of populations between generalists and specialists *in the absence of competition.* Resource partitioning focuses on organisations developing their niche *in the presence of competition.* Both theoretical fragments explain the partitioning of populations developing a harmonious view of a population. HPC reformulations bring a greater harmony between niche-width and resource partitioning providing a clearer picture of social dynamics. However, it goes without saying

that HPC framework requires significant data for empirical testing.

Additionally, a fundamental requirement for both theoretical fragments is the limitation of resources and increases in organisational size. Niche-width uses resource limitation (and environmental variation) to outline the optimal positions for an organisation in the absence of competition. Resource partitioning requires limited resources coupled with competition to achieve the desired result.

In comparison, our research environment has a few considerations influencing our theoretical selection. Our research context is experiencing rising resources, does this mean organisation niches will not apply to our context, given these theories work based on limited resources? What are the implications of rising resources on category-level niches? Such questions are interesting, but answering them is a different challenge. At this point in the argument we are unable to answer them accurately. Furthermore, either population in our research context is unable to expand its niches or increase its scale—a key condition required for resource partitioning. It is extremely difficult for a hotel or mall to make substantial size additions[3].

It is evident from the literature review that organisational niches and resource partitioning has not been tested in a community ecology context. Accordingly, we believe this to be a promising research avenue for further exploration. However, the challenge is in selecting *a* theoretical fragment to apply within the constrains of this thesis. Accordingly, we have proceeded with analysing resource partitioning for our community population, using a classical understanding. We conducted a preliminary analysis of our data sources precluding the application of the HPC Framework. Our main reason to drop-niche width is based on the population nature. Both populations have limits imposed on their niches due to their physical size (hotels as rooms and retail as lettable area). Therefore, understanding the details of organisational-level niche becomes challenging, as these will rarely change after a hotel is developed.

The second challenge is applying resource partitioning in a community ecology context, as we are dealing with two distinct organisational categories. Does

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[3]Although, malls can expand their area depending on land availability. In Makkah, we doubt this is a luxury given the lack of space.

this mean we have identified a flaw in the theory? We think not, as our answer goes back to the fundamentals of organisation ecology research about units of analysis (Carroll et al. 2000a, pp. 51–54). Our intuition is that resource partitioning operates at the sub-category level, which we elaborate below. We elaborate on this in our following section.

6.5 Segregating Forces in Makkah's Community

Now we explicate certain assumptions regarding the environment of our community population. These assumptions ensure cohesive hypotheses development. Chapter 8 consolidates all our hypotheses stemming from our literature review.

6.5.1 Market Locations Assumptions

We have mentioned previously, that distance plays an important part in organisational dynamics for Makkah. Accordingly, for resource partitioning, delineating the market centre is an essential first step. Since distance plays an important role in our schematisation efforts, we proceed with delineating market locations based on this.

Based on preliminary information from our data sources, we believe the market centre can be defined as 1.5-kilometre from the Grand Mosque. This threshold captures the majority of the organisations and consistent with the original resource partitioning (Carroll 1985) formulation of an active market centre, and under the revised understanding of market-centre (Hannan et al. 2007).

Assumption 6.5.1 (Market-Centre) *The market centre is the area within 1.5-kilometre from the outer perimeter of the GM.*

Next, we define the near-centre and periphery organisations as per the theoretical formulation of the HPC Framework. We believe that hotels and retails located 2.5KM away from the market-centre represents a good starting point for our research, and organisations beyond that are located on the periphery

Assumption 6.5.2 (Near-Centre) *The near-centre is defined by areas greater than 1.5KM and less than 2.5 KM away from outer boundaries of the market-centre*

Assumption 6.5.3 (Periphery) *The near-centre is defined by areas greater than 1.5KM and less than 2.5 KM away from outer boundaries of the market-centre*

In Chapter 9 we test if these assumptions are valid, by understanding the locations of hotels and retails.

6.5.2 Resource Partitioning Mechanism

We conjecture that segregation in the city takes place along the lines of identity. An essential pre-requisite for resource partitioning is the presence of scale advantages (Carroll 1985; Carroll et al. 2002; Hannan et al. 2007). As we stated earlier, it is difficult for our organisations to add new space to either hotels or retails physically. Such endeavours are costly and require new land, which is limited in a city like Makkah. It may seem that analysing resource partitioning is not possible for such a population. However, if we change the unit of analysis from an organisational form to a community grounded identity level, we are able to execute analyses on resource partitioning.

Earlier in Chapter 4 we specified our organisational forms—hotels were classified using a star rating system and retails based on lettable areas. Furthermore, we also mentioned branding holds significant analytical value. Accordingly, we believe if we shift our focus from hotels and retails to these sub-forms level identities we will be able to develop a more nuanced picture for resource partitioning.

From our repeated visits to the city, the generalist identity is firmly located within the market-centre with access to regions of peak appeal. Our intuition suggests that 5-star and 4-star branded hotels and malls labelled as community malls or greater are located in the market-centre. Therefore, we define generalist identity as:

Definition 6.5.1 (Generalist Identity) *Those organisations located within the market-centre (i.e. $\leqslant 1.5KM$) from the Grand Mosque having high intrinsic appeal positions, and strong engagement with their audience segment.*

Conversely, it implies that the specialist identity are other organisations that are not defined as generalists.

Definition 6.5.2 (Specialist Identity) *Those organisations located outside of the market-centre (i.e. $\geqslant 1.5KM$) from the Grand Mosque having relatively low intrinsic appeal positions, and weak engagement with their audience segment.*

We have added an element of engagement within our definitions. Qualitatively, we believe audience segments from affluent backgrounds will engage with the same hotel and retail organisations from their previous interactions. As they are sensitive to the offers of such organisations. Whereas, less affluent audiences are indifferent to the standardised offerings from the various hotels and retail organisation, and are not finicky about their choices. At this point, readers in organisational ecology will question our definitions for departing from the norm, as the theory posits a reverse definition. In Section 6.5.4 we answer this question in detail.

6.5.3 Audience and Appeal Assumptions

Niche-width allows the distribution of audiences along a metric dimension. We believe distance is a suitable metric to distribute appeals for the population. Therefore, pilgrims in proximity to the GM are located on the higher scale of social positions and represent the areas of peak intrinsic appeal at the category level and organisational-level. We also believe that appeal is a joint distribution, allowing for analytical simplicity due to data unavailability issues.

Assumption 6.5.4 (Audience Structure) *Audience social positions are distributed based on distance from the Grand Mosque and with a joint distribution.*

Assumption 6.5.5 (Category Peak Appeal) *Generally, the areas in proximity to the Grand Mosque are regions of peak appeal.*

6.5.4 Conflict?

Our assumptions and definitions may sit at odds with more established theoretical definition of organisation ecology-specifically, generalists (specialists)

having a broad (narrow) appeal base (Hannan et al. 2007). We take the pertinent issues in a sequential manner. In developing this section we use Definitions 6.5.1 and 6.5.2, and Assumptions 6.5.4 and 6.5.5.

Market-Centre.   The first part in organisational niches is defining the market-centre. As we elaborated above, the theory dictates the market-centre is a resource rich area of the market enabling organisational expansion. We believe in Makkah, the region defined above ($\leqslant 1.5KM$) is the market-centre. It is a focal point of activity—spiritual and material. Based on our observation, pilgrims tend to spend their time in the expansive piazzas waiting for prayers, and upon completion spend time in the nearby malls for food and retail activity.

Peak Appeal Region.   Related to the market-centre are regions of peak appeal. As elaborated above, the regions of peak appeal are usually *within* the market-centre. Makkah is no exception, the areas in proximity to the Grand Mosque have the highest intrinsic appeal for *all* organisation types. Proximity to the Grand Mosque ensures pilgrims are able to meet their spiritual and physical requirements. Thus peak appeal is inversely related to distance from the Grand Mosque, as stated in Assumptions 6.5.4 and 6.5.5. Furthermore, we want to link the peak appeal region with the audience segment. Affluent and very affluent pilgrims engage with the organisations located within the market-centre. However, as the distance from the Grand Mosque increases, the affluence of pilgrims drop.

Organisational Niches.   Based on the theory, actual appeal is created after a organisation engages with the audience segment to convert their intrinsic appeal to actual appeal. Here we have to analyse this situation in two parts, enabling us to reconcile our definition with the theoretical definitions of organisational niches as covered within the relevant literature. Given, the market-centre has affluent pilgrims and limited expansion of a hotel (or retail) organisation. It follows each organisation (hotel or retail) is commanding a broad range of resources and is able to pick and choose their audience segment as long as they meet the price criteria. Accordingly, each organisation commands a broad

niche, because, if an audience wishes to stop their engagement with an organisation another one is willing to pay the price for the comfort received. Conversely, in areas away from the Grand Mosque, pilgrims are more dispersed across the distance dimension and each hotel has access to a low number of resources, requiring significant engagement efforts. It follows such organisations to have a narrow niche.

Based on the argument developed in this section we believe we *may* have satisfied the reconciliation[4], but we would like to introduce another perspective, albeit qualitative. Current development plans aim to expand the 5-star and 4-star hotel categories within the market-centre. There are also plans to add significant development projects north of the Grand Mosque and thus increasing the density of the population (PIF 2017). Once these development plans are realised, it is possible the definitions we have outlined here revert back to the more orthodox definitions of organisational niches. 5-star and 4-star to have narrow niches as pilgrims have more options to choose their hotel, whereby the 3-star, 2-star, and 1-star hotels are broad niches as they are able to command significant resources. Furthermore, the affluence of pilgrims may change in the future, whereby we have a significant portion of low-to-middle income pilgrims representing a larger portion of the population visiting Makkah.

6.6   Chapter Conclusion

Organisational niches provides detailed insights into the mechanics of competition for populations. Niche-width helps to establish an organisation's points of optimal performance, whereas resource partitioning outlines achievable performance in light of competition. Both theories were reformulated under HPC developing a much more harmonious link with organisational categorisation and subsequent legitimation. It also detailed the role of audiences, the mechanics of competition, expanding of niches, and invasion of niches. These theoretical extensions provide a detailed understanding of selection mechanisms bifurcating a population.

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[4]At some point in the future, we would love to employ logic to reach this conclusion

We are unable to apply (fully) the reformulated versions of the theory given data unavailability, but borrowed the concept of market locations to develop our understanding. We proceed with applying an identity-based resource partitioning model to understand categorical changes in our community population given its relevance. We define generalist identity as organisations located within $\leqslant 1.5km$ from the Grand Mosque. Usually, these are hotels ranked 4-star and above, and malls classified as community malls and above.

We understand that our assumptions conflict with prevailing theoretical concepts in organisational ecology. Yet, we have proceeded based on these conflicts as we firmly, believe these reflect the social intuitions. For example, any pilgrim would love to stay in proximity to the Grand Mosque to complete their religious requirements, and hence the appeal of the 5 and 4-star hotels is high, appealing to a larger segment of the population.

Chapter 7

Critical Perspectives

7.1   Introduction

An argument remains incomplete if opposing views are ignored. In this chapter we have endeavoured to capture the key arguments against organisation ecology. Majority of critical views are classified into difficulties associated with the theoretical application, requirements of data, and comparison with Industrial Economics. We begin the chapter by providing a overview of an early critic. Subsequently, we review the discussion on how organisation ecology relegates the roles of manager from organisational decision making. Thirdly, we analyse the issues with organisation ecology pertaining to organisation specific issues. Lastly, we review the comparison of organisation ecology with industrial economics.

7.2   Early critics

Young (1988) was one of the earliest critics of organisational ecology, questioning its foundations. Young raised several objections on the delineating organisation forms, to which we have highlighted in our literate review. She posits that defining organisation forms is a complex task and borrowing theoretical knowledge of biotic population is irrelevant due to underlying differences. Since her article, significant theoretical development provides a much sharper under-

standing of organisation forms, addressing Young's initial concerns of classifying organisation forms. In Chapter 4, we conducted a schematisation analysis to identify the organisation forms in our community population. This analysis was facilitated by knowledge from the HPC Framework showing the relative ease it can be implemented.

Furthermore, she is critical of the inertia theory attempting to deconstruct it to provide clarity it. However, the work of Péli et al. (1994) ensures the theoretical inconsistencies are removed. Lastly, she also mentions the significant data and research requires to undertake an organisational ecology program. Carroll et al. (2000a, Chaps. 5-8) outline the challenges researchers face during data collection and the strategies to avoid them. Granted, non-availability of data can preclude specific populations, but this risk is inherent in most research projects.

In the remaining parts of this chapter, we outline thematic criticisms levelled against organisation ecology by some researchers. The intent is to provide a holistic understanding of the drawbacks of this theoretical paradigm. We believe the conclusions developed from organisational ecology are incisive and refreshing on issues faced by organisations.

7.3 Passive Management

According to Pinto (2005), the most substantial drawback of organisation ecology's theoretical framework is the passiveness of management. According to his perspective, management is the fundamental entity that determines the strategy and course of an organisation. Pinto maintains the management can address challenging concerns and not necessarily left to the environment to decide a course of action. This objection by Pinto is a valid point; a review of the core organisational literature rarely reveals the role of management (Carroll et al. 2000a; Hannan et al. 2007). However, the only portion of organisation ecology that hints towards relative active management is the work on organisation change (Hannan et al. 2003a,b) that briefly outlines, strategies for business managers to minimise the impact of organisational change.

Our perspective is that organisation ecology provides business managers

with the lens to decompose their complex environment to develop a holistic strategy, incorporating broader environmental information as part of their decisions making. For example, the American brewery industry underwent significant changes during the 2000s, with the rise of microbreweries and brew-pubs. Business Managers of the largest producers realised this and started to enter this market to expand their business—in traditional terms diversification (Carroll et al. 2000c). Similarly, organisational ecology principles predicted that hotels in the Manhattan hotel market fared better if they used names aligned to a growing number of hotel chains as it communicated a prototypical taste profile to relevant audience segments (Baum et al. 1992). If hotel managers remain adamant about using localised naming strategies, surely this poor management and not a weak theoretical framework.

In our view, organisation ecology equips management to understand the position of their organisations concerning remaining members and implement a holistic business strategy improving the organisation's survival chances.

7.4 Organisation Level of Analysis

Pinto (2005) raises another critique of organisational ecology. He posits that organisation-level idiosyncrasies are hidden as research is aggregated at the population level. Organisational ecology's focus on population-level processes such as organisation forms, density, and niches preclude organisation variables even though they may be contributing to the organisation's failure.

At this point of organisation ecology's development, we believe Pinto's objection maybe be valid, but work in the domain is progressing to rectify this. Work led by Baron and colleagues (Baron et al. 1998, 2002) is seeking to address such issues raised by Pinto. Their work analysed human resource structures of technology organisations located within the Silicon Valley, concluding such firms utilised five different models: star, engineering, commitment, bureaucracy, and direct control. Each model has distinct characteristics basis of affiliation with the company, selection of talent, and employee controlling mechanism (Baron et al. 2002, p. 11). Granted, the researchers spent significant time in recording the organisational life histories to conduct such research. However, such

research shows that social phenomena require careful examination to identify causal factors.

Furthermore, we believe Pinto may have focused on research papers covering organisation as a unit of analysis. Zuckerman et al. (2003) utilised an unconventional unit of analysis—individual actor careers as the unit of analysis. Their research identified the impact of typecasting on an actor's probability of future work either in the typecasted category or other categories. This research highlights that organisational ecology contains inherent flexibility in selecting the appropriate unit of analysis depending on the research context.

7.5   Industrial Economics Comparative

A third thematic critical perspective we have identified is the comparison of organisation ecology to industrial economics. Pinto (2005) takes a critical perspective suggesting that research effort expanded on organisational ecology is insufficient in comparison to Industrial Economics. Furthermore, he concludes that "[o]rganizational theorists who wish to conduct research at the industry level are better served by adopting the framework of industrial economics" (2005, p. 7).

Geroski (2001) outlines a much more mutualistic approach recommending that both theoretical paradigms can benefit from each other. He makes a valid statement that "ecologies are less interested in the properties of equilibria and more interested in the process that leads to equilibrium" (2001, p. 508). As we have outlined above, organisational ecology focuses on the endogenous industrial processes. Geroski provides a detailed comparative between organisational ecology's theoretical fragments such as density-dependence, niches, legitimation, and competition. We refrain from going into a detailed discussion on the comparison between the two paradigms but summarise the key benefits and drawbacks from organisational ecology to industrial economics with our own experiences in the following section.

7.6   Researcher's Voice

Firstly, a key benefit of organisation ecology is its long-term view of the population that develops a coherent population image. It answers the question "how did the population reach its current state." This long-term view removes the inherent biases that can arise from cross-sectional research. For example, if researchers take a population's cross-section during a tumultuous time, results will conclude that the population is experiencing a significant correction. However, the efforts required to build a long-term population view are extremely difficult. We have experienced it as part of this research effort. Information (and data) is not readily available in a format for analysis. Researchers have to conduct extensive searches to identify the correct data set. Although difficult, but once such a data set is found, the analyses results in a nuanced, yet holistic, view of the social phenomenon under consideration equipping researchers with required confidence to confirm social intuitions, similar to our case.

Secondly, organisational ecology's perspectives on competition capture the realistic response of entrepreneurs to existing market players—that is, entrepreneurs do not enter a population to compete directly with focal entities. Instead, they "are instructed not to assault barriers head on but to circumvent them by expanding the market or changing the basis on which competition takes place" (Geroski 2001, p. 533). We largely agree with this notion, as organisations do not establish themselves to compete with certain organisations, and a property of organisational ecology we see as most pertinent in today's dynamics world. Numerous start-ups seem to be doing the same thing, but different in many ways. For example, the current "uberisation" trend for various services is a prime example. Services like Uber, Lyft, or Careem (in the Middle East) all provide ride-hailing services, but try to create a sense of differentiation.

Thirdly, inertia theory coupled with organisation change outlines that it becomes increasingly difficult for organisations to change, something that can benefit industrial economists to understand organisations (Barnett et al. 1995; Hannan et al. 1984, 2003a,b). This aspect of organisation ecology is extremely difficult in developing credible research avenues, in addition to the challenges faced with data collection and gathering. Whereas, the developed theory within

organisation ecology is strong, coherent, and interconnected to provide the challenges during an organisational change event, which make sense from a professional practice perspective. However, their implementation and equipping managers to successfully control or manage change is difficult.

Geroski also mentions some issues with organisational ecology, echoing the view of Pinto. Ecology downplays the role of managers in developing and maintaining organisations by responding to the unfolding dynamics of their environment. Pinto had some reservations on the delineation of organisation forms, with Goreski having confusions on the organisational element being legitimation—either organisation or its offer. Barron (2001) provided a summarised, yet detailed account of the quantitative factors that interplay between density, competition, and legitimation, removing any ambiguities for industrial economists. This confusion was further cleared with the publication of the HPC Framework (Hannan et al. 2007, Chaps. 1- 4) that stipulates that legitimation takes place at three levels: category, organisation, and its offer. Geroski mentions that "organizations do change, and to start from the premise that they do not seems unreasonable" (Geroski 2001, p. 536). As we stated above, additional research on organisation change has greatly improved these perspectives providing a much richer and flexible theoretical model. For example, Carroll et al. (2000a, p. 396) list the impact of change on organisation life chances. Lastly, we agree with Geroski, on organisation ecology's understanding of performance is survival. As a practitioner, we know that organisations rarely speak about their survivability, but rather in terms of increasing profits.

Lastly, we would like to state, another element we experienced while going through the motions of understanding organisational ecology. Attaining mastery in the knowledge domain and trying to decipher the interconnectedness of the theoretical fragments is no easy feat. Especially aspects involving the use of logic (first-order and monotonic) and complex mathematical regression models. It can demotivate many a researchers from pursing the field as the expectations are high. In our example, we have refrained from developing a theoretical rendition or use of logic, due its complexity at this stage in our researcher phase. Plausibly, it is due to this complexity, we see a limited number of researchers contributing to organisational ecology despite its long historical founding. But

we also believe, this complexity enables researchers to perform at their best level to develop a meaningful contribution–surely, we feel this, but are unsure if our research will be accepted as a meaningful contribution.

7.6.1 Critical Theoretical Reflections

Although, we might agree with overall theoretical framework of organisational ecology, but some elements are not fully addressed by it. In the paragraphs below, we have elaborated on key points where current theory is insufficient. We believe, future theoretical work can be undertaken to improve the framework of organisational ecology.

Audience Belief System

A big challenge within the current theoretical organisational ecology framework is accommodating a religious site, such as Makkah. Its location creates an aura of acceptance across various levels, not addressed by the theory. In Chapter 4 we elaborated on the mechanism of organisational categorisation. We saw the audience plays an important role in developing and shaping the organisational category and the offers. In Makkah, we believe, the audience segment may not be active in comparison to audiences depicted in various organisational ecology research studies. Pilgrims, given their objective of spiritual fulfilment, will focus on it overlooking any inconsistencies in offer development (or the material world). Consequently, from an organisational ecology perspective, a true picture will never be developed for offer construction. Furthermore, we believe, this phenomena might be taking place for hotels and retails targeting the pilgrims from the lower-to-mid income bracket, whereas, the higher income brackets are more nuanced and expend significant energy in developing the offers. This notion is problematic, as it implies differing levels of religiosity based on income levels, but the social phenomenon does exist (Koçak et al. 2008, p. 1312).

In other words, we are saying the organisational ecology theoretical framework should be enhanced to accommodate for an audience's belief structure. Research conducted by Hsu et al. (2011) briefly mentioned the concept of au-

dience beliefs, but this was understood in the context of the organisation, the label, and the categories under the audience. Efforts were made to understand religion and its impact on a social phenomena. For example, research by Koçak et al. (2008) analysed the impact of church participation organisations in the presence of multiple religious belief systems. Their research concluded the availability of multiple religious belief systems and increasing urbanisation decreasing the Church participation. But in certain denomination (not necessarily rural) religious diversity led to increased participation as the audience group saw a threat and reinforced their religious beliefs by attending church. Furthermore, the impact of pilgrim religiosity on the schematisation efforts is another challenging aspects (reviewed below).

Complex Social Environment

After elaborating core theoretical fragments of organisational ecology, it is apparent the theory expends significant time in understanding organisation-environment relations with little information on endogenous environmental factors. Makkah's has a complex environment, and we try to unpack this complexity in the following paragraphs.

Audience Layer. The first layer of complexity are the requirements of Makkah's audience segment: residents and pilgrims. Residents live and work in Makkah and are the primary group whose tastes profiles should be matched and addressed. It is clear the hotel category will seldom cater to the taste profiles for this audience segment, but the retail organisation are a different matter. Retails have the the flexibility to adjust their offers according to two sets of audience groups–the local residents and pilgrims. Retail organisations in proximity to the Grand Mosque will seek to satisfy taste profiles of pilgrims, whereas retails located further away will cater to the resident population. Therefore, during offer construction they will address two types of audience segment, but which one prevails can hold implications for the mortality hazard. Granted organisational ecology posits organisations should develop an offer with a *high* GoM.

This leads us to the second point how retail organisation determine which audience segment to address. One group is the permanent resident population

with a stable taste preference and stable engagement patterns (see Liu et al. (2020) as an example of engagement). Retail organisations are able to better predict the taste requirements and develop offers with (supposedly) a high GoM. Conversely, the second audience segment are pilgrims, with diverse and unstable taste profile. We position pilgrims tastes as unstable, because they can change from year to year. For example, a cohort of pilgrims at a time point, may have a set of taste requirements. When they return to their native countries, they develop new experiences and tastes. Furthermore, they may have moved up in the socio-demographic scale as well. Subsequently, when they arrive in Makkah to perform their pilgrimage again, retail organisations may struggle to cope with the revised set of tastes profiles. Retail organisation face this considerable dilemma, which is exacerbated by volume of the two audience groups. Do they address the resident population with stable tastes profile, but a smaller volume or do they cater for pilgrims with unstable and temporary taste profiles? Each group holds implications for an organisation's resource flows.

Coupled with the point above, is the nature of pilgrims temporariness and "transitionairness". Pilgrims are always "passing by" Makkah, never contributing towards its urban identity, in whichever shape it may be. This creates a challenge within organisation ecology as social forces tend to drift. Research in organisational ecology tends to focus on drifting tastes as the underlying selection mechanism (Le Mens et al. 2015) or studying the nature of engagement patterns (Liu et al. 2020). Are these sufficient theoretical fragments to understand pilgrim responses in the context of organisation ecology, or does the theory need to borrow from other theoretical practices. Theory in organisation posits that an environment in flux lacks agreement and general consensus (Bogaert et al. 2016). In Makkah we have a unique situation given the dichotomous nature of the environment—a permanent resident population and a transitionary population. At the time of writing, we saw significant impact brought on by COVID-19 hampering the resource flows of hotels and retails dependent on this transitionary audience segment. This is a prime example of organisations creating offers around a transitionary audience segment. In terms of theory posited by organisation ecology, we can say such offer construction tends to increase the mortality hazard of the organisation.

A follow-on from our point above, is the impact such an audience structure has on the schematisation activities. Does knowledge of the environment ever reach a taken-for-grantedness nature? Current theory in organisation ecology predicts the environment to reach a high-level consensus during the schematisation stage (Hannan et al. 2007). However, in those contexts there is implicit assumption of a somewhat stable audience presence engaging with environment in a consistent manner for categorical formation. In Makkah, we have the temporary and transitionary audience segment which may not see the need to engage with the environment for categorical formation. This issue is further enhanced, when we account for pilgrim religiosity. A pilgrim with a high religious zeal may shun him/herself from the material world hampering the efforts in schematisation. Based on the theory reviewed in the preceding chapters we conjecture Makkah does experience from categorical formation, but over a longer than expected timeline.

Government Layer. The second layer in the complex social environment is the Government of Saudi Arabia who have diverse objectives in relation to Makkah. Over the years, the Government has made sizeable and significant investments in Makkah to improve the Grand Mosque, the public infrastructure, and transforming the urban landscape. It is the latter aspect becoming visible to the pilgrims and residents alike, notably, the clock tower overlooking the Grand Mosque.

If we analyse this aspect within organisation ecology, it begs the question, which audience segment created the seeds for categorisation of such building projects? Who is the audience segment? Evidently, the answer is the Government, which represents as a dominant audience segment in determining the trajectory of tastes profile. Anecdotally, such projects were a rarity 10-15 years ago. At the time of writing, the urban landscape has similar projects all contributing towards enhancing the city's infrastructure and urban fabric. Certain readers in organisation ecology may see today's activity as a parallel to inertia—whereby the Government is set on a course of executing real-estate development projects. Conversely, a view arises suggesting this is necessary to meet the growing number of Muslim Pilgrims arriving in Makkah. A logical

argument, but it creates another issue—making space for such development in a city with limited land availability. Accordingly, some are critical of the Government's handling of historical religious sites, exchanging religious history for economic benefit (Power 2014). It is impossible to reconcile and provide a definitive view on this matter within this thesis. However, we believe, the only thing constant is change.

Muslim World Layer. The last layer in the complex social environment is the Muslim work at large. In organisation ecology context, they are a viable audience segment, but they are unable to expend any significant efforts in determining the course of most ecological factors, except one: legitimation. We believe, the Muslim World is an active force in increasing the legitimation threshold of major activities in Makkah, in the form of pilgrim acceptance. Subsequently, these same pilgrims, impact the legitimation dynamics of their native countries by creating the seeds for new organisational categories. Obviously, organisational ecology does not operate in such a broad and open scale, and nor it should as the research insights will be inconclusive. However, organisation ecology *can* analyse a phenomenon in a larger, but related geographical context (for example: Hannan et al. (1995)).

7.7 Chapter Conclusion

In summary, we understand the level of criticism for organisation ecology, as one of the many theoretical frameworks available to study our research questions. Yet, we proceed with OE to answer our research questions. Do we appear as dogmatic vis-à-vis organisation ecology? A plausible situation, but what appeals to us is the tight theoretical coupling of the various aspects of organisational sociology. It has sought to quantify various phenomena into a single theoretical framework. Furthermore, we are interested to apply such a theoretical framework in a new context—dissimilar identity patterns in the context of community ecology. Accordingly, we proceed with applying organisation ecology principles while being mindful of the criticisms raised against it.

Chapter 8

Research Hypotheses

Finally, we direct our discussion on the research hypotheses of this thesis based on the literature review, the developed assumptions, and on data limitations. We do not structure this Chapter based on the theoretical fragments, instead, we use a thematic structure. Such a structure enables us to develop integrated hypotheses drawing on knowledge from across the theoretical fragments.

In section 8.1 we seek to identify the impact of distance on schematisation requirements. We are trying to answer, if organisational diversity changes with changes in distances from the Grand Mosque. Section 8.2 is the major bulk of our hypothesis seeking to understand changes in vital rates. Specifically, we try look at the changes in founding rates concerning distances and for intra-population dynamics. Section 8.3 directs the discussion towards the community by looking if there is an interaction between organisational populations. Finally, in section 8.4 we analyse if the *community population* is experiencing resource partitioning.

8.1   Identity Dynamics

We have highlighted distance from the Grand Mosque impacts the population dynamics of our community population. We believe the distance from the Grand Mosque is a feature value not included in the current schematisation.

Instead, it is socially constructed feature-value developed in response to limited land availability. Hence, as the distance from the Grand Mosque increases, certain organisation forms are more likely to be founded and others not. We envision distance restricts identity of a organisation; therefore, we hypothesise:

Hypothesis 1 *As the distance from the GM increases, the identity restrictions drop for our community population, and we witness multiple identities co-existing within the same distance, except 5-star, and 4-star branded hotels and structured retail who are restricted by distance increases.*

8.2 Vital Rates, Appeal and Taste Dynamics

It follows from Hypothesis 1 that vital rates are subject to changes due to schematisation requirements—certain organisation forms will have rising founding rates, while others may not. Therefore, we envision increasing founding rates for 3-star, 2-star, and 1-star hotels with increases in distance. Conversely, as the distance increases, it reduces the founding rates for 5-star and 4-star hotels. The social intuition is as follows: these hotels offer luxury packaged as reduced commute times between the hotel and the Grand Mosque. Therefore, it goes against their social make-up to be located away from the Grand Mosque.

Regarding structured retail, we believe as distance increases the founding rates increase. The social intuition is as follows: The land closer to the GM is occupied, physically impossible for the establishment of new hotels/retail, implying physical barriers to entry. The projects by the Public Investment Fund (PIF 2017) and Construction (2020) will facilitate increased founding rates for hotels and retail—albeit their success is not in our observable period. Nevertheless, due to the prevailing appeal dynamics of the environment, 5-star and 4-star will not witness significant increases in founding rates after a certain distance; therefore:

Hypothesis 2 *As the distance from the Grand Mosque increases the founding rates: (1) for 5-star and 4-star hotels decrease; (2) for 3-star, 2-star, 1-star hotels increase; (3) and for the structured retail increase.*

Hypothesis 1 is different from Hypothesis 2, is the former tests the ability organisational category in relation to distances from the Grand Mosque. Whereas, the latter quantifies the hazard of founding in relation to the distances.

We also investigate the impact of distance on mortality rates, as they work in opposite directions—as founding rates rise, mortality rates fall (Carroll et al. 2000a). We believe, as the distance increases and due to increases in density, the competitive relations amongst the 3, 2, and 1-star hotels increases. This then raises the mortality hazard and thus increasing mortality rates; therefore:

Hypothesis 3 *Mortality rates for 5-star and 4-star populations increase as distance to the Grand Mosque decreases; conversely, mortality rates for 3-star, 2-star- and 1-star populations decrease with increases as distance to the Grand Mosque increases.*

We also believe that distance impacts the appeal and taste dynamics of the community population, and both are inversely related to distance. Recall, we mentioned that the region of peak appeal is located in proximity to the Grand Mosque, and the audience social structures are distributed by distance from the Grand Mosques. Due to this social intuition, we envision branded hotels to play a significant part in this. Branded hotels are more appealing to the audience base and significant role in establishing perceptions and defaults for pilgrims, similar to the nature of typecasting—albeit in our context, it is the typecasting of hotel services and quality (Hsu et al. 2011). Furthermore, we believe that branded hotels will only establish themselves within the market-centre; therefore, generally, we hypothesise:

Hypothesis 4 *Founding rates for branded hotels will increase at a higher rate than unbranded hotels within the Market-centre.*

Consequently, it implies from Hypothesis 2 and 3 that as distance increases the appeal for unbranded hotels increase in remaining market locations; therefore:

Hypothesis 5 *Founding rates for unbranded hotels will increase with increases in distance from the Grand Mosque.*

We also investigate the mortality rates on branding structures. We believe, that over years the appeal dynamics for pilgrims are changing. They seem to prefer hotels with a recognisable international brand as opposed to a locally crafted brand, due to default schematisation associated with a branded hotel. Furthermore, for structured retail we believe they will have the lowest mortality hazard within our sub-populations as due to sufficient demand to meet their need, therefore:

Hypothesis 6 *Mortality hazards of branded hotels will be lower than unbranded hotels.*

8.3   Community Dynamics

We also analyse the interaction of founding rates between our community population sub-sets. For example, increasing density in one population may impact the density of other population—a cross-population density effect. We believe, the impact on vital rates is not a contemporaneous effect, a focal population leads such effects in the community and our choice is the hotel population. Pilgrims visit Makkah to perform their religious obligations, and accommodation is the first point of organisational activity. Retail is a supplement to the religious experience, and hence experiences the spill-over effects. Ruef (2000) highlights increased density for organisations sharing similar identity patterns, in stark comparison to our research hypothesis where organisations forms have high dissimilarity.

Hypothesis 7 *Changes in retail vital rates are caused by changes in hotel vital rates, albeit by a certain delay.*

Our intuitions lead us to believe that given the political impetus to accommodate the pilgrims, hotels will see a significant growth rate in comparison to retail developments. Hotels will endeavour to develop appeal positions closely matching pilgrim tastes and preference. Real-estate developers will expedite construction of hotels first to accommodate pilgrims and generate enough resources. Subsequently, real-estate developers will focus their efforts on acti-

vating retail components to attract more resources from the pilgrim audience segment, implying a delay in the two organisation forms.

Additionally, we also think the tremendous organisational diversity, presence of sub-forms, will increase founding rates. Based on the literature review we conducted (for example, Carroll et al. (2000c), McKendrick et al. (2014), Negro et al. (2006), and Ruef (2000)), it appears organisational identity structures have a cross-effect in their respective sub-populations. For example, oppositional identity structures in a population increase the founding rates of the new identity in comparison to more established population segment. Our context has dissimilar identity patterns, what kind of impact will we see? Such identity patterns generate insufficient competitive pressures, thus improving the founding rates for complementary sub-populations; hence we hypothesis:

Hypothesis 8 *Areas present with diverse organisations will see the highest founding rates.*

8.4 Organisational Niches

The theoretical formulation of resource partitioning predicts concentration in the market centre with increasing founding rates in the market periphery. We believe our community population also follows this maxim, despite the presence of dissimilar identity patterns.

Hypothesis 9 *The generalist will witness increasing mortality hazard with specialists witnessing increasing founding rates.*

8.5 Contribution to Research Questions

Our hypotheses contribute towards a much-detailed understanding of community organisational diversity, and the causal factors. In the following paragraphs we establish links between our Research Questions and Hypotheses.

Research Question 1. Research Question 1 states Vision 2030 will create a sense of organisational diversity in the community. In this regard, Hypothesis 1 answers the question by linking organisational form emergence with respect to distances from the Grand Mosque. If Vision 2030 promises an increasing resource base, we should see diverse organisations laying to claims of various organisational types within the community population, and not claims to just only a few set of labels. Our hypothesis outlines the variable that restricts this organisational diversity—*Distance from Grand Mosque*, suggesting that despite increasing resources, diversity is limited by distance dynamics embedded in the prevailing social codes. Furthermore, we are also analysing diversity caused by inter-organisational population dynamics—namely, the evolution of organisation niches.

Research Question 2. Research Question 2 inquired the ability to quantify competition and taste pressures along dimension of location and distance. A key point to note is the difference between distance and location. Location refers to the *place* of an organisation in the market (centre, near-centre, or periphery); whereas, distance refers to the distance from the Grand Mosque. In this regard, Hypotheses 2, 3, 4, 5, and 6 help to answer this question. Similar to organisational diversity, competition is also impacted by distance from the Grand Mosque—our second research question. However, we have structured competitive pressures along with two areas. Firstly, hypotheses related to the market-centre will show the appeal of those locations resulting in the creation of more branded hotels instead of unbranded. Secondly, areas located further away from the Grand Mosque will have access to sufficient resources. But, the structure of appeals is different—preference towards unbranded—therefore, we would witness an increase in founding rates for those organisations.

Research Question 3. Readers will notice, none of our hypotheses relate to Research Question 3—the impact of regulation on vital rates. We believe the answer of this question lies in analytical diversity rather than developing a new hypothesis. By using control and dummy variables we can answer this question. This is covered in greater detail in Chapter 9.

Research Question 4. Research Question 4 tries to assess if there is a statistical relationship between our community population—a key aspect of community ecology. In this regard, Hypotheses 7, 8, and 9. Accordingly, we analyse if vital rates in our population changes the vital rates of a secondary population. Such a effect, with statistical significance, will confirm our research question. Furthermore, we analyse the impact of community diversity on founding rates hinting towards a symbiotic relationship between our organisational population.

8.6   Chapter Conclusion

Primarily, our hypotheses are trying to address the role distance plays in changing schematisation requirements, eventually impacting founding rates. In the context of community ecology, we try to understand the interaction of founding rates—how founding in one population impacts the other. Additionally, we are not solely focused on founding rates and analyse mortality rates. Our understanding of mortality rates is driven by sub-population dynamics contained within their respective geographic locations. Furthermore, we assess if resource partitioning operates within the population.

Part III

The Expounding

Chapter 9

Research Methodology

In this section, we elaborate our research methods to execute our research plan and provide a detailed account of our intended steps. This detail ensures that readers can replicate and reproduce our results with required level of assurance. The chapter also *moves foward* our argument structure by elaborating on its operationalisation. In Chapters 4 - 6 we laid the theoretical groundwork to analyse our research context. Subsequently, in Chapter 8 we developed a detailed set of hypotheses founded on the theoretical framework. In this chapter we explicate the steps we will perform to arrive at our results.

We begin the chapter with an evaluation on our data sources followed by a few technical considerations pertaining to research operationalisation. This is followed by our research variables with their associated measures. We conclude the chapter with our research procedures and our conclusion.

9.1 Data Sources Review

Recall in Chapter 2 we provided an overview of our data sources, and the evaluation criteria used to assess a data source's viability for inclusion in organisational ecology analysis by evaluating it against four points: organisational coverage, event coverage, precision, and level of details. We reached out to STR, Knight Frank, and Ministry of Tourism to understand data availability.

9.1.1 Hotel Data Review

We contacted STR to obtain information on our Hotel requirement. STR provided us with information on 84 hotels (active and inactive) properties located in Makkah with their dates in the format of month and year, only. Their database was expansive with detailed information on the physical properties of hotels in terms of rooms and features, the existing and previous brands, GPS locations, size in the number of rooms, and general contact information. Importantly, the database contains historical information on a hotel's brand changes. In Section 4.8, we specified that we consider changes in the hotel's brand as a mortality event, and STR's data facilitates such mortality orientated analyses. Based on the four points we mentioned earlier, STR's data meets three areas out of the four, and thus enabling us partially to conduct relevant analyses. However, we believe it may lack in the the organisation coverage area. Our repeated visits to Makkah easily inform us that a database of 84 hotels may be insufficient.

We contacted STR to learn their basis of inclusion for a hotel. They responded that a hotel should have ten or more rooms to be included in their database (see Appendix D) Therefore, we think a total dataset of 84 hotels may not provide adequate coverage for our analysis.

In contrast, the Ministry of Tourism's website in Arabic provides a detailed list of hotels in operation across the country without providing additional information such as sizes, rooms, locations, and opening dates (Tourism 2020b). Furthermore, we contacted the Ministry's specialised centre for providing information on hotels if they can share the information with us. The centre responded that they do not have the necessary authority to share such information (see Appendix C).

Conclusion. We proceed with using the information provided by STR, in spite of the partial information. We do not have an alternative data source as complete as STR, given our data constraints.

9.1.2 Retail Data Review

Knight Frank's data provided us with information on 29 structured mall properties located in Makkah. Their dataset includes sub-category labelling, size, opening date in year format only, size in the lettable area, and the GPS co-ordinates. We cross-verified Knight Frank's data with MESC's data by reviewing their annual publications noting a high similarity between structured malls. Furthermore, we noted that MESC's data also just contains opening years for retail establishments (MESC+R 2020). We also contacted MESC to understand their basis of inclusion, to which they replied that if the mall is a member of MESC, it will be included in the directory. Once a mall's membership is cancelled, they remove them from the directory (conversation with MESC representative).

The Knight Frank Data meets two areas out of the four we specified: organisational coverage and level of details. The retail data also suffer form organisation coverage. Furthermore, we did not see any information pertaining to retail events. The data set only had two sets of events, a mall opening and it closing. However, in the absence of quality data we have proceeded with using the data from Knight Frank.

9.1.3 Other Data Sources

We researched extensively within our data sources to identify sources that may have information on hotels and retail of Makkah. GSTAT seemed a promising avenue for information, but we were unable to find any data at the organisation level. We did find sufficient information on an aggregate level. However, such data is irrelevant to quantify selection mechanisms. We also researched the Internet to find relevant websites to identify complete hotel information. As such various hotel booking websites returned information, but none of them offered any programs of data sharing for academic research purposes.

9.2 Technical Considerations

Before we elaborate on the research variables and measures, we outline a few technical considerations. These technical consideration form a bedrock

within organisational ecology. These considerations pertain to developing an observation window for our data set, understanding the nature of entry and exit events, spell splitting, and a couple issues pertaining to data management.

Observation Start Date. We have to identify a suitable start date for the inception of the population. After reviewing our data sources, we have noted that GSTAT has records of pilgrim numbers from 1965 up to and including 2019—a significant coverage window. In our opinion, this is a suitable start date for our population as it marks the start of resources. Furthermore, we position time as a continuous variable calculated as century months from the start of the observation window. This is a technical consideration to state that events can and occur randomly in our population. The calculation for century months is as follows:

$$T_{cm} = \frac{t_e - t_s}{365} \times 12 \tag{9.1}$$

Where t_e is time of event (founding or mortality) and t_s is the observation start time. Usage of century months makes it easier to conduct mathematical analysis using statistical software packages such as STATA (Blossfeld et al. 2007).

Organisation Destination. We also specify the modes of entry and exit for our organisations. Such specifications are required to develop a deeper understanding of founding and mortality rates, as certain methods of entry (or exit) may carry an elevated hazard of founding or mortality. For example, in the disk array market, the method of entry by the producers held significant implications. De Novo establishment organisations had better grade-of-memberships, a higher contrast, and higher legitimation (Hsu et al. 2011; McKendrick et al. 2003). Similarly, exit events hold significant importance as well. For the retail population, we believe the population evolution follows a single-origin and single-destination process. Structured retail is established without regard to its method and closed down if it does not perform well—that is a simple entry and exit phenomenon. However, the hotel population has nuances of its entry and exit structure. We stated earlier, brands communicate an organisation offer, knowing their entry and exit mechanisms can shed new light on appeal structures. The entry for hotels follows two events types: entry as a branded

hotel, and entry as an unbranded hotel. Similarly, the exit of hotels is of three types: (1) a hotel can close to move towards a branded orientation, (2) it can close to have an independent orientation, or (3) a complete closure. The table below summarises the origins and destinations for our populations.

Population	Origin	Destination
Retail	Entry without cause	Exit without cause
Hotel	Branded Entry	Complete closure
	Unbranded Entry	Closure for Brand Orientation
		Closure for Unbranded Orientation

Table 9.1: Origins and Destinations for our Populations

The key question that arises why would a branded hotel close to change the brand orientation? This happens frequently within our context as hotels continually position themselves with different brand labels that appeal to their targeted segment. Additionally, a cursory review of major hotel chain will reveal multiple brands under their management, with each having a specific appeal position. However, the research on specific appeal points of hotel brands is outside the scope of this study. Nonetheless, considerations of origin and destination are essential to test the classical understanding of density-dependence theory that predicts a U-shaped graph for mortality hazard as density increases (and an inverted U-shaped graph for founding hazard)[1].

Data Time-points. Most measures in organisational ecology are time-bound, providing insight over an appropriate time scale. Research practices in organisational ecology recommend distributing timescales into applicable timepoints for enhanced estimations of hazard rates (Carroll et al. 2000a)). We divide the dataset into the following spells: Prior-2016, 2016-2019, and 2020. 2016 marks when the population was experiencing normal social dynamics to compute baseline rates; in this phase, the time will be split into the same 5-year spells. Such data-spells facilitates the computation of piece-wise hazard rates as well, allowing us to ascertain which regression model is a better explainer

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[1]Duration-dependence also requires the specification of origin and destination.
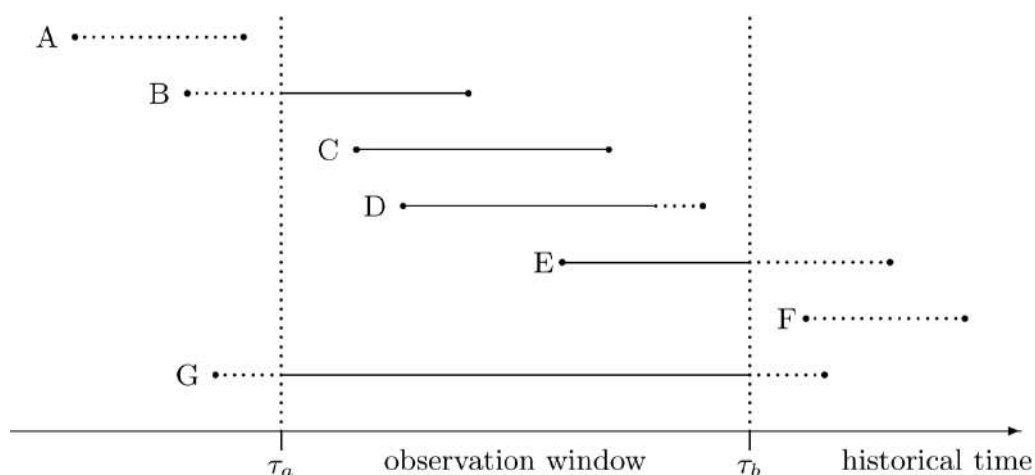
Figure 9.1: From Blossfeld et al. (2007, Figure 2.1.1 p.40)

of the underlying mechanisms. Between 2016-2020, the government is projected to implement policies that should facilitate the birth of new hotels and retail developments. Post-2020 is the implementation of the first phase of the vision. Such data spells facilitate cross-comparison to ascertain the statistical significance of the policy.

Data Structure. Following from our above point, we have structured the data as event-history. Probably, this is the most salient feature of organisational ecology's research method. Under such a method, the complete history of events pertaining to *a* organisation are collected. These events can range to various aspects of its social history. For example, when an organisation entered (or exited) a particular market (Blossfeld et al. 2007). STR's data provides changes in a hotel's brand for the same physical property enabling us to record the start and end dates of the events. Comparatively, the data from Knight Frank does not have any event information; hence we just assume it as single episode data.

Organisational Censoring. Organisational censoring is another technical aspect of organisational ecology. It seeks to establish if there are biases in our observation arising due to sample selection; figure 9.1 below provides an accurate description of censoring. Observation A is referred to as left censored as the

starting and ending of such events are excluded from the observation window. Exclusion of such events provide inaccurate results and analysis. Observation B is partially left censored as the the beginning information is omitted from our observation window. Observation C is complete as its start and end falls within the observation window. Such observations are preferred in organisation ecology enabling an accurate analysis. Observation D is if the observation contains missing information for inexplicable reasons. Usually, such observations can cause issues, but it can be treated as Observation E, which is referred to as a right-censored. However, such issues are resolved through mathematical models to provide an accurate understanding of social dynamics. Observation F is completely right-censored, and not does not become part of the data set. Thus, it puts limitations on the analytical insights. Lastly, Observation G is right and left censored meaning the information about the start and end of the observation is unknown (Blossfeld et al. 2007, p41-42). At this time, readers will start to appreciate the mathematical complexity involved in organisational ecology to develop robust regression models. Therefore, it is imperative to use data sets with minimal censoring for accurate analysis. The data we received from Knight Frank contains opening dates for all mall establishments—albeit it only contains the dates in years. At the end of the observation period, we still have malls existing. Hence the data is right-censored. Similarly, the data from STR has missing opening dates for some hotels, and some hotels are existing at the end of our observation windows. Accordingly, this data is left and right-censored. We deal with censoring by adding relevant dummy variables for required calculations.

9.3 Research Variables

Now we elaborate on the variables used in this research; Table 9.2 provides an accessible summary of the hypotheses developed in Chapter 8 with its associated theoretical fragment and dependent variable.

Ref	Hypothesis	Dep.Var.	TF
1	As the distance from the GM increases, the identity restrictions drop for our community population, and we witness multiple identities co-existing within the same distance, except 5-star, and 4-star branded hotels and structured retail who are restricted by distance increases.	Count	OF
2	As the distance from the Grand Mosque increases the founding rates: (1) for 5-star and 4-star hotels decrease; (2) for 3-star, 2-star, 1-star hotels increase; (3) and for the structured retail increase.	Founding Rates	OF & DD
3	Mortality rates for 5-star and 4-star populations increase as distance to the Grand Mosque decreases; conversely, mortality rates for 3-star, 2-star- and 1-star populations decrease with increases as distance to the Grand Mosque increases.	Mortality Rates	DD
4	Founding rates for branded hotels will increase at a higher rate than unbranded hotels within the Market-centre.	Founding Rates	OF & DD
5	Founding rates for unbranded hotels will increase with increases in distance from the Grand Mosque.	Founding Rates	OF & DD
6	Mortality hazards of branded hotels will be lower than unbranded hotels.	Mortality Rates	DD
7	Changes in retail vital rates are caused by changes in hotel vital rates, albeit by a certain delay.	Founding Rates	DD
8	Areas present with diverse organisations will see the highest founding rates.	Founding Rates	DD
9	The generalist will witness increasing mortality hazard with specialists witnessing increasing founding rates.	Founding & Mortality Rates	ON

OF: Organisation Forms; DD: Density-Dependence; ON: Organisational Niches

Table 9.2: Thesis Research Hypotheses with relevant variables and Theoretical Fragment (TF)

9.3.1 Dependent Variables

In understanding various selection mechanisms researchers have the flexibility to study the population via founding or mortality rates. For example, Bogaert et al. (2016) shows the diversity in applying founding or mortality rates to study changes in organisational populations. We do not stick to studying our population from one particular lens and utilise both rates to study and understanding our population. In the following sections, we elaborate on the underlying mathematical formulae used to model such considerations. We have endeavoured to write these sections with simplicity in mind to appeal to a broad reader base.

Founding Rates

The basic understanding to quantify founding rates is: the *number* of organisations entering the population over a time-period. Implying, the statistical technique to be used is a count-model. Therefore, organisational entry follows a Poisson process where cumulative organisational entries in a time-point are recorded. However, a key property for the Poisson process is the mean and variance of organisation foundings are equal, and in scenarios of overdispersion it is recommended to use the negative binomial method to determine organisational founding (Carroll et al. 2000a). The poison method to determine founding rates has been used in multiple research settings such as Italian banks (Lomi 1995), disk-array market (McKendrick et al. 2003), brewery industry (Carroll et al. 1993), and is generally an accepted method to determine founding rates (Carroll et al. 2000a, Chaps. 6-7). Accordingly, the general specification of the Poisson process is as follows:

$$Pr(A = a) = \frac{e^{-\lambda^{\tau}}(\lambda\tau)^{a}}{a!} \tag{9.2}$$

Where λ is the hazard of entry of organisation, and τ is the interval time. We have assumed that hazard of entry is constant calculated as follows:

$$\lambda = \lim_{\epsilon \downarrow 0} \frac{(Pr(X(t+\epsilon) - X(t) = 1 | X(t) = n)}{\epsilon} \tag{9.3}$$

However, if $\tau = 1$ then the Poisson Process is as follows:

$$Pr(A = a) = \frac{e^{-\lambda}(\lambda)^a}{a!} \tag{9.4}$$

We have set $\tau = 1$ for our research purposes. Now we add a specification of covariates for our λ parameter given by $\lambda = \exp(\varphi(z_q))$ into 9.4 to yield the Poisson process as follows:

$$Pr(A_q = a_q) = \frac{\exp(-\exp(\varphi(z_q)))\exp(\varphi(z_q))^{a_q}}{a_q!} \tag{9.5}$$

This defines our understanding of founding rates for our populations.

Mortality Rates

Our second dependent variable is the mortality rate to confirm hypotheses 3, 6, and 9. The key consideration in understanding mortality hazards is the *cause* of mortality—that is what is the root-cause of mortality? Based on the literature review conducted, the key cause for mortality in organisational ecology is the presence of competition, and competition is created through the density of organisations. Another consideration is the relationship of density with other factors, and such relationships are either monotonic (linear) or non-monotonic (non-linear) However, research has shown that non-monotonic relationships with density yield better results. Accordingly, we followed mortality rates, having a non-monotonic log-quadratic relationship with density (Carroll et al. 2000a, Chaps. 6-7).

$$\mu(t) = m_t \exp(\theta_1 N_t + \theta_2 N_t^2) \tag{9.6}$$

"[W]here m_t summarizes the effects of conditions other than density... ." (Carroll et al. 2000a, p. 217). These can be boarder industry level events that impact the vital rate trajectories, and N is the density of the population at time t.

Independent Variables   In the following section we explicate the relevant independent variables for our research context.

Population & Organisation Labels.   This variable is the organisation's claim to a label by conforming to the relevant schematisation. Developers are free to lay claim to any population and sub-population without restriction; and such claims are clearly documented in our data sources. For example, Knight Frank's data mentions the label claimed by a mall. Similarly, STR's data also uses sub-categories such as Luxury Class, Upper Upscale and others to categorise hotels which can be used to convert into star categories. As we stated earlier, it is difficult for hotels to change their labels due to physical construction limits. Nonetheless, a hotel may close to undergo a significant refurbishment and opening with a new label, using the same physical location and building. In our data sources, this is treated as separate events. In Chapter 10 we specify the mechanisms used to code such labels.

Distance from Grand Mosque.   Distance is the most important independent variable in our research, it underpins most of our dependent variables, and we envision it will be instrumental in determining causality and statistical significance. We calculate distance as a straight line from the GPS location of the hotel/retail and the distance to the outer perimeter of the Grand Mosque. We also compute the average distance of foundings to assess the impact of the interrelationship between the two variables.

Resource at Founding.   It is the annual inflow of Hajj and Umrah pilgrims into the country quantified as numbers of pilgrims. This variable establishes resource availability in our community enabling us to develop a comprehensive understanding of competition. Predominately, this figure will feature in the density-dependency analyses. Pilgrims can be residents of Saudi Arabia (defined as Internal) or visiting Saudi Arabia to perform their rites (external). Chapter 10 provides details on its calculation. We have refrained from developing a financial quantification of resource availability, as we believe, such financial quantification is somewhat inapplicable to the research context. The main driver that influences such financial measures *are* the pilgrims; hence, we focus on them.

Organisational Size. We measure this for hotels as the number of rooms, and for retail we calculate based on leasable area. Such information is available from the data sources.

Category Size at Founding. Category level size of respective organisations measured in the total organisation size at the relevant time points. For hotel it translates into the total number of rooms, and the total leasable area for retail.

Density at Founding. The total number of organisations existing at the time of founding of respective organisations.

Brand and Unbranded. We position the brand as an independent variable as hotel owners are free to change their branding requirements as and when they see fit—a random occurrence. Brands are classified as "branded" and "unbranded". Accordingly, we also calculate the branded and unbranded densities at founding.

Diversity. We also measure the diversity in our community populations throughout the observation time. We utilise a well-known measure of diversity, Simpson's Diversity Index (1949). This measure has been used in ecological research to as part of theorising efforts (Hannan et al. 2007, p. 198)) and in understanding the role diversity plays in organisation ecology (Koçak et al. 2008). We calculate this at the organisational category level (hotel and retail).

9.3.2 Control Variables

Now we elaborate on the control variables for this research.

GPS Coordinates. GPS coordinates capture the physical location of the organisation. Such information is widely available in our databases and can be verified using a Geographical Information System (GIS) such as Google Maps. Locations of each organisation are assigned to a grid zone that we developed (covered in Chapter 10).

Vision2030. We assign a control variable to all organisations established after 2016 allowing us to as determine the influence, if any, regulation plays in determining vital rates.

9.4   Regression Modelling

It is important we also elaborate on our approach to regression modelling. Organisational ecology relies on executing multiple regression models to test a single or set of hypotheses, and our thesis is no exception as shown in Chapter 11. However, why is there a need to conduct such analysis? Social models such as organisational ecology are dynamics models—that is they accommodate an extensive amount of external variables to determine underlying causality for vital rates. Therefore, one combination of variables is insufficient to understand the selection pressures. At times one set of variables yields a better model fit in comparison to adding *all* variables in the model. This allows researchers to develop a refined and superior model to create a strong explanatory model of the observed selection pressures. Furthermore, such a technique allows us to embedded continually changing historical patterns into a model to better predict a probable future outcome, when compared to data obtained from *a* single time-point (Tuma et al. 1984).

9.5   Research Procedures

We now elaborate on our detailed research procedures.

Step 1: Resource Climate. The first step is understanding the resource availability for our community population. As explained in the variables section, resources are quantified as number of individuals inclusive of internal and external to the Kingdom. In this regard, we will review the annual statistical publications that contained on the GSTAT's website. We believe GSTAT's coverage for Pilgrims maybe partial for certain years. Accordingly, we will endeavour to develop a normalised understanding of the resource base; such assumptions will specfied.

Step 2: **Locations**.   The second step involves plotting our organisations on a map of Makkah to compute locational differences. A key challenge is using the correct Makkah map, as both the Grand Mosque and the city have grown over the years. The latest maps of the Grand Mosque probably covers locations of old hotels which is a complicated issue to rectify. Firstly, we do not have access to historical maps of Makkah's Grand Mosque that would enables us to model the outer perimeter of the Grand Mosque as a time-varying covariate, impacting the distances of hotels as time progresses, giving a granular understanding. Secondly, the accuracy of historical organisation members cannot be verified. We have seen in STR's database that locations of closed hotels are *in* the Grand Mosque. Such locations could mean that locations are correct before the expansion of the Grand Mosque, or they could just be data inaccuracies. Due to such data uncertainties, we will have to proceed with the data as-is. We will map locations of our hotel/retail developments using Google Earth (https://www.google.com/earth/), a free Geographical Information System (GIS). The software allows the adding of coordinates of hotel/retail enabling us to compute distances between our community members.

Step 3: **Zone Development**.   Once we have mapped the locations of hotel/retail, we will then develop an overlaying square grid for Makkah City assigning zones to a box in the grid. We considered two options to develop zones in the city. Firstly, we thought of circular radial zones that extend outwards from the GM to the remaining part of the city. However, a drawback of this approach is, if organisations are located on opposing ends of the radial zone, the values for symbiotic distance are large and become meaningless to provide useful information. An alternative approach uses Baum et al. (1992) and overlaying a square grid in the city. We believe this approach will result in meaningful results as we can compute the symbiotic distance for each *square* in the grid, and, also compare between squares to develop a detailed understanding of the nature of social forces in the community population. Each square will represent an area of one square kilometre. To code each zone, we use English alphabet along the horizontal axis and Arabic numbers on the vertical axis.

Step 4: Data Gathering. The fourth step focuses on data gathering from our data sources. As elaborated throughout this document, STR remains the primary source for information for the hotel population. The company operates an academic partnership scheme allowing prospective researchers to utilise their datasets. For our research, we approached STR to formalise this relationship. On the retail datasets, we will contact Knight Frank and understand organisational members in the structured retail space. Since this industry lacks an authoritative trade association, it may be challenging to identify all members in this sub-population. Information reviewed on MESC's website positions itself as an authority in this regard. However, they stop coverage of a structured retail space, if they cancel their membership with MESC—coverage is based on membership fees (personal conversation).

Step 5: Data File. Next, we develop a data file suited for statistical analysis for organisational ecology. This step involves structuring the file as an event-history analysis that denotes origin and destination states, which we have covered earlier. Statistical analysis on the file will be performed using Stata v16.1. Furthermore, we utilise two Stata packages for reporting our results asdoc (Shah 2018), and estout (Ben 2004).

9.6 Ethnographic Methods

We have to consider an additional, unconventional, item for our research methods—ethnographic research. Ethnographic research methods require the researcher to be immersed in a particular context for an extended period of time. Through this immersion in a context, the researcher is able to understand the intricacies of their research environment. Usually, such researchers aim to document their experiences and knowledge via the use of written or transcribed notes, either using covert of overt methods. The researcher constantly reflects and aims to internalise the observation for sense making of the observed phenomenon. Accordingly, ethnographic research is a qualitative research tool (Bryman 2012). Our choice of word earlier–unconventional–stems from the tenets of organisational ecology which is based in empiricism.

9.6.1 Ethnographic Implications

We now elaborate upon certain ethnographic issues relevant for our research context.

Researcher Immersion & Involvement. Our first issue elaborates on the Researcher's level of immersion, consisting of two levels: (1) religious immersion, and (2) real estate immersion. The Researcher was born into the the Muslim faith. Consequently, the Researcher has been associated with Makkah, in the spiritual sense. Furthermore, the Researcher has been living in Saudi Arabia since he was three-month old child, and over the years enabling him to visit Makkah on a frequent basis. This increased visitation frequency allowed the Researcher to witness Makkah's transforming urban environment. Secondly, since 2011, the Researcher has been associated with the real estate industry. Initially, the Researcher was involved with the real estate industry by understanding the inner workings of a real estate development organisation. As the Researcher progressed in his career, they started to take on responsibilities relating to financial analyses, market research, and strategic evaluation of real estate locations. This enabled the Researcher to experience, first-hand, the selection pressures within a real estate context. In ethnographic terms, we consider ourselves as passive observers (Bryman 2012, pp. 441–444).

Documentation of Notes. Another issue within ethnographic research is documenting the observed issue, or in the research context, selection pressures faced by organisations. The long immersion and unbeknownst to the Researcher their future academic interest precluded the capturing and documenting of notes on the real estate industry. However, given the professional experience[2], the Researcher was able to internalise the selection pressures as part of their professional experience. A valid critique is whether our account is authoritative? This is a complex question to answer, given the inherent bias due to our professional experience. We don't consider ourselves an authority on

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[2]At the time of writing, the researcher has around 12+ years experience in the Saudi Arabian real estate industry. At times, the researcher posts about the Saudi Real Estate market on their Linkedin account (https://www.linkedin.com/in/imalick/).

the real estate market, but given the long industry embeddedness we believe we have obtained pertinent information to understand the inner workings allowing us to develop the social intuitions as documented within this thesis. Furthermore, we routinely engaged with the larger real estate community on various forums to validate our understanding. Additionally, we were in the employment of a real estate development organisation with significant real estate interests in Makkah and a real estate consulting organisation allowing us to validate our knowledge.

9.6.2 Our Utilisation of Ethnography

In the context of organisational ecology, ethnographic research methods are an anomaly and rarely used, given its strong empiricist view of the social world. However, we have opted to implement it in our research method given the data limitations, and use it a source to validate (or invalidate) results from our regression analyses to generate explanations and elaboration for causal effects.

9.7 Chapter Conclusion

This chapter brings us closer to the reality of our research, and we have endeavoured in providing a holistic view of our research. We understand practitioners will find certain aspects of this chapter challenging, but not required to interpret the results. We have strived to keep contents of this thesis simple to enhance understandability to a broad audience. However, organisational ecology is technical field, hence some technicality is unavoidable. Furthermore, given the data limitations we supplement our regression analyses with anecdotal evidence to validate (or invalidate) the correlations.

Chapter 10

Hypotheses at Work

We move our argument a step closer to operationalisation and elaborate on preliminary work required to generate results. Until now, we reviewed the extensive literature of organisation ecology in light of our research context and the associated hypotheses, and the proposed methods to execute our research.

The collective work completed in this chapter is the foundation upon which our statistical analyses will be performed. First, we elaborate on the steps we took to code our data. Second, we show the assumptions we took to develop our resource climate as GSTAT's statistical publications contained missing information. Third, we elaborate procedures undertaken to develop a spatial map for our organisational members to delineate (and confirm) market locations.

10.1   Data Coding

In this section, we outline the steps taken to code each aspect of the population, enabling us to conduct meaningful statistical analyses.

10.1.1   Community Level Coding

We employ coding at two levels: (1) coding for the individual populations; and (2) coding for population-specific organisational forms. The codes are structured as ordinal form, as higher codes either denote a highly ranked hotel or a mall with a large lettable area; the codes are shown below.

Population	Population Code	Organisation Form	Organisation Form Code
Hotel	1	1-star	1
		2-star	2
		3-star	3
		4-star	4
		5-star	5
Retail	2	Convenience Malls	1
		Neighbourhood Malls	2
		Community Malls	3
		Regional Malls	4
		Super Regional Mall	5

Table 10.1: Coding of Population and organisation forms

10.1.2 Hotel Brand Coding

Recall Hypothesis 4 relies on founding rates between branded and un-branded hotels. We classified branded hotels as 1 with unbranded as 0; Appendix E contains the chains considered as branded and unbranded.

10.2 Resource Climate

We start our elaboration by first developing a comprehensive understanding of the resource climate. Pilgrims are defined into two categories—Hajj and Umrah. Hajj Pilgrims are time-bound and can only visit Makkah for a set number of days, during the year, after that, they are ineligible for a visit. Umrah pilgrims are free to visit Makkah throughout the year *except* during the Hajj Period. Implying, both groups are mutually exclusive.

Information on pilgrims is sub-classified by pilgrim origination—internal or external. If the pilgrim is arriving from outside of Saudi Arabia, GSTAT applies an "External" label for both categories. Similarly, if the pilgrim resides within Saudi Arabia, GSTAT applies an "Internal" label. Such classification creates four resource groups as follows: Hajj (External), Hajj (Internal), Umrah (External), and Umrah (Internal).

We analysed the extensive statistics located within GSTAT's website, specif-

ically, the historical yearbook archives containing the published statistics across a wide range of socio-economic issues. Each yearbook contains diverse statistical information on weather, economics, social, security, and economic information (GSTAT 2015). In addition to the yearbooks, we reviewed a GSTAT's microsite on Hajj statistics that contains information on internal and external Hajj Pilgrims (GSTAT 2016a), and historic Umrah Survey's (GSTAT 2017). GSTAT's information on Hajj (External) is extensive and provides information from 1965 until 2019—coverage of around 55 years.

We observed that at times data for Hajj (External) changed between annual publications with the number of the preceding years being revised. In this case, we took numbers of the last publication as final and updated our data for Hajj (External), and in most cases, the differences were around a few thousands.

From 1971 – 1974 information was recorded on Hajj (Internal), after that it was again recorded onwards from 2002, a coverage of 23 years. GSTAT started coverage on Umrah (Internal) starting from 2016 onward and does not contain information on it for preceding years. Ministry of Hajj and Umrah (2020b) contained information on Umrah (External) from 2015 – 2019. Accordingly, the visual representation of the resource shown in Figure 10.1:

This visual is problematic as we are unable to establish the level of resources in the community. In the introduction, we outlined the premise of rising resources; however, without detailed data, our research will remain incomplete. Hence, we take steps to develop a *normalised* dataset for Hajj (Internal), Umrah (Internal), and Umrah (External).

Firstly, Hajj (Internal) was covered for 20 years, with information on the country's population during those years also available. Hence, if we calculate the percentage of the population that performed Hajj, we develop an average metric that can be applied to the remaining years to complete the picture for Hajj (Internal). Based upon the 20 data points, we identified that 3.84% of the resident population of Saudi Arabia perform Hajj. Accordingly, we took this value and filled in the remaining years to compute Hajj(Internal).

Secondly, for Umrah (Internal) GSTAT's data coverage was limited to three years only, and during those three years, the percentage of population that performed Umrah was around 37.11%. However, if we apply the same percentage
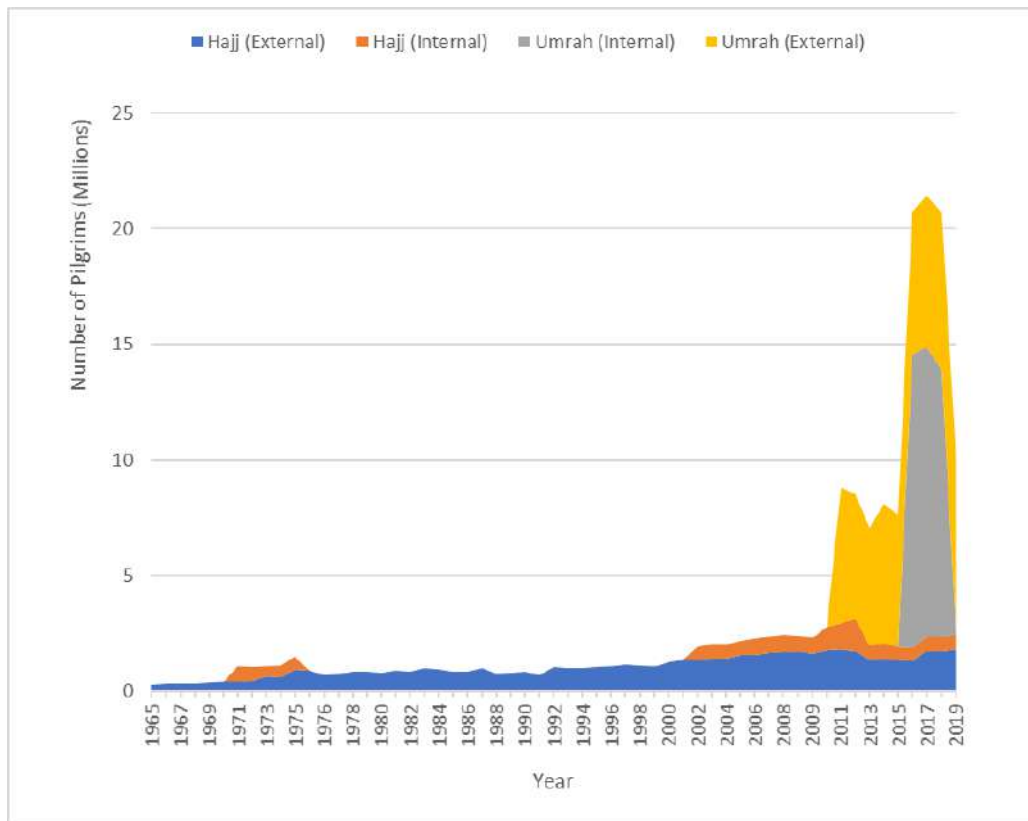
Figure 10.1: Pilgrim Numbers based on GSTAT's existing data

to the population of 1965 (around 4.8 million), it results in 1.7 million perform-
ing Umrah from within the population, which appears as an unrealistic figure
during those times. Here we choose an arbitrary judgement. We assume that
in 1965 5% of the population performed Umrah, and over the years this number
grew to 37.11% in 2018, creating an annual growth rate of 2.829%. This growth
rate appears as a reasonable assessment for the internal population to perform
Umrah. However, for the years for which we had data, we used those figures as
is. The arbitrary use of the population adjustment does pose some methodolog-
ical implications as it can create an artificial sense of statistical significance for
our resource, whereas, in reality such may not be the case. It may have inflated
(or depressed) actual pilgrims numbers in certain time-periods, which can lead
to incorrect interpretation of results based on the regression models. Accord-
ingly, we circumvent this issue by relying on anecdotal evidence based on the

Author's extensive experience over the years of visiting Makkah to validate the results generated by the regression models.

Lastly, for Umrah (External) we were able to find data for the last five years from the Ministry of Hajj and Umrah's website (2020), from the period of 2015 – 2019—five data points. Furthermore, the 2018 GSTAT annual publication contained information on Umrah visas issued and pilgrims that arrived in the Kingdom, allowing us to add 4 data points to our Umrah (External) picture, creating a resource picture from 2011 – 2019. To create a full picture for Umrah (External), we need to understand the number of visits made to Saudi Arabia, as we assume that primarily visits to the country are religious. Surprisingly, GSTAT's annual publication maintains a detailed record of foreigners arriving and leaving the Kingdom. Using these figures for 2011 – 2019 we get an average of 23% of visits for Umrah (External). We are not sure if the GSTAT's information on foreigners entering the Kingdom, includes Umrah's visitors or not. We reviewed the Manual for Statistical Classification, to ascertain any clarification; however, we did not find any (GSTAT 2018). Therefore, we assume that the number includes all kinds of trips to the Kingdom. We applied 23% on all previous years to calculate Umrah (External)—we did not grow this rate as we believe it is a good representation.

Finally, we added all four types of pilgrim movements to develop a consolidated picture of the resource bases, as shown in Figure 10.2. This visualisation is a slightly better representation of the pilgrim movements to the country. It goes with the prevailing social narrative. Over the years the Kingdom has invested heavily to expand the Grand Mosque and upgrade the facilities of Makkah to attract pilgrims.

Consequently, it created exponential growth in the movement of Umrah pilgrims. Readers would note that the Hajj pilgrim has been stable over the years. The reason being a critical component of the Hajj Pilgrimage is staying in the Valley of Mina using temporary accommodation. This religious requirement precludes the construction of vertical real-estate complexes to house additional individuals for pilgrims. Hence, Hajj is limited by the physical space of Mina, which is approximately 3 million individuals.
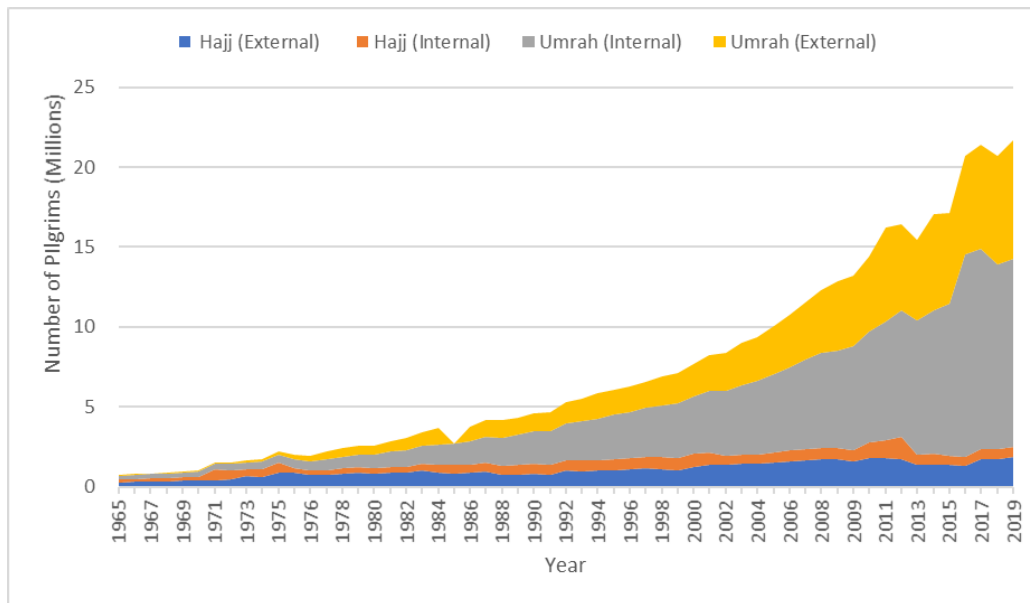
Figure 10.2: Normalised Pilgrim Numbers

10.3 Spatial Mapping

Steps 4 and 5 of the research procedures outline the need to map the locations of our organisations to Makkah's map. The first consideration in developing the grid is the extent of the city coverage. Based on our experience, a reasonable estimate to develop the grid is to encompass all areas *within* the 4th Ring Road—as shown in Figure 10.3 below. The next step is developing a grid to overlap on the city, where each grid is approximately 1 square kilometre[1], as shown in Figure 10.4. Approximately, the grid covers an area of 400 square kilometres, a sizeable area to track the establishment of hotels and retail organisations throughout the city.

Next, we proceeded to map the coordinates of hotel and retail populations as shown in Figure 10.5, and are thankful to STR (2020) and Knight Frank Middle East (2020) for providing the data on hotels and retail malls respectively. In some instances, we noticed that our population members were on the borders

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[1]We developed a standard grid in PowerPoint ensuring that each square represents the intended area. Then we overlayed this image into Google Earth to develop our zone system. The squre of each grid represented an area of 1.05 km^2, which we think is acceptable level of accuracy given the use of generalist software

Figure 10.3: Map of Makkah with 4th Ring-Road (dashed black-line)

of our grid system. For example, Ahlia Mall was on the border of G8 and H8, and Diyafa Mall was on the border of H13 and I13. In such cases, we assessed the major area occupied by the organisation and assigned the respective zone. We ignored any organisations outside of the 4th ring road, as we believe, they do not contribute to the community ecology of Makkah due to their distance from the Grand Mosque.

In our grid system, the Grand Mosque is occupied in zone K11, and recall distance holds significant importance in our research. We define distance as a straight line from the Grand Mosque to the individual organisation. Since organisations located in the same zone will have somewhat similar distances concerning the Grand Mosque, we proceed with calculating distances of each zone, by developing a zonal mid-point, as shown in Figure 10.6. We placed coordinates at each zonal intersection for all 480 zones to identify their GPS coordinate. Subsequently, we calculated the distance between each zone's mid-point and the mid-point of zone K11, which represents the zone with the Grand Mosque.

We used an online distance calculator developed by Morse (2011) to compute
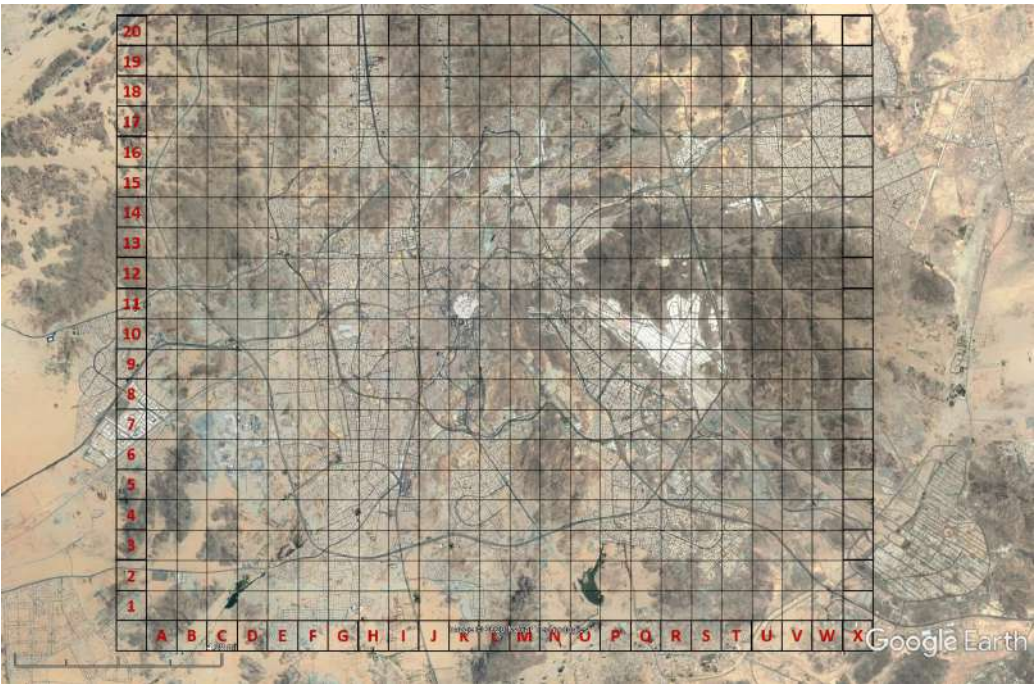
Figure 10.4: Map of Makkah with a Grid Overlay

Figure 10.5: Map of a sample of Hotels and Retail with Grid Overlay
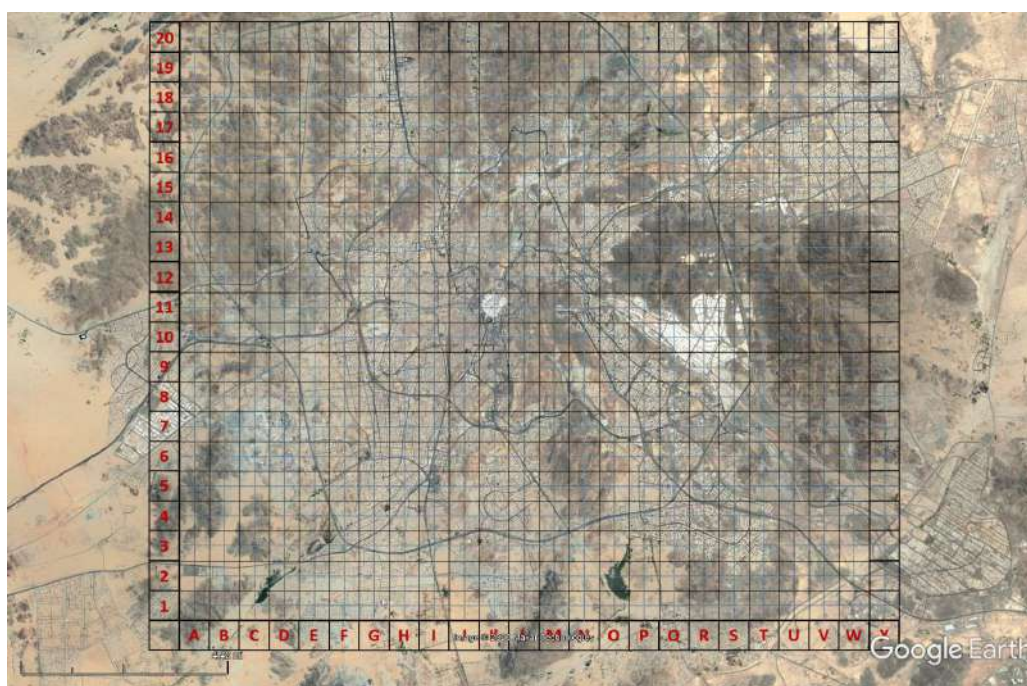
Figure 10.6: Makkah Map with Zonal Mid-points

the distance between the Grand Mosque and organisation's GPS Location; the results are shown in Table 10.2 below. Zone K11 shows zero as it houses the Grand Mosque; hence, distances of organisations located in that zone are also considered as zero.

This analyses allows us to confirm suitable market locations, as assumed in Chapter 6. In table below, we have highlighted the area in green representing our definition of the market-centre. Pilgrims prefer this close proximity allowing them to easily commute between the hotel and Grand Mosque without sacrificing on the daily prayers and religious commitments. Essentially, it represents the best of both worlds, religiosity and comfort. The next area as per our definition is the near-centre, highlighted in yellow–areas $\geqslant 1.5km- \leqslant 2.5km$. In terms of movement, Pilgrims tend to spend half of their day (either morning or night) in the Grand Mosque to perform their duties and commute back to their hotels to replenish. In comparison to the market-centre it restricts the movements of the Pilgrims to some extent. Lastly, we have the periphery highlighted in blue–areas $\geqslant 2.5km$. Pilgrim movements are significantly restricted, as they

don't have the luxury to periodically commute between the hotel and Grand Mosque. Accordingly, Pilgrims come during the day and spend the entire time praying, eating, and sleeping within the Grand Mosque or its outside piazzas.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X
20	13.8	13.1	12.4	11.7	11.1	10.5	10.1	9.7	9.4	9.3	9.2	9.3	9.4	9.7	10.1	10.5	11.1	11.7	12.4	13.1	13.8	14.6	15.4	16.3
19	13.2	12.4	11.6	10.9	10.3	9.7	9.2	8.8	8.4	8.2	8.2	8.2	8.4	8.8	9.2	9.7	10.3	10.9	11.6	12.4	13.2	14.0	14.8	15.7
18	12.6	11.7	10.9	10.2	9.5	8.8	8.3	7.8	7.5	7.2	7.2	7.3	7.5	7.8	8.3	8.8	9.5	10.2	10.9	11.7	12.6	13.4	14.3	15.2
17	12.0	11.1	10.3	9.5	8.7	8.0	7.4	6.9	6.5	6.2	6.2	6.2	6.5	6.9	7.4	8.0	8.7	9.5	10.3	11.1	12.0	12.9	13.8	14.8
16	11.5	10.6	9.7	8.8	8.0	7.3	6.6	6.0	5.5	5.2	5.1	5.2	5.5	6.0	6.6	7.3	8.0	8.8	9.7	10.6	11.5	12.4	13.4	14.4
15	11.1	10.1	9.2	8.3	7.4	6.6	5.8	5.1	4.6	4.2	4.1	4.2	4.6	5.1	5.8	6.6	7.4	8.3	9.2	10.1	11.1	12.1	13.0	14.0
14	10.8	9.8	8.8	7.9	6.9	6.0	5.1	4.4	3.7	3.2	3.1	3.2	3.7	4.4	5.1	6.0	6.9	7.8	8.8	9.8	10.8	11.7	12.8	13.8
13	10.5	9.5	8.5	7.5	6.5	5.5	4.6	3.7	2.9	2.3	2.1	2.3	2.9	3.7	4.6	5.5	6.5	7.5	8.5	9.5	10.5	11.5	12.6	13.6
12	10.4	9.3	8.3	7.3	6.3	5.3	4.3	3.3	2.3	1.4	1.0	1.4	2.3	3.3	4.2	5.2	6.3	7.3	8.3	9.3	10.4	11.4	12.4	13.5
11	10.3	9.3	8.3	7.2	6.2	5.2	4.1	3.1	2.1	1.0	0.0	1.0	2.1	3.1	4.1	5.2	6.2	7.2	8.3	9.3	10.3	11.3	12.4	13.4
10	10.4	9.3	8.3	7.3	6.3	5.3	4.3	3.3	2.3	1.5	1.0	1.5	2.3	3.3	4.3	5.3	6.3	7.3	8.3	9.3	10.4	11.4	12.4	13.5
9	10.5	9.5	8.5	7.5	6.5	5.6	4.6	3.7	2.9	2.3	2.1	2.3	2.9	3.7	4.6	5.5	6.5	7.5	8.5	9.5	10.5	11.5	12.6	13.6
8	10.8	9.8	8.8	7.8	6.9	6.0	5.2	4.4	3.7	3.2	3.1	3.2	3.7	4.4	5.1	6.0	6.9	7.8	8.8	9.8	10.8	11.8	12.7	13.8
7	11.1	10.2	9.2	8.3	7.4	6.6	5.8	5.1	4.6	4.2	4.1	4.2	4.6	5.1	5.8	6.6	7.4	8.3	9.2	10.1	11.1	12.1	13.0	14.0
6	11.5	10.6	9.7	8.8	8.0	7.3	6.6	6.0	5.5	5.2	5.1	5.2	5.5	6.0	6.6	7.3	8.0	8.8	9.7	10.6	11.5	12.4	13.4	14.4
5	12.0	11.1	10.3	9.5	8.7	8.0	7.4	6.9	6.5	6.2	6.1	6.2	6.5	6.9	7.4	8.0	8.7	9.5	10.3	11.1	12.0	12.9	13.8	14.8
4	12.5	11.7	10.9	10.2	9.4	8.8	8.2	7.8	7.4	7.2	7.1	7.2	7.4	7.8	8.2	8.8	9.4	10.2	10.9	11.7	12.5	13.4	14.3	15.2
3	13.1	12.4	11.6	10.9	10.2	9.7	9.1	8.7	8.4	8.2	8.2	8.2	8.4	8.7	9.1	9.6	10.2	10.9	11.6	12.4	13.1	13.4	14.8	15.7
2	13.8	13.1	12.4	11.7	11.1	10.6	10.1	9.7	9.4	9.3	9.2	9.3	9.4	9.7	10.1	10.6	11.1	11.7	12.4	13.1	13.8	14.6	15.4	16.3
1	13.8	13.2	12.5	12.0	11.5	11.0	10.7	10.4	10.3	10.2	10.3	10.4	10.7	11.0	11.5	12.0	12.5	13.1	13.8	14.5	15.3	16.1	16.9	14.5

Table 10.2: Distance of each Zone from the Grand Mosque (Values in Kilometers)

Some readers may object to the tight market locations, but this is based on our *countless* visits and first hand experience of staying in Makkah to perform our religious rites. Pilgrims try to maximise their time *in* the Grand Mosque as opposed to staying in hotels.

We understand portions of this Chapter rely on anecdotal evidence, which sits at odds with organisational ecology's empirical orientation. However, we have proceeded to use such anecdotal evidence as analysis of Makkah has not been covered within the organisational ecology literature. Specifically, the use of a religious activity and its relationship with selection pressures is not extensively covered (Koçak et al. 2008, is an example).

10.4   Chapter Conclusion

This chapter provides the base to conduct our statistical analyses. We have coded data suited to regression analyses, and reporting along dimensions of organisation type and population. Additionally, we made an attempt at normalising our picture for Pilgrims, a vital variable in our research. Lastly, we conducted an in-depth spatial analysis of Makkah and confirmed our earlier assumption of market locations as relatively correct.

Part IV

The Evidence

Chapter 11

Results

Finally, our argument moves towards it climax: the results. We understand took a long journey to reach the results by having a length literature review and somewhat disconnected hypotheses section. However, we *had* to take this route for our results to present a holistic picture. For example, if density is increasing it implies that legitmation of the organisation form is taking place, which means the schematisation has been accepted.

We validate our hypotheses using established statistical techniques from the organisational ecology literature. In Chapter 12 we will discuss at length the implications of our research. We take an inclusive approach in presenting our results by presenting visual results for our practitioners. This is followed by detailed statistical results aimed at the academic community.

11.1 Observations Overview

As mentioned earlier, the data from Knight Frank and STR tracked 29 (retail) and 84 (hotel) organisations, respectively. The retail data was structured as an event-history file with a single origin-single destination model for the retail population. The data contained only one mortality event which is shown in section 11.3, with the remaining episodes as right-censored. The hotel data contained information on a property's change in branding structure which we treated as an episode with multiple events. Thus, the hotel data is multiple-

origin and multiple-destination. The complete break-up of the observations, in regard to opening and closing dates is shown in the table below.

Type	Observations
Observations with Founding Dates (and no Mortality Dates)	76
Observations with Mortality Dates (and no Founding Dates)	16
Observations with Founding and Mortality Dates	23
Observations with no dates	20
Total Observations (N)	**135**

Table 11.1: Observations break-down

We begin this chapter by outlining the descriptive statistics for our populations and an overview of the vital events in our population. This is followed by an overview of vital events in our population. Section 11.4 provides results on the impact distance has on schematisation of our organisation forms. Section 11.5 analyses the change in founding rates from different perspectives. Section 11.6 understands the mechanisms for resource partitioning in a community ecology context. Finally, in Section 11.7 we analyse the mortality analysis of our population.

11.2 Descriptive Statistics

Recall our independent variables are: *Distance from Grand Mosque, Resources at Founding, Organisation Size, Hotel Category Size, Retail Category Size, Hotel Density at Founding, Retail Density at Founding, Branded Hotel Density at Founding*, and *Unbranded Hotel Density at Founding*. The descriptive statistics for these variables are shown in two panels in the table below: the top panel shows the statistics by adding a dummy founding date[1]; the bottom panel shows the descriptive statistics for the community population with *actual* founding dates.

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[1]We used the date for 01-Jan-1980, since the first recording of the hotel was around 1983

Variable	Obs	Mean	Std.Dev.	Min	Max
Distance from Grand Mosque	134	2.485	2.676	0	13.031
Resources at Founding (no. of pilgrims in millions)	135	11.451	7.008	2.562	21.686
Hotel Category Size (No. of rooms)	135	24,021.13	8661.771	15363	41,302
Retail Category Size (No. of Leasable Area)	135	158,000	141,000	0	386,000
Hotel Density at Founding	135	15.126	24.068	0	65
Retail Density at Founding	135	10.037	8.846	0	27
Branded Density at Founding	135	3.719	6.194	0	23
Independent Density at founding	135	11.43	18.083	0	43
Distance from Grand Mosque	98	2.545	2.802	0	13.031
Resources at Founding (No. of pilgrims in millions)	99	14.683	5.25	3.432	21.686
Hotel Category Size (No. of rooms)	99	27,169.53	8,064.48	15,774	4,1302
Retail Category Size (No. of Leasable Area)	99	215,000	122,000	0	386,000
Hotel Density at Founding	99	12.485	23.024	0	65
Retail Density at Founding	99	13.687	7.518	0	27
Branded Density at Founding	99	3.192	6.174	0	23
Independent Density at Founding	99	9.323	17.081	0	43

Table 11.2: Descriptive Statistics of dataset with dummy founding dates (*top-panel*) and actual founding dates (*bottom-panel*)

Between the two basic statistics groups we can see only slight differences leading us to believe that continuing the analysis with *without Dummy Founding Date* should not have a significant impact on our results. We refrained from conducting classical hypothesis tests as at this point, they would not add sufficient value to our analysis. Next, we analyse the pair-wise correlations between our independent variables for the dataset without dummy founding dates—that is the actual dataset; results are shown in Table 11.3.

The results provide preliminary confirmation to developed social intuitions. We stated a strong link exists between organisation forms and *Distance from Grand Mosque*, proved by a strong statistical significance. Interestingly, *Organisation Size* is also linked with *Distance from Grand Mosque*, something we alluded to the introduction with hotels in proximity to the Grand Mosque being large and providing a range of services. It is not surprising to see a strong link between *Resources at Founding* and *Category Sizes* of our community population. As we sketched earlier, that resources have continued to grow, having a positive impact on the community population.

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Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Distance from Grand Mosque	1.000							
Resources at Founding (no. of pilgrims in millions)	0.129	1.000						
Hotel Category Size (No. of rooms)	0.163*	0.956***	1.000					
Retail Category Size (No. of Leasable Area)	0.162*	0.971***	0.975***	1.000				
Hotel Density at Founding	-0.096	-0.336***	-0.364***	-0.327***	1.000			
Retail Density at Founding	0.181**	0.973***	0.981***	0.989***	-0.317***	1.000		
Branded Density at Founding	-0.074	-0.289***	-0.316***	-0.280***	0.978***	-0.268***	1.000	
Independent Density at Founding	-0.103	-0.349***	-0.377***	-0.341***	0.997***	-0.331***	0.960***	1.000

*** $p<0.01$, ** $p<0.05$, * $p<0.1$

Table 11.3: Pair-wise correlations of independent variables

11.3   Community Population Events Overview

We first develop an understanding of vital events for our community population. We plotted counts of organisational founding for hotels and retails; the results are shown in Figure 11.1. As stated earlier, the observation period starts from 1965 aligned to GSTAT's recording of pilgrims arriving in the Kingdom. Possibly, hotels did exist at that time; but, our data sources do not contain such information. The first hotel opening was reported in 1983 with the second opening in 1993. Post-2000s the hotel population has been experiencing a steady increase in hotel founding events, except 2011 which did not record any hotel founding. Similarly, the retail population is on a similar trajectory of increasing founding rates. It experienced a period of stagnation from 2006 – 2010 possibly due to the ensuing financial crises at that point.
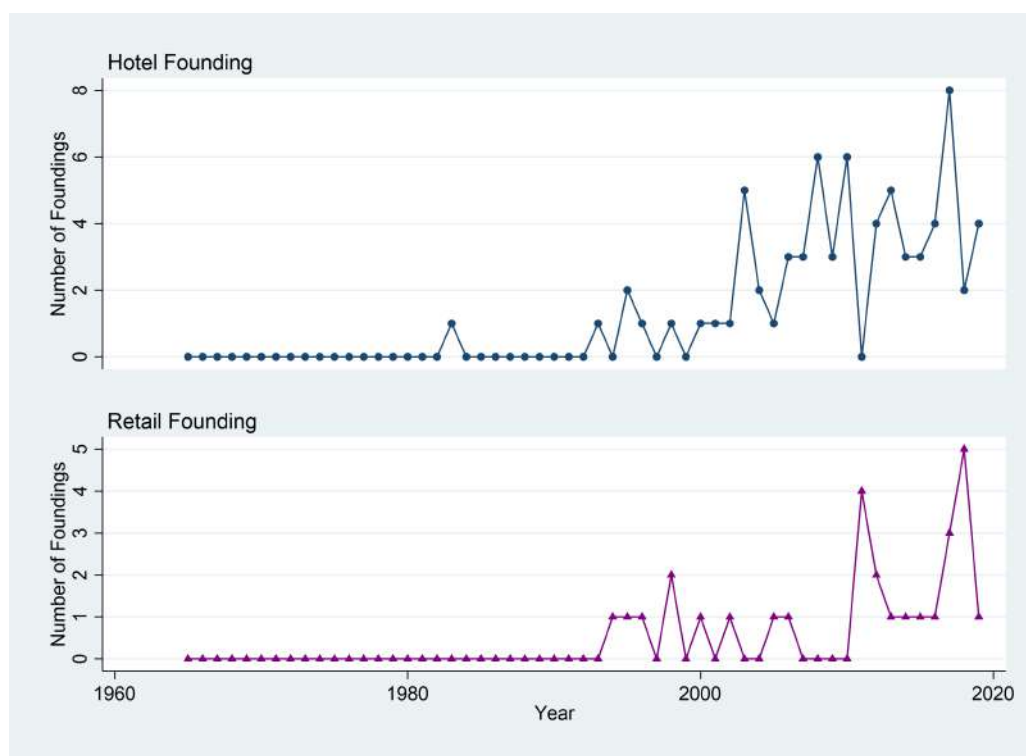
Figure 11.1: Hotel and Retail Population Founding Events

Visually, these results are interesting, as they superficially confirm the mutualistic nature of these populations. It also gives a hint towards a latency effect

between organisation population, as described within the theories of organisational niches and our hypotheses.

We also analysed the mortality events within our population, with the results shown Figure 11.2. It is interesting to note that only a single event for retail mortality took place during our observation window.
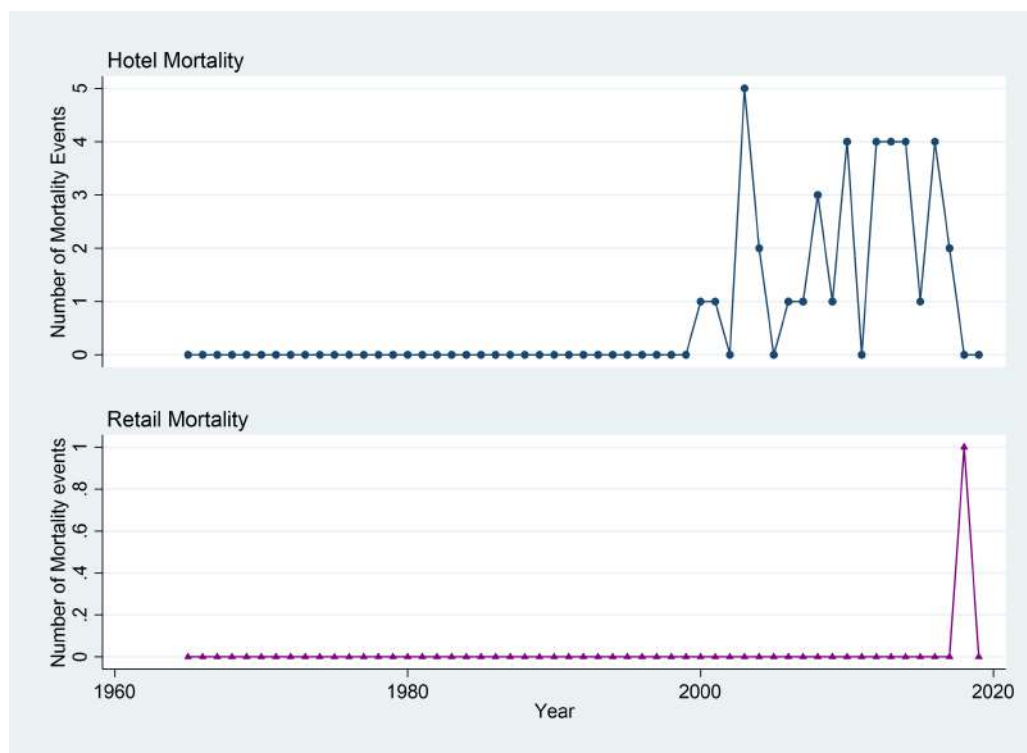
Figure 11.2: Hotel and Retail Population Mortality Events

This event can be dismissed as an anomaly (or outlier), even by the standards set by organisational ecology. However, we believe, anecdotally, the lack of retail mortality has a story to tell. We first analyse the specific data point. This data point was a Neighbourhood Mall located in Grid P4 (see Figure 10.4) closer to the 4th Ring Road of Makkah, considered the outskirts[2]. Given its far location, the mall was unable to attract tenants to agree on lease contracts. Overtime, the mall was just closed down.

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[2]Fourth Ring Road at the time of writing. Makkah can undergo a phases of rapid development whereby an individual is unable to recognise the city within space of one year.

Secondly, the lack of mortality in retail hints towards the shifting retail tastes of Makkah's audience segments. Over the year, areas in proximity to the Grand Mosque, had a variety of unstructured retail markets (referred to as *souqs or souks*. The advent of structured retail provided the resident Makkah population with a new understanding of the retail concept leading to its legitimation and eventual density increases as we see in Figure 11.3. Accordingly, we believe, although the lack of mortality events maybe *appear* insignificant, but they confirm a social intuition. Furthermore, it gives weight to our social intuition developed in Chapter 7, whereby retails are gravitating towards the pilgrim (transitory) audience segment.

Whereas, the hotel population witnessed a sizeable amount of mortality events. Accordingly, in terms of the intra-population effects we will concentrate on founding rates, given the lack of substantial mortality events. Furthermore, our mortality will concentrate on the mortality of hotels, but by incorporating density dynamics of retail population to develop an understanding within a community ecology context.

Figure 11.3 shows the density profiles for our populations and it follows a non-monotonic trajectory due to period of rapid growth followed up a period of stagnation. This visual is important as it enables us in selecting the correct specification for founding and density rates.

The graph above, will prompt readers to question the exponential rise in the hotels and retail despite the gradual increase in pilgrim numbers. In order to answer the question, we attempt to *unpack*[3] certain visual inferences from the graph. We have divided the graph into 5 panels as follows: (1) Pre-1983; (2) 1983 - 1995; (3) 1995 - 2005; (4) 2005 - 2010; and (5) Beyond-2010. 1983 marked the founding of the first purpose built hotel with a star rating. Prior to this date, there were hotels in Makkah, but their existence is not recorded in our dataset. Furthermore, these establishments were less hotels and more establishments offering a place to stay. Between 1983 - 1995 we see the same player established in 1983 dominating the market, with a few entrants entering between 1994 and 1995. We believe, the concept of *a hotel* is being established in the Makkah for first time, as previously, people were not exposed to the

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[3]We mainly use our experience by living in the country (since birth) and anecdotal evidence.
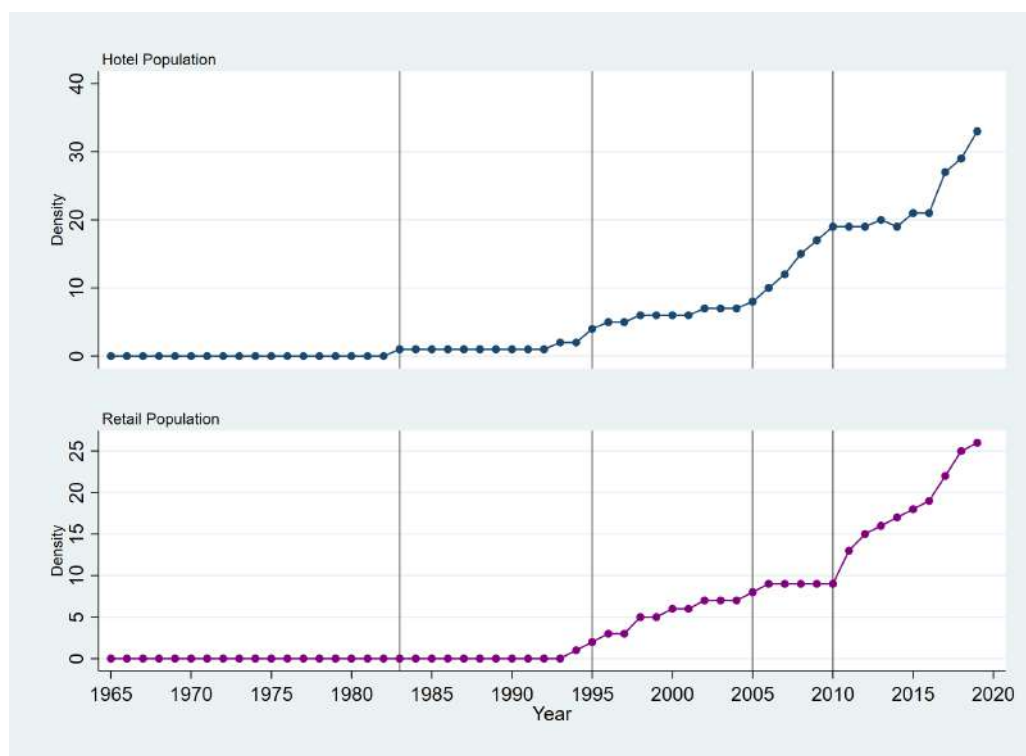
Figure 11.3: Hotel and Retail Population Density

concept. Furthermore, we believe the Saudi National saw this as an economic opportunity to open and establish hotels causing entrepreneurial movement in the city. Consequently, between 1995 - 2005 the hotel population saw modest growth with a few additions. However, the retail population saw some considerable growth, as logistical access to Makkah became easier due to improved infrastructure by the Government. Between 2005 - 2010 the retail population was stagnant, as sufficient offerings were available to cater to the Makkah's city population and pilgrims, but the Hotel population saw dramatic growth. We conjecture it was the injection of Saudi Money into various economic sectors post 9-11; consequently, the hotel segments in Makkah[4] saw growth. Finally, beyond 2010 we see both populations seeing continuous ambitious growth, as pilgrimage is seen as a vital contributor to economic growth as seen by the Public Investment Fund's strategy (PIF 2017).

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[4]We presume, we would see a similar trajectory for Madinah–the other Islamic City for the Muslim World.

Now we turn our attention to the developed hypotheses to prove or disprove them.

11.4 Identity Dynamics

Our first analysis centres on understanding the role *Distance from Grand Mosque* plays in the selection of organisation forms. Recall Hypothesis 1 states:

> As the distance from the GM increases, the identity restrictions drop for our community population, and we witness multiple identities co-existing within the same distance, except 5-star, and 4-star branded hotels and structured retail who are restricted by distance increases.

We have provided the basic statistics for the distance variable by individual populations below[5].

Population	Obs.	Mean	Std. Dev.	Min	Max
Hotel	71	1.625	1.87	0	10.317
Retail	27	4.963	3.389	0.329	13.031

Table 11.4: Basic Statistics for *Distance from Grand Mosque* Variable by Population

As evident from the table, there is more variation within the retail population as opposed to the hotel population, with hotels demonstrating some clustering.

Before we proceed with some advanced statistical models, we plot the location of each organisation with respect to *Distance from Grand Mosque*; the results are shown in Figure 11.4. It is visible that 3-to-5-star hotels are within five kilometres of the Grand Mosque, implying distance is restricts hotels more than retail. Recall, we were unable to obtain information for 1 and 2-star hotels due to data coverage issues.

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[5]Note, we have proceed with analysing the dataset with founding dates from our data sources. Hence, the number of observations totals 98
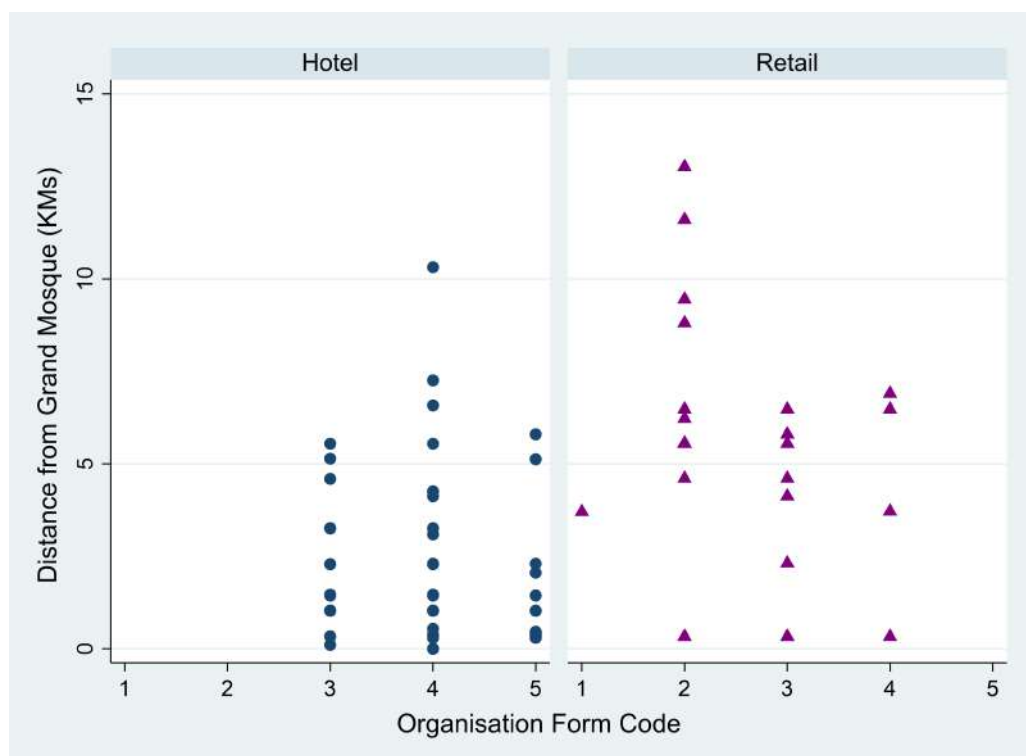
Hotel Organisation Form Codes: 5: 5-star hotels; 4: 4-star hotels; 3: 3-star hotels; 2: 2-star hotels; 1: 1-star hotels Retail Organisation Form Codes: 5: Super-regional malls; 4: Region malls; 3: Community malls; 2: Neighbourhood malls; 1: Convenience Malls

Figure 11.4: Distance and Organisation Form Code

However, the retail population does not display such restrictions. Malls of various forms are not confined by distance from the Grand Mosque. Especially, neighbourhood malls showing huge variations. Next, we try to show the distribution of the *Distance from Grand Mosque* variable to confirm the clustering suspicion arising from the aforementioned analysis; Figure 11.5 on Page 183 shows the results.

Visually, the variable does not show normality for the hotel population, whereas the retail population demonstrates a somewhat normal distribution. We conducted a Shapiro-Wilk test on the population distributions to confirm our suspicion. The null hypothesis (H_0) states that the data demonstrate some normality with alternative hypothesis (H_a) are they are *not* normal; the results
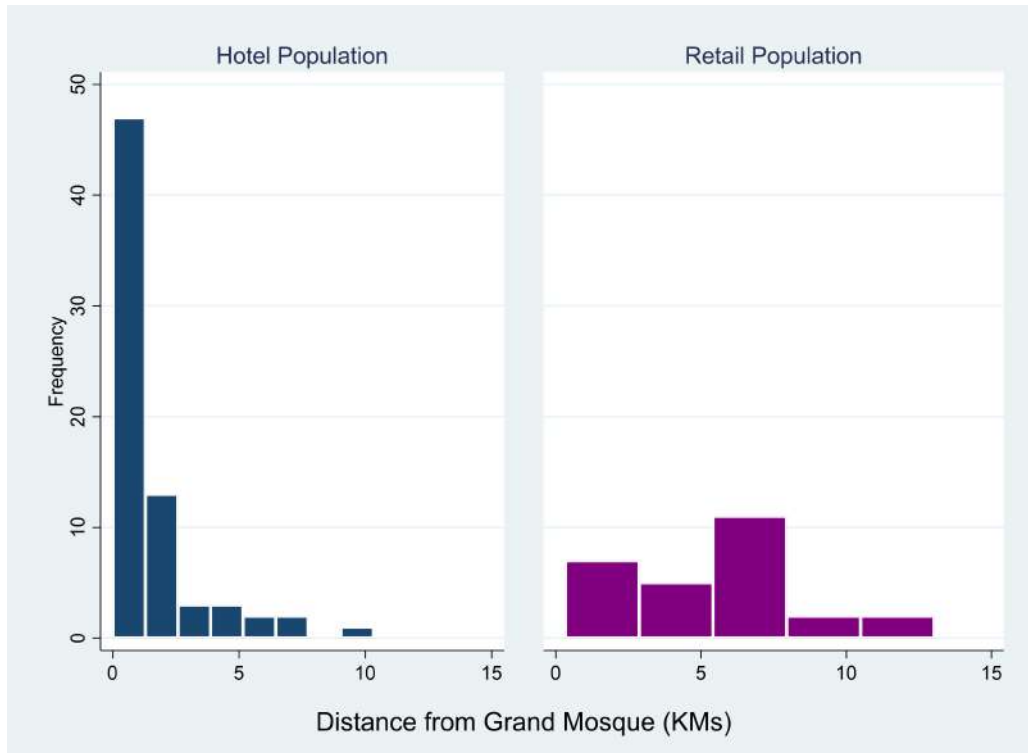
Figure 11.5: Histogram of *Distance from Grand Mosque* by Population

are shown in the table below.

Population	Obs.	W	V	Z	Prob≥z
Hotel	71	0.703	18.477	6.348	0.000
Retail	27	0.943	1.684	1.071	0.142

Table 11.5: Shapiro-Wilk Test for Normality of *Distance from Grand Mosque*

Based on the analysis conducted, and combined with the visual imagery, we can conclude that the hotel population is significantly different from a normal distribution (shown on the next page), whereas the retail population demonstrates some normality. This also presents itself as a tricky situation from an operationalisation perspective to develop meaningful statistical results.

We first analyse the impact of *Distance of Grand Mosque* across the two population sets by conducting parametric and non-parametric statistical tests. Next, we proceed in analysing the impact of distance on sub-populations.

11.4.1 Cross Population Tests

Given we have a difference in normality for our data sets, we conducted parametric and non-parametric cross population tests. The paragraphs below provide a detail on the results.

Parametric Tests

We first establish if there is a statistical difference between the standard deviations and means between the two populations by computing the f-test and t-test statistics (with unequal variances), respectively. The null hypothesis (H_0) for the f-test states that between-group standard deviations are equal, with the alternative (H_a) being the standard deviations are unequal. Similarly, the null hypothesis (H_0) for the t-test is the means of individual groups are equal, with the alternative hypothesis (H_a) the means are unequal. For both tests, we assumed an alpha (α) value of 0.05. For both tests, our results yielded significant results (P < 0.00001) allowing us to safely reject the H_0. It is important to note that the formal statistical tests indicate inequality of standard deviations and means, but do not state which group is contributing to it. Table 11.6 documents our results from the tests.

Now we will proceed with running non-parametric tests.

Non-Parametric Tests

In the non-parametric context, we employ the Mann-Whitney[6] test to formalise the statistical significance of our populations. The null hypothesis (H_0) in this context is the variances of *Distance from Grand Mosque* is equal, and the alternative hypothesis (H_a) is that the variances are unequal; the alpha (α) is assumed at 0.05. Similar to the parametric tests, the non-parametric test yielded a significant result (P<0.00001) for our population allowing us to safely reject the H_0, but the test does not tell us which group is different.

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[6]In Stata v16 it is called the Wilcoxon rank-sum test

Group	Obs	Mean	Std. err	Std. dev	[95% conf. interval]	
Hotel	71	1.625	0.222	1.87	1.182	2.068
Retail	27	4.963	0.652	3.389	3.623	6.304
Combined	98	2.545	0.283	2.802	1.983	3.106

Variance Test (f-test)

ratio = sd(Hotel) / sd(Retail)   f = 0.3046

H0: ratio = 1   Degrees of freedom = 70, 26

Ha: ratio <1   Ha: ratio != 1   Ha: ratio >1

Pr(F <f) = 0.0000   2*Pr(F <f) = 0.0001   Pr(F >f) = 1.0000

Mean Test (t-test)

diff = mean(Hotel) - mean(Retail)   t = -6.2057

H0: diff = 0   Degrees of freedom = 96

Ha: diff <0   Ha: diff != 0   Ha: diff >0

Pr(T <t) = 0.0000   Pr(|T| >|t|) = 0.0000   Pr(T >t) = 1.0000

Table 11.6: Cross Population Variance (f-test) and Mean (t-test) Tests for the Variable *Distance from Grand Mosque*

Group	Obs	Rank Sum	Expected
Hotel	71	3020.5	3514.5
Retail	27	1830.5	1336.5
Combined	98	4851	4851

Unadjusted variance	15815.25
Adjustment for ties	-31.26
Adjusted variance	15783.99

H0: Distance from Grand Mosque (Hotel) = Distance from Grand Mosque (Retail)

z = -3.932

Prob >z = 0.0001

Exact prob = 0.0001

Table 11.7: Mann-Whitney Statistical Test for *Distance from Grand Mosque* for our Populations

Test Conclusion

The results prove that the two populations are different with respect to *Distance from Grand Mosque*. However, we are unable to determine for which population does the distance variable restrict identity patterns as per our hypotheses. Our social intuition states, it should be the hotel population, but attaining a statistical significance removes ambiguities. Therefore, we proceeded with conducting within-population tests for a deeper understanding.

11.4.2   Within Population Tests

We now conduct within-population tests to determine how *Distance from Grand Mosque* impacts sub-organisation forms.

Hotel Population

Earlier, we provided evidence of the hotel population being a non-normal distribution; hence we apply the Kruskal-Wallis rank test to determine if *Distance from Grand Mosque* impacts the sub-populations. We analyse the impact on the hotel population from two dimensions, firstly from the hotel star-rating and secondly, from the hotel branding structures. Both dimensions are important in the schematisation requirements for an organisation.

Star-Rating Analysis.   The basic statistics of the *Distance from Grand Mosque* for the population along the dimension of star rating are shown below. The null

Hotel Type	Obs	Mean	Std. Dev.	Min	Max
3-Star	8	1.781	0.862	1.028	3.258
4-Star	33	2.345	2.294	0	10.317
5-Star	30	0.791	1.066	0.296	5.799

Table 11.8: Basic Statistics for *Distance from Grand Mosque* for Hotel sub-populations

hypothesis (H_0) in this test is the mean-ranks of the sub-groups are equal, with the alternative (H_a) being they are unequal; the alpha (α) is assumed at 0.05.

The test revealed that we have sufficient evidence against the null hypothesis (H_0) and can safely reject it (p-value <0.0001); the results are shown in Table 11.9.

Hotel Type	Obs	Rank Sum
3-Star	8	396
4-Star	33	1518
5-Star	30	642

chi2(2) = 26.180
Prob = 0.0001
chi2(2) with ties = 26.290
Prob = 0.0001

Table 11.9: Kurskal-Wallis Test for Distance from Grand Mosque by Hotel Type

However, like the parametric tests, the Kruskal-Wallis test does not tell which group is different. At this point, we can say *Distance from Grand Mosque* impacts the hotel sub-populations using stars as a analytical dimension.

Branding Analysis. Now we test the impact of *Distance from Grand Mosque* on the branding structures of the hotel population; the basic statistics of the branded population are shown below. Given its non-normal distribution, we

Hotel Type	Obs	Mean	Std. Dev.	Min	Max
Branded	*41*	*1.676*	*1.871*	*0*	*7.257*
3-Star	4	1.902	1.08	1.032	3.258
4-Star	17	2.588	2.219	0	7.257
5-Star	20	0.855	1.254	0.296	5.799
Unbranded	*30*	*1.555*	*1.899*	*0*	*10.317*
3-Star	4	1.659	0.726	1.028	2.288
4-Star	16	2.087	2.417	0	10.317
5-Star	10	0.662	0.565	0.3	2.056

Table 11.10: Basic Statistics for *Distance from Grand Mosque* along dimension of Brand and Star Rating

Branding Code	Obs	Rank sum
0 (Unbranded)	30	1095.5
1 (Branded)	41	1460.5

$$\text{chi2(2)} = 0.033$$
$$\text{Prob} = 0.8568$$
$$\text{chi2(2) with ties} = 0.033$$
$$\text{Prob} = 0.8565$$

Table 11.11: Kurskal-Wallis Test for Distance from Grand Mosque by Hotel Branding

employ the Kruskal-Wallis test to achieve statistical significance where null hypothesis (H_0) in this test is the mean-ranks of the sub-groups are equal, with the alternative (H_a) being they are unequal; the alpha (α) is assumed at 0.05.

The first test analyses the impact of *Distance from Grand Mosque* along branded dimensions for the hotel population—that is, branded vs. un-branded. The test resulted in a p-value = 0.8568. The result provides insufficient evidence to reject the null hypothesis implying that *Distance from Grand Mosque* does not impact the branding structures of hotels. This is quite a surprising result as our social intuition relied on distance impacting brand structures; the results are shown in Table 11.11

Combined Star & Branding Analysis. Accordingly, we analysed the impact of Distance of Grand Mosque between (1) star-rated branded hotel sub-populations and the (2) star-rated unbranded hotel sub-populations. This resulted statistically significant results, p-value = 0.001 and p-value = 0.004, respectively. Furthermore, we conducted another test by removing the 5-star hotels from the sample and conduct the test on the remaining sub-populations. Such a test resulted in a p-value = 0.8179. This result shows that *Distance from Grand Mosque* does not impact a hotel's branding structure, but rather their star categories, and this effect is highest for the 5-star hotel category; these results are shown in Table 11.12

Hotel Type	All Branded Hotels		All Unbranded Hotels		All Hotels except 5-Star	
	Obs	**Rank sum**	**Obs**	**Rank sum**	**Obs**	**Rank sum**
3-Star	4	117.5	4	82	8	175
4-Star	17	465.5	16	303	33	686
5-Star	20	278	10	80	-	-
chi2(2) =		13.807		10.988		0.053
Prob =		0.001		0.0041		0.8179
chi2(2) with ties =		13.86		11.067		0.054
Prob =		0.001		0.004		0.8168

Table 11.12: Branded and Unbranded Hotel Analysis

Retail Population

Now we analyse the retail population and its interaction with *Distance from Grand Mosque* variable; we have provided the basic statistics of this variable below. The retail population demonstrates normality as we saw earlier with

Retail Type	Obs	Mean	Std. Dev.	Min	Max
Convenience	1	3.704	.	3.704	3.704
Neighbourhood	14	5.955	3.923	0.329	13.031
Community	8	3.69	2.424	0.329	6.475
Regional	4	4.356	3.033	0.329	6.902

Table 11.13: Basic Statistics for Retail Population by Organisation Type

four sub-populations. In such a scenario, we conduct a one-way ANOVA as the selected test. The null hypothesis (H_0) of the test states, the means are equal, with the alternative hypothesis (H_a) suggesting they are unequal. The alpha (α) is assumed at 0.05. An essential prerequisite for conducting an ANOVA test is achieving homogeneity of variance between the sub-groups. The Bartlett's test for equal variance is insignificant (p-value 0.407), implying homogeneity of variance is maintained between the populations. The ANOVA test results in a p-value = 0.4809 suggesting that *Distance from Grand Mosque* is not a statistically significant variable for retail sub-populations; results are shown in Table 11.14.

	Analysis of Variance				
Source	SS	df	MS	F	Prob >F
Between groups	29.79874	3	9.932912	0.85	0.4809
Within groups	268.7877	23	11.68642		
Total	298.5864	26	11.48409		

Bartlett's equal-variances test: chi2(2) = 1.7987   Prob>chi2 = 0.407

Table 11.14: ANOVA for Retail Population

11.4.3 Inferences

What are the inferences we can draw from the statistical tests we conducted? Recall our hypothesis stated that increases in distance reduce identity restrictions for the community. Based on analyses, we have identified a few insightful inferences. Firstly, *Distance from Grand Mosque* has a significant relationship with the hotel rating, as opposed to individual branding structures. This result confirms our social intuition that distances restrict identity patterns. However, we had a broader understanding of identity that included hotel ratings and branding structures. Whereas the social understanding for identity is limited to star ratings only. Furthermore, the schematisation employed by the Ministry of Tourism does not have distance as part of its codes for Makkah. Furthermore, we see impact of *Distance from Grand Mosque* is more profound for the 5-star population as opposed to remaining members.

Secondly, the retail population is not sensitive to changes in *Distance from Grand Mosque*, which is quite surprising. We were under the impression that retail should experience the same dynamics as the hotel population; however, this was not observed.

In Chapter 12 we will discuss in detail the implications of these results.

11.5 Founding Rates, Appeal & Taste Dynamics

Now we turn our focus to the bulk of our hypotheses analysing the population vital rates. Practitioners in our real-estate field will find this section

challenging, given the sophisticated mathematical concepts involved. However, we endeavour to provide a straightforward explanation of our findings and underlying concepts used. Recall in Chapter 9 we mentioned that founding rates use the Poisson process for founding rates, since founding rates are an arrival process that is impacted by various exogenous factors (Carroll et al. 2000a, Chaps. 6-7). The operationalisation uses counting of organisation founding events along a suitable period, which in our case is a calendar year starting from 1965 and ending in 2019; we have provided founding counts in figures above.

There are two issues that need careful consideration to employ count models as a regression technique. The first issue is achieving equality of mean and variance within the dataset. In situations of violation, it is preferred to use the negative-binomial regression. The table below shows the mean and variance for the overall hotel population, the retail population, and the 5, 4, and 3-star hotel populations.

Population	Obs.	Mean	Variance
Hotel (Overall)	55	1.29	3.84
Retail	55	0.49	0.88
5-star	55	0.55	1.03
4-star	55	0.60	1.10
3-star	55	0.15	0.16

Table 11.15: Mean and Variance for Hotel and Retail Populations

As we see, the strict requirement for the equality of mean and variance is unachieved. Secondly, the issue of zeros in the dataset and readers can see from Figure 11.1 above, we have a significant number of zeros. In our dataset these zeros arise due to no founding events or lack of recording of founding events. We suspect, data on the hotel population suffers from inadequate recording of hotel founding events. During the 1960s or 1970s we doubt strict processes were followed to record hotel entries into the Makkah population. It is equally plausible that the government has those statistics and has not made them available to our data sources. Nonetheless, based on the data sources we believe the zeros for the hotel population occur due to lack of recording, and we treat them

as zero founding event scenarios (Group 2020).

Exploratory analysis[7] on the Poisson and Negative-binomial yielded insufficient evidence towards a preferred model; therefore, we proceed analysing our founding rates using the Poisson model.

11.5.1   Testing Hypothesis 2

Recall Hypothesis 2 states that as distance increases, the founding rates: (a) for 5-star and 4-star decrease; (b) for 3-star, 2-star, and 1-star hotels increase, (c) and for the structured retail increase. We computed five founding rate models using the full extent of our independent variables, as it allows to fully test our hypotheses for the sake of parsimony (shown below). Our results yielded some support for this hypothesis based on the regression analysis conducted below. The results shows that *Distance from Grand Mosque* does have an impact on the founding rates for the community population, whereas earlier we saw distance only effected the schematisation of the hotel population. Strangely, we were expecting pilgrims (considered as resources) to have statistical significance. A plausible explanation is that pilgrims are going to visit the Grand Mosque irrespective of various factors. It is a religious rite and they will perform it even if they need to sleep in the courtyards of the Grand Mosque.

Regression Model Analysis

Model 1 computes the founding rates for the overall hotel population only, and we see that clustering of such hotels being founded within proximity to the Grand Mosque and being statistically significant to the distance variable. However, it is important to note that our data sources did not contain information for 1 and 2-star hotels. However, we still believe that if we had those hotels, we would achieve statistical significance for the hotel population. We did not witness the any statistical significance regarding the density measures

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[7]We compared the hotel founding rates on the full set of independent variables using a Poisson and negative-binomial regression analysis. The log-rank test of alpha in the negative binomial method resulted in a p-value = 0.500, despite the both models having overall statistical significance. Furthermore, Long et al. (2014) developed a stata command that analyses the fit of count models. Using that command, we did not see significant differences as well.

	(1) Hotels Only	(2) 5-Star Only	(3) 4-Star Only	(4) 3-Star Only	(5) Retail Only
Constant	-2.252***	-3.801***	-3.441***	-3.263	-3.476**
	(0.629)	(1.128)	(1.028)	(1.833)	(1.230)
Resources at Founding	0.0214	0.0598	0.157	-0.477	0.157
	(0.174)	(0.259)	(0.304)	(0.595)	(0.324)
Avg. Distance of Hotel Founding	0.593*	-0.198	1.712**	-0.0906	-0.746
	(0.295)	(0.370)	(0.547)	(1.058)	(0.543)
Avg. Distance of Retail Founding	-0.00446	-0.0170	-0.0128	0.430	0.574*
	(0.0436)	(0.0800)	(0.0684)	(0.267)	(0.251)
Hotel Density	0.137	0.266	-0.0849	0.639	-0.140
	(0.156)	(0.230)	(0.267)	(0.628)	(0.244)
Hotel Density^2	-0.00315	-0.00838	0.00148	-0.0161	
	(0.00421)	(0.00574)	(0.00797)	(0.0163)	
Retail Density					1.155
					(0.683)
Retail Density^2					-0.0291*
					(0.0142)
Hotel-Previous Year Founding	-0.154	0.129	-0.548	-0.160	-0.115
	(0.149)	(0.212)	(0.293)	(0.584)	(0.254)
Retail-Previous Year Founding	0.000129	0.376	-0.350	-1.372	-1.205
	(0.243)	(0.376)	(0.417)	(1.183)	(0.702)
Distance-Based hotel Founding Centre (0 – ⩽1.5 KM)	0.454***	0.363*	0.620***	-0.0852	-1.393*
	(0.0994)	(0.165)	(0.153)	(0.737)	(0.610)
Near Centre (⩾1.5 – ⩽2.5 KM)	0.112	-0.126	0.520	0.722	0.661
	(0.271)	(0.436)	(0.492)	(0.817)	(0.678)
Periphery (⩾2.5 KM)	-0.0188	0.251	-0.285	0.469	0.851
	(0.223)	(0.342)	(0.367)	(1.140)	(0.657)
Size Hotel Category	-0.000119	0.0000326	-0.000182	0.000610	0.00117
	(0.000172)	(0.000234)	(0.000303)	(0.000711)	(0.000622)
Size Retail Category	0.00000668	-0.00000166	0.00000826	-0.0000174	-0.0000767*
	(0.00000691)	(0.0000109)	(0.0000105)	(0.0000329)	(0.0000357)
N	55	55	55	55	55
Pseudo R^2	0.612	0.529	0.560	0.434	0.524
Chi^2	130.7	63.54	70.65	20.92	58.40
Log-Likelihood	-41.44	-28.25	-27.75	-13.65	-26.55

Standard errors in parentheses; * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 11.16: Coefficients for variables based on Poisson regression on founding events

(Hotel Density and Hotel Density^2), which is quite strange leading us to believe that the population, plausibly, is in the early stages—that is initial legitimation, even though we had assumed the population has reached its state of constitutive legitimation. Alternatively, it can also imply that social appeal structures have not yet been taken-for-granted in the population and pilgrims are exerting their cognitive powers in spiritual efforts as opposed to co-creating of hotel forms and appeal positions. Despite this, we believe that a segment of the pilgrim resource maybe active in defining the organisation forms, but without data we cannot confirm this intuition.

Model 2 assess the founding rates for 5-star hotels only, and with this model we have achieved confirmation for our hypothesis, with the population clustering around the Grand Mosque. We do see that founding rates have an inverse relationship with average distance, but this is not a statistically significant relationship. However, with foundings in the centre we have a positive and statistically significant relationship confirming our social intuition of 5-star hotels occupying the areas in proximity to the Grand Mosque. Strangely, all other variables are insignificant for 5-star implying dynamics of distances on this sub-population.

Model 3 looks at the 4-star hotel population, and similar to the 5-star population demonstrates clustering in proximity to the Grand Mosque. Interestingly, 4-stars hotels demonstrate statistical significance to *Distance from Grand Mosque* and it's a positive relationship. Collectively, these two results work in opposite directions in relation to our hypothesis. We stated the founding rates should *decrease* with *increases* in *Distance from Grand Mosque*. Recall, we mentioned earlier, the effect of *Distance of Grand Mosque* is more profound for the 5-star population as opposed to remaining populations, and now we see its impact as founding rates for 4-star populations increases with distances. Plausibly, this shows a complex identity for 4-star hotels, which we will need to confirm through our remaining hypotheses.

Model 4 shows information on 3-star hotels and we were unable to achieve any meaningful results and unable to confirm our hypothesis.

Model 5 shows the founding rates for retail population and has yielded some interesting insights. The model shows increasing distance does increase

the founding rates and confirms our hypothesis. Furthermore, we see statistically significance with respective to the variable measuring retail competition—Retail Density[2]. We see this relationship is negative confirming our assumption of the retail population going through a legitimation process, with increasing founding rates and low competitive relations. We also see that centre hotel founding depresses the founding rates for independent retail, and is the first evidence on vital rates being impacted by cross-population dynamics. Recall hotels in the centre follows complex identity patterns as hotels and retails are located within the same physical structure. This restricts the establishment of independent retail (that do not have a hotel) in the centre, as spaces are already occupied. Additionally, retail founding rates are being depressed due to increases in category-level size. As retail organisations spread throughout the city and occupy available land, they make it difficult for new structured retail to establish themselves.

Causality Interpretation & Hypothesis Confirmation

In summary our hypothesis of founding rates is partially fulfilled. We were able to demonstrate impact on founding rates for 5-star hotels is inverse to increases in distances from the Grand Mosque. This is consistent with our anecdotal evidence, given the offering of 5-star hotels, it will be difficult for them to operate in areas far from the Grand Mosque, as the audience segment is looking for an offer with increased comfort and reduced commute times to the Grand Mosque. Consumers of such offers are looking to maximise their spiritual and material needs.

4-star hotels maybe suffering from an identity crisis as they are in proximity to the Grand Mosque but also their founding rates increase with distances. It is possible their appeal positions differ concerning distances as well. We expect that 4-star hotels located in the centre would have a different offer and appeal structure in comparison to such hotels located in the near-centre. Qualitatively, 4-star hotels try to mimic an offering of a 5-star hotel, but given the social schematisation requirements are unable to fully claim their 5-star categorical membership vis-à-vis *Distance from Grand Mosque* variable. Hence, they resort

to areas further from the Grand Mosque, which is more in compliance with their offers.

We were unable to verify our hypothesis of the 3-star hotel segments, suggesting that such dynamics don't impact the sub-population. Finally, we achieved confirmation for the hypothesis related to the retail population. Qualitatively implying their symbiotic nature with hotels—after a pilgrim are done with he spiritual needs, they spend some time engaging in material aspects of the pilgrimage. In Chapter 12 we elaborate the implications of our findings.

11.5.2   Testing Hypotheses 4 & 5

Readers will notice that we skipped Hypothesis 3 which concerns the mortality dynamics of the populations we analysed above. We have analysed all mortality related hypotheses in section 11.7 for ease of argument structure.

The next set of hypotheses analyses the impact of branding structures on founding rates. Recall the key social intuition (and premise of the hypotheses) is, brands exist within proximity to the Grand Mosque as appeals of such hotels offers comfort, luxury, and easy access to the Grand Mosque for their religious duties. As *Distance from Grand Mosque* increases, hotels are unbranded as the pilgrim's requirements changes from luxury to necessity of accommodation; the results of our analysis are shown in the table below. We merged the near-centre with periphery due to the very low number of founding events causing issues of statistical convergence.

Readers will notice the use of market location to analyse founding rates and the similarity with resource partitioning. Our use of market location is purely analytical, and we are not testing the resource partitioning hypothesis.

Market Location	(1) Market-Centre	(2) Market-Centre	(3) Market-Centre	(4) Near-Centre & Periphery	(5) Near-Centre & Periphery	(6) Near-Centre & Periphery	(7) Overall Population	(8) Overall Population
	All	**Branded**	**Unbranded**	**All**	**Branded**	**Unbranded**	**Branded**	**Unbranded**
Constant	-2.367*** (0.575)	-2.796*** (0.738)	-3.486*** (0.971)	-5.678** (2.180)	-7.111** (2.508)	-5.996 (5.688)	-2.867*** (0.779)	-3.344*** (0.999)
Resource at Founding	0.155 (0.137)	0.144 (0.179)	0.137 (0.216)	-0.149 (0.232)	0.354 (0.318)	-1.015 (0.543)	0.132 (0.206)	0.0148 (0.243)
Hotel Density	0.265* (0.115)	0.230 (0.151)	0.366 (0.196)	0.695** (0.256)	0.299 (0.314)	1.461* (0.610)	0.151 (0.207)	0.0745 (0.220)
Hotel Density^2	-0.00554 (0.00302)	-0.00483 (0.00360)	-0.0109 (0.00679)	-0.0111* (0.00470)	-0.00144 (0.00660)	-0.0256* (0.0102)	-0.00483 (0.00524)	-0.00594 (0.00611)
Hotel-Previous Year Founding	-0.111 (0.0847)	-0.203 (0.112)	0.0278 (0.136)	-0.154 (0.115)	-0.115 (0.150)	-0.245 (0.229)	-0.232 (0.149)	-0.0485 (0.194)
Size Hotel Category	-0.000130 (0.0000998)	-0.0000732 (0.000132)	-0.000121 (0.000162)	-0.0000195 (0.000155)	-0.000298 (0.000244)	0.000300 (0.000247)	-0.0000320 (0.000156)	0.000104 (0.000193)
Avg. Distance of Hotel Founding							0.343 (0.330)	0.989** (0.371)
Distance-Based hotel Founding								
Centre (0 – ≤1.5 KM)							0.281* (0.131)	0.605*** (0.158)
Near Centre (≥1.5 – ≤2.5 KM)							0.127 (0.374)	0.202 (0.371)
Periphery (≥2.5 KM)							0.341 (0.276)	-0.621 (0.428)
Pseudo R^2	0.388	0.339	0.318	0.593	0.516	0.604	0.523	0.542
Chi^2	63.96	37.87	32.03	55.69	34.55	29.11	76.54	66.04
Log-likelihood	-50.45	-36.88	-34.29	-19.15	-16.17	-9.560	-34.91	-27.87

N = 55 for all models; Standard errors in parentheses; * p < 0.05, ** p < 0.01, *** p < 0.001

Table 11.17: Coefficients for variables based on Poisson regression on Hotel (Only) founding events for Hypotheses 4 & 5

Regression Model Analysis

Models 1, 2, and 3 analysed the founding rates of all hotels, branded, and unbranded hotels by their market locations, respectively. Interestingly, we notice that the density variable is positive and statistically significant, thus confirming the market-centre as the place for hotel owners to establish their hotels. It is also surprising to notice that the centre is experiencing the legitimating force based on density-dependence theory, whereas our social understanding was it should witness significant competitive pressures due limited land availability. Furthermore, legitimation is is operating at overall population level as shown in Model 1; whereas, Model 2 and 3 lack any statistical significance. Implying legitmation operates at a population level and not sub-population. It is not surprising to notice that none of the variables are statistically significant, even resources for Models 1-3, as they enjoy a remarkably close proximity ($\leqslant$1.5km from the Grand Mosque), and naturally, pilgrims will prefer to stay close to the Grand Mosque despite the presence of any brands, or other social reasons. It is simple equation in pilgrim's[8] mind: closer to the Grand Mosque allows for resting and praying.

Models 4, 5, and 6 analysed the founding rates in the market's near-centre and periphery regions with models for the overall hotel population. It is interesting to note the significance achieved for the *Hotel Density* and *Hotel Density*^{2} variables in Models 4 and 6, suggesting highly active competitive and legitimation dynamics for the hotel population. The first-order effect of density (as captured by Hotel Density) is still positive and larger than the second-order effect (as captured by *Hotel Density*^{2}), suggesting that legitimation of the near-centre and periphery regions is strong (Model 4). The main rationale for this is the very limited land availability in proximity to the Grand Mosque, or land is already acquired by various audience segments: real-estate developers and the Government. Model 5 did not yield any significant results, therefore we cannot confirm or deny the relationship of hotel brands with respect to their distances from the Grand Mosque. Model 6 clearly shows Unbranded hotels preferring locations further away from the Grand Mosque, but we also see the competitive

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[8]Such as the author's

dynamics. However, since the *Hotel Density* variable is greater than the *Hotel Density*^{2} it shows the legitimation force being stronger than the competitive elements.

Models 7 and 8 provide an overall view of the hotel populations based on their brand structures. We see branded and unbranded hotels are localised in the market-centre, reconfirming our earlier results that the market is sensitive to star categories as opposed to branding structures.

Causality Interpretation & Hypothesis Confirmation

Based on the analysis conducted in this section, can we confirm or reject our hypotheses? Hypothesis 4 posits that founding rates for branded hotels will increase at a higher rate than unbranded hotels, in the market-centre. Based on the comparison of Models 2 and 3 we are unable to achieve statistical significance and conclude this hypothesis as unconfirmed. As part of Hypothesis 1 we saw the audience segment is sensitive to changes in a hotel's star rating providing the required level of causal confirmation to these results. Anecdotally, pilgrims do not care about the brand, as pilgrims make their decisions based on the distance the hotel's star-rating.

Furthermore, for Hypothesis 5 we are unable to ascertain a direct confirmation of our hypothesis: distance increase increase founding rates. Based on the results of Model 6 and 8 we can conclude that such a mechanism does take place in the population. Plausibly, we see evidence of unbranded hotels being founded with increases from the Grand Mosque. Implying, unbranded hotels display a unique characteristic of being located throughout the city, and if they have a high star rating will be located in the market-centre, which is confirmed based on numerous visits to Makkah. Therefore, we conclude it as a *partial* confirmation, because the audience segments are responsive to changes in star-ratings and not brands.

11.5.3   Testing Hypothesis 7

The next hypothesis analyses the community dynamics in our community population by focusing on the inter play of vital rates between the community

populations. In developing Hypothesis 7 we did not explicate vital rates, and kept it open allowing us the flexibility to conduct the analysis either on founding or mortality rates. We use founding rates to analyse the impact of cross-population vital rates, as our dataset contained insufficient mortality events for a suitable analysis (see Figure 11.2). Figure 11.1 visually shows that the founding of hotels impacts the founding of retail organisations albeit by a latency effect. In operationalising this hypothesis, we executed two steps. First, we set retail founding as the dependent variable with remaining variables as independent, including the hotel founding. Second, we led and lagged the variables to determine the approximate latency effect on the retail founding; the results are shown in the table below.

Regression Model Analysis

Model 1 below is similar to Model 5 from Table 11.16, with variables modified for analytical consistency; such as *Hotel-Previous Year Founding* was replaced with *Hotel Founding* with a unified timescale for *Retail Founding* (of Table 11.16). We did not include Hotel Density^2 in Model 5 (of Table 11.16) but included it in this model to capture any internal hotel dynamics impacting retail founding. Our purpose in this hypothesis is to understand the latency effect between hotel and retail founding therefore, we allow this minor inconsistency to achieve the overall objective. Accordingly, Model 1 shows the *as-is* case of retail founding. It is also our base-case to assess the impact leading or lagging of variables. Note, Model 1 provides the most explanation of founding rates for the retail population as shown by Pseudo R^2.

Models 2 and 3 lead the variables ("bring them earlier") by 1 and 2 years respectively from the time points of Model 1. Similarly, Models 4 and 5 lagged the variables by 1 and 2 years. Operationalisation of this hypothesis required that only hotel orientated variables be led or lagged, which are shown in the table below. Results of models 3 and 4 are inconclusive, showing no impact-and we safely ignore the results.

Models 2 and 5 show some promise in respect of hotels founded in the near-centre. Recall, initially we stated that founding of retail organisation is

	(1) Normal	(2) Lead[1]	(3) Lead[2]	(4) Lagged[1]	(5) Lagged[2]
Constant	-3.423** (1.230)	-4.452* (1.914)	-3.135* (1.593)	-2.042 (1.056)	-2.125* (1.009)
Resource at Founding	0.114 (0.363)	0.457 (0.492)	0.145 (0.568)	-0.204 (0.402)	-0.215 (0.357)
Avg. Distance of Hotel Founding†	-0.927 (0.552)	-0.794 (0.537)	-0.628 (0.812)	-0.541 (0.431)	1.493* (0.614)
Avg. Distance of Retail Founding	0.491* (0.201)	0.410* (0.189)	0.638 (0.418)	0.198 (0.112)	0.220 (0.119)
Retail-Previous year Founding	-0.952* (0.479)	-1.557* (0.674)	-1.990 (1.505)	-0.706 (0.491)	-0.129 (0.435)
Retail Density	1.104 (0.802)	0.636 (0.836)	0.583 (0.706)	0.421 (0.789)	1.203 (0.740)
Retail Density^2	-0.0193 (0.0323)	0.0402 (0.0300)	-0.00444 (0.0241)	-0.00487 (0.0222)	-0.0233 (0.0182)
Hotel Founding†	1.047 (0.756)	0.217 (0.799)	1.662 (1.048)	-0.510 (0.722)	-1.979 (1.077)
Hotel Density†	0.0370 (0.756)	0.0787 (0.454)	-0.418 (0.466)	0.143 (0.674)	-0.595 (0.734)
Hotel Density^2†	-0.00661 (0.0207)	-0.0239 (0.0201)	-0.0151 (0.0184)	0.00522 (0.0178)	0.0283 (0.0219)
Distance-Based hotel Founding					
Centre (0 – ⩽1.5 KM)†	-2.307* (1.148)	-0.171 (0.853)	-2.177 (1.335)	0.539 (0.893)	1.763 (1.150)
Near Centre (⩾1.5 – ⩽2.5 KM)†	-0.281 (0.596)	1.229* (0.622)	-1.251 (1.184)	0.0803 (0.624)	1.432* (0.720)
Size Hotel Category†	0.000982 (0.000610)	0.000510 (0.000610)	0.00127 (0.00116)	-0.0000501 (0.000424)	0.000138 (0.000391)
Size Retail Category	-0.0000764* (0.0000348)	-0.0000830 (0.0000509)	-0.0000422 (0.0000415)	-0.00000868 (0.0000254)	-0.0000323 (0.0000241)
N	55	54	53	54	53
Pseudo R^2	0.523	0.526	0.491	0.456	0.518
Chi^2	58.28	57.38	46.83	50.34	56.68
Log-likelihood	-26.60	-25.85	-24.29	-30.08	-26.40

†: This denotes that these variables were led or lagged based on their respective models. For example, Hotel Founding was led by 1 years in model 2 but was normal for the normal model. Standard errors in parentheses; * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 11.18: Coefficients for variables based on Poisson regression on Retail Founding (only) for Hypothesis 7

depressed by hotels in the centre, since they occupy available space (Table 11.16 Model 5). The new results show that retail founding's are increased due to hotels located in the near-centre but this effect depends on the hotel founding time. According to Model 2 we are likely to witness a retail founding within one year of a hotel finding, whereas in Model 5 it is within two years of a retail founding a hotel is likely to follow. These results appear to work on opposite directions, but we see them as a unique trait of analysing community ecology vital rates.

Causality Interpretation & Hypothesis Confirmation

Community ecology operates by analysing vital rates in broader social and organisational context with various symbiotic forces working together (Audia et al. 2006; Lazzeretti 2006; Lomi 1995), and at times these forces may work in opposite direction such is in our case with plausible explanations. The common factor in both models is the market location: the near-centre areas between $\geqslant 1.5$ – $\leqslant 2.5$ KM from the Grand Mosque. Now as the first hotels open up it starts to attract and engage with pilgrims compatible with its offering whilst also experiencing the pressures of *Distance of Grand Mosque* restricting its claim for an organisation label. We saw earlier 5-star hotels are unlikely to be in the near-centre. The presence of pilgrims, due to hotel founding, makes it suitable for the establishment of retail organisation as they already have an existing resource base, required to only develop suitable offers; and we also saw earlier that distance does not impact the retail schematisation efforts. This shows the symbiotic nature between the organisational population we hinted in Chapter 1. The founded retail organisation develops a taste profile matching the profile of the proximity hotels. Anecdotally, we have seen this multiple times, were by the surrounding hotel (or retail) reflects the retail offering (or hotel offering). In areas, located in the periphery from the Grand Mosque ($\geqslant 2.5KM$) we have seen the retail offering catering to the mid-to-low end income group pilgrims. Alternatively, this dynamic can be seen as a selection pressure as well; however, we did not see any significant mortality events which will lead us to state if the symbiotic relation acts as a selection pressures for retail organisations. Thus,

Model 2 captures this order of founding hotel → retail within a year with this impact being positive with a higher coefficient value (near-centre variable).

As more retails are attracted to the area, it legitimates the area as a viable spot to consolidate pilgrims, and we see the hotels being founded. Thus Model 5 captures the order of founding as retail → hotel. However, similar to the point we raised above, each subsequent hotel founding will be restricted to developing offers matching the immediate environment. For example, if the surrounding environment caters to the mid-to-low end income group, then the hotel will have to follow suit. A hotel may try to a slightly modified offer, but this may have implications for its mortality hazard. However, in the absence of detailed data we are unable to test such intuitions further.

Collectively, Models 2 and 5 capture the complete founding cycle in the community cycle as shown in figure below. The trigger point in the figure is hotel unable to find suitable land in the centre and are then pushed to the near-centre. The results indicate that vital rates are impacted in a community
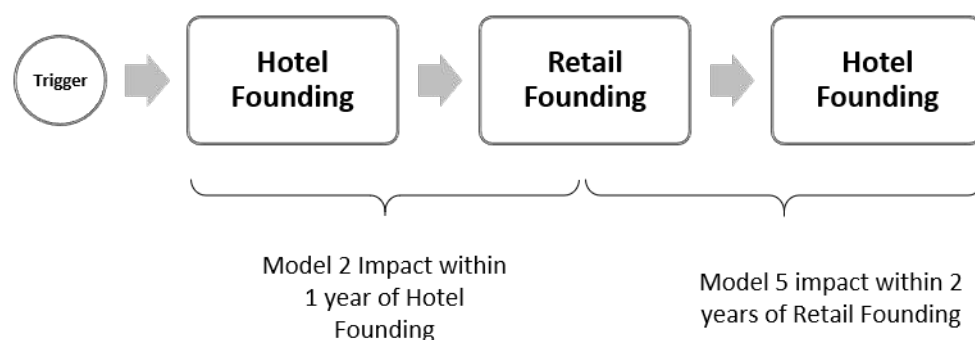
Figure 11.6: Latency effect for organisation Founding

ecology context, and thus we believe it answers Hypothesis 7.

11.5.4 Testing Hypothesis 8

Our next hypothesis analyses diversity and organisation founding, suggesting that in a diverse community founding rates should go up (Koçak et al. 2008)). Operationalisation was a key challenge for this hypothesis; do we take each quadrant developed in Chapter 9 as a unit of analysis, or do we consol-

idate the areas into meaningful categories? Naturally, we went with the latter option due to its simplicity of execution and understanding. We borrow from theory of organisation niches to develop our areas of centre, near-centre, and periphery. These follows the same distance demarcation as before; the table below shows the total found events by organisation form and market location.

Population and Form	Market Location		
	Centre	*Near-Centre*	*Periphery*
Hotel			
3-Star	4	3	1
4-Star	20	4	9
5-Star	27	2	1
Total Hotel Population	51	9	11
Retail			
Convenience Malls			1
Neighbourhood Malls	3		12
Community Malls	2	1	5
Regional Malls	1		3
Total Retail Population	6	1	21
Grand Total	**57**	**10**	**31**
Simpsons Diversity	*0.192*	*0.200*	*0.466*

Table 11.19: Community Founding events by Market Location

The table creates a picture that works in opposite directions, centre predominately is hotel with high founding events and minimal retails and vice versa for the periphery. The next step in our analysis requires developing notion of diversity for our regression analysis. For example, out of the three market locations which is the most diverse? We utilise the Simpsons' Diversity of Index at the population level. Accordingly, we see that the periphery is the most diverse in comparison to remaining market locations.
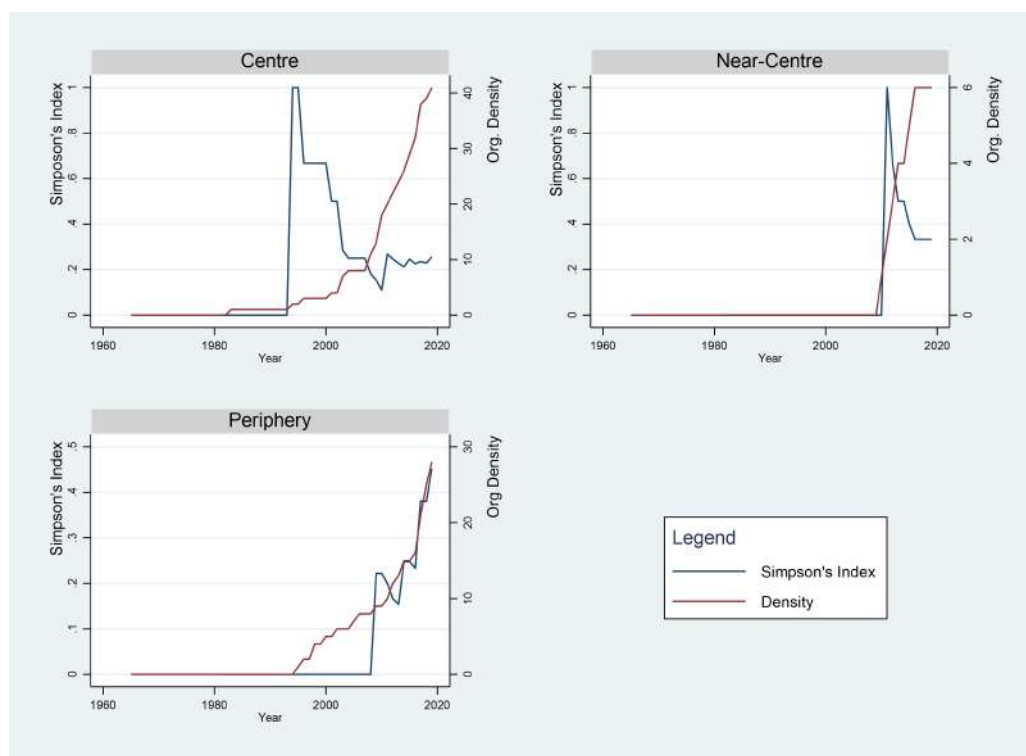
Figure 11.7: Diversity and Density

Figure 11.7 below shows the Simpsons' Diversity Index and location-based density during our observable period without making any distinctions for organisation forms. As we see in the market-centre as the density increases the diversity index drop, and we know from our earlier analysis this the centre is occupied by the hotel population. Similarly, the near-centre follows a similar trajectory as centre, but low density provides an incomplete picture. In stark comparison, the periphery has rising density and diversity over time, implying equal opportunities for hotel and retail founding, providing additional qualitative evidence for Hypothesis 7.

Regression Model Interpretation

Now we turn our attention to understand the role diversity plays in influencing founding rates. We do not specify if the founding rates relate to a specific population, only that *an organisation is founded* (that is all founding events);

	(1) Centre	(2) Near-centre	(3) Periphery
Constant	-3.502***	-6.214**	-3.138***
	(0.777)	(2.324)	(0.869)
Resources at Founding	0.429***	0.399	0.152
	(0.108)	(0.216)	(0.158)
Simpsons's Index	2.062*	-1.481	-1.923
	(0.980)	(7.115)	(5.312)
Hotel Density	0.103	-1.450	-0.173
	(0.187)	(1.070)	(0.428)
Retail Density	-0.290	2.681	0.630*
	(0.537)	(7.590)	(0.285)
Hotel Size	-0.000245	0.00102	-0.0000857
	(0.000285)	(0.000838)	(0.000553)
Retail Size	-0.0000250	0	-0.0000307
	(0.0000223)	(.)	(0.0000180)
N	55	55	55
Pseudo R^2	0.442	0.457	0.463
Chi^2	76.68	26.98	58.29
Log-likelihood	-48.48	-16.04	-33.77

Standard errors in parentheses;* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 11.20: Coefficients for variables based on Poisson regression by Market Locations

the results are shown in the table above. It seems the results are inconclusive and we were unable to find support of diversity influencing founding rates for Makkah.

11.6 Organisational Niches

11.6.1 Testing Hypothesis 9

We now turn towards the last part of our research and analyse organisational niches. As mentioned in our literature review, there are two types of niches, fundamental and realised. Our research is looking at the realised niche that

includes the effects induced by competitive pressures.

11.6.2 Testing of Hypothesis 9

There are two parts of to this hypothesis, a founding and mortality part. In this section we analyse the founding with the mortality aspect in section 11.7. Our hypothesis posits that resource partitioning is executed along the dynamics of identity, defined as being a 4-star hotel and above, and malls classified as community and above; remainder forms are classified as specialists. It is important to notes, we did not conduct a sub-population analysis for this hypothesis and focus on the collective generalist and specialists identity without regarding to individual sub-forms—that is *a generalist identity organisation being founded.*

The operationalisation of the hypothesis focused on generalist and specialist founding events with the independent variables being similar to the ones used in the previous models; the results are shown in the table below.

Regression Model Analysis

Models 1 - 3 show the overall trajectory of generalist population, with Model 3 providing a slightly better fit than Model 1. Model 1 shows the generalist population experiencing legitimation and competitive pressures, as we saw in the analysis for Hypothesis 2. Interestingly, we see the role 4-star hotels play in enforcing generalist identity patterns. These results prove our hypothesis partially. Yes, founding rates are increasing, but more for a sub-population. We also see the presence of *localised identity competition* within generalists, which *can* prove the increasing mortality hazard aspect; our section on mortality analysis explains this further.

Models 4 - 6 show the specialists story, with an equally interesting story. Instantly, we do not see any competition within the industry, suggesting adequate space for organisational founding. Similar to generalist, we see a strong influence of 3-star hotels curating the specialists identity.

	Generalists			*Specialists*		
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
Constant	-1.882***	-1.842***	-1.841***	-3.387***	-3.342***	-3.278**
	(0.433)	(0.459)	(0.511)	(0.849)	(0.920)	(1.018)
Resources at Founding	0.0425	0.0947	0.0172	0.246	0.199	0.146
	(0.0838)	(0.127)	(0.145)	(0.206)	(0.236)	(0.291)
Hotel Density	0.200*	-0.0616	0.00664	-0.0370	-0.0388	0.155
	(0.0882)	(0.216)	(0.224)	(0.211)	(0.232)	(0.460)
Hotel Density^2	-0.00513**	0.00409	0.00102	0.000301	-0.000543	-0.00730
	(0.00156)	(0.00632)	(0.00675)	(0.00348)	(0.00374)	(0.0137)
5-Star Hotel Founding	0.0775		0.115	-0.0329	-0.0424	-0.00417
	(0.106)		(0.115)	(0.187)	(0.194)	(0.221)
4-Star Hotel Founding	0.377***		0.340***	-0.291	-0.0466	-0.00716
	(0.0967)		(0.0995)	(0.262)	(0.315)	(0.317)
3-Star Hotel Founding	-0.0196		-0.0932	0.941*	1.041**	1.043*
	(0.218)		(0.230)	(0.395)	(0.399)	(0.433)
Retail Density		0.330	0.287			-0.169
		(0.231)	(0.255)			(0.506)
Retail Density^2		-0.0147	-0.0104			0.00847
		(0.00907)	(0.0101)			(0.0181)
Retail Founding					0.438	0.471
					(0.246)	(0.267)
N	55	55	55	55	55	55
Pseudo R^2	0.543	0.487	0.549	0.450	0.484	0.487
Chi^2	115.2	103.3	116.5	45.10	48.50	48.83
Log-likelihood	-48.44	-54.39	-47.80	-27.55	-25.85	-25.68

Standard errors in parentheses; * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 11.21: Coefficients for variables based on Poisson regression based on identity for Hypothesis 9

Causality Interpretation & Hypothesis Confirmation

Qualitatively, the results provided by the regression analysis confirm he social understanding. Areas in proximity to the Grand Mosque, over the years, have seen the founding of 4-star and 5-star hotels, with big retail malls. However, due to the limited land availability depress the founding rates.

In terms of the fulfilment of the founding part of Hypothesis 9 we can conclude it was a partial fulfilment. The results provide some evidence towards certain sub-populations influencing community level identity patterns. It *appears* the community population has a split between generalists and specialists, but this is heavily influenced by sub-population level dynamics-not a true community ecology resource partitioning event.

11.7 Mortality Analysis

11.7.1 Overview

In this section we analyse the hypotheses related to mortality rates which are Hypotheses 3 & 6, and the mortality portion of Hypothesis 9. In statistics mortality analysis tries to determine the probability of an event taking place, or the time it takes for the unit to fail. In organisation ecology, it is the time it takes for an organisation unit to fail in light of various variables, which is then converted into a hazard ratio—a metric quantifying the risk (or probability) of organisational failure. Hazard ratios can also change due to the method of entry/exit and the time of founding. Recall, we mentioned the entry and exit for our organisation, which has significant importance in mortality analysis (Carroll et al. 2000a). It is important to note that the retail population witnessed a single mortality event (see Figure 11.2). We will not conduct an in-depth mortality analysis for retail. We develop an initial understanding of mortality rates by developing the Kaplan-Meier and smooth hazard rates graphs for the hotel population along dimensions of brand and organisation label shown in Figure 11.8. Before we start the quantitative analysis it is important to explicate some terms used in this section. The term "improve mortality hazard" implies the mortality hazard for the organisation in question reduces.
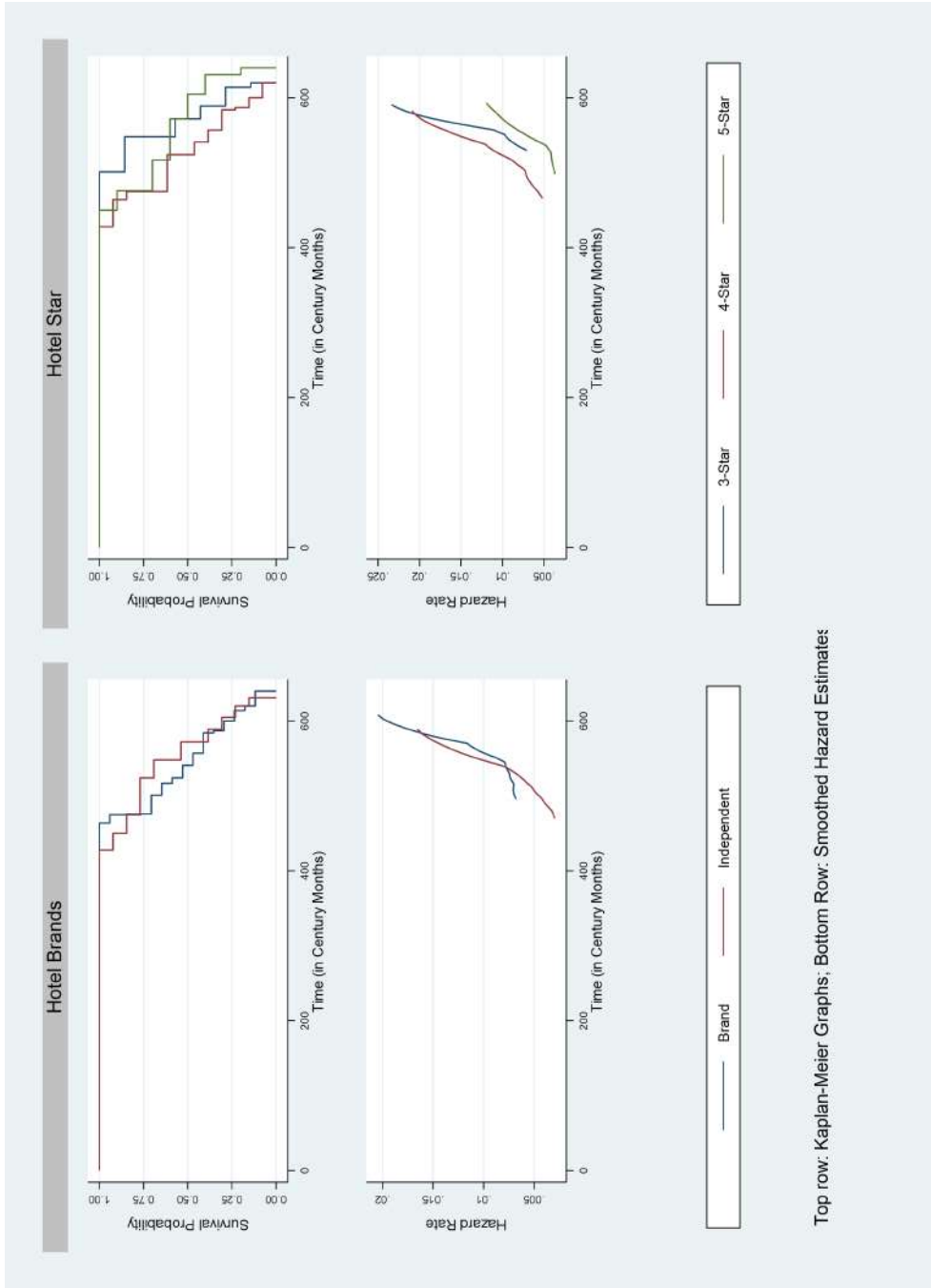
Figure 11.8: Mortality Analysis Graphs

The x-axis in the figures shows our observation time in century months, from the start of our observation period. For example, January 1965 is considered month 1, with January 1966 considered month 13. The y-axis for the Kaplan-Meier graph (top rows) shows the survival probability of the organisation in relation to the time periods. 50% of the organisations (in our dataset) are still surviving by time 540 months (around May 2009) for branded hotels, and 572 months (around December 2011) for unbranded, enabling us to assess which organisations will die earlier. In star-ratings 4-star end by 524 months (around Dec 2007) thus having a higher hazard.

Similarly, the smooth hazard rate graph shows the changes in the hazard rate with respect to our time. For example, the unbranded hazard increases from 0.003 at time 470 to 0.01 at time 545, implying that in a period of 75 months (6.5 years) the mortality hazard increased by 1.5x. With this rate increasing by another 1.5x around in the half that time between times 545 and 575. Alluding towards increased mortality hazard for our populations.

Some interesting insights are evident form the graphical analysis. The population begins with unbranded hotels as opposed to branded hotels, with the latter having elevated mortality rates at the end of the observation period (between periods of 570 – 590). There are few plausible reasons explaining the elevated mortality hazard for branded hotels. We saw earlier the hotel population demonstrating sensitivity towards star-rating as opposed to branding strategies. Coupled with pilgrim tastes shifting from branded to star-ratings makes branded hotels less appealing.

From earlier analysis we know that star-ratings are important for schematisation requirements as opposed to branded. Based on star-ratings we have a slightly different pictures, with the 4-star hotels having a consistent and high mortality hazard throughout the observation period, and 3-star hotels always following a similar trajectory albeit with a reduced mortality hazard. On-the other hand, 5-star hotels have a persistently lower mortality hazard throughout the observation period, with indications that its mortality hazards being tapered off closer to end of the observation window.

The usefulness of such analysis allows us to develop a preliminary understanding of our population before we delve into creating intricate regression

models. Next, we analyse the statistical significance between the survivor functions of Hotel Brands and Hotel Stars enabling us to have a focused regression analysis. We conducted the log-rank statistical significance to compare our survivor functions. Earlier, our results showed that brands are statistically insignificant in the schematisation requirements and founding rates. Based on our earlier analysis we presume the survivor functions will also be irrelevant for brands and not star ratings.

We conducted the log-rank to test the equality of survivor functions with our alpha (α) set at 0.05, and found the results insignificant for hotel brands (p-value = 0.9751) and insignificant for hotel star rating (p-value = 0.0647)—a surprise for our mortality analysis. Furthermore, we found statistically significant results (p-value = 0.0172) for the combination of brands and star ratings suggesting, that brand may play a role in mortality.

Earlier we mentioned the hotel population demonstrates multiple entry and exist events (see : Table 9.1). Collectively, an organisation entering and exit in a method may have elevated mortality hazards.

| | | Type of Exit | |
Entry Event	Complete Closure	Closure for Brand Orientation	Closure for Unbranded Orientation
Unbranded	0.0017	0.0020	
Branded	0.0019	0.0018	0.0018

Table 11.22: Constant Hazard of Mortality by entry and exit types

We see the constant mortality hazards are somewhat consistent between the various entry and exit states, and these constants are statistically significant (p-value < 0.0035).

Before we proceed with developing a regression model for our mortality hazard it requires *a priori* understanding of the underlying trajectory of such mortality rates. Researchers have the option to model using parametric models such as exponential, Weibull, and Gompertz. Alternatively, researchers also have the option to apply the Cox proportional hazards model, where mathematical modelling allows researchers to keep the distribution of mortality rates as unspecified (Blossfeld et al. 2007; Carroll et al. 2000a, Chap. 7)—this is referred to as semi-parametric models. Based on Figure 11.8 we believe that a Gompertz distribution will be relevant to develop our regression models and

this specification has shown to provide a better explanation of mortality hazards dependent on age. Gompertz models show a slow early rise for mortality rates, with these rates rising as the populations ages (Carroll et al. 2000a, 286–287).

11.7.2 Testing Hypothesis 3

We stated earlier that mortality rates should increase with increases in distance from the Grand Mosque for some populations subsets and decrease for remaining populations, the results are shown in the table below. In our statistical analyses some variables were omitted due to collineraity.

Regression Model Analysis

Model 1 analyses the mortality rates for the entire hotel population where the increasing population level density improves the mortality hazard (reduces the mortality hazard) confirming the first-order effect (legitimation) of density:as density rises founding rates increase and mortality rates fall. Accordingly, we can determine based on the theory of density-dependence that the population is within the early phase of its tenure. This sits opposite to our initial assumptions of the hotel population, were we assumed it was a fully legitimated category. Additional, in Model 1 we were unable to obtain any confirmation of distance variable impacting the hotel population.

Model 2 analyses the mortality effects of 5-star hotels only with interesting insights. Firstly, mortality hazard has a negative and statistically significant relationship with *Distance from Grand Mosque*. Implying, as one approaches the Grand Mosque the competitive pressures create a tough competitive environment—this is consistent with the understanding of the Resource Partitioning theory, whereby the market-centre is extremely competitive. This is consistent with Hypothesis 3 and social intuition. Once a hotel sets up in the centre, it is unlikely that it will abandon its physical position as it has access to great appeal positions. Secondly, we notice a negative and statistically significant relationship with *Resources at Founding*. This is consistent with the role resources play for an organisation. As an organisation is able to acquire more resources it is able to reduce its mortality hazard, but increases for organ-

	(1) Hotel Population	(2) 5-Star Only	(3) 4-star only	(4) 3-star only
Constant	-31.74*** (4.631)	-25.33*** (6.348)	-33.71*** (8.727)	-40.62*** (12.08)
Distance from Grand Mosque	-0.141 (0.123)	-1.715*** (0.452)	-0.360* (0.183)	0.385 (0.241)
Resources at Founding	0.828 (0.594)	-3.822*** (0.998)	-4.717* (2.177)	1.221* (0.481)
Size Hotel Category	0.0000791 (0.000367)	-0.00240** (0.000774)	0.0219* (0.00938)	-0.00116** (0.000444)
Size Retail Category	-0.0000305 (0.0000329)	0.0000931* (0.0000380)	-0.000364* (0.000178)	
Hotel Density	-0.828* (0.354)			
Hotel Density^2	0.00607 (0.0112)			
Retail Density	-3.075 (1.906)			
Retail Density^2	0.556 (0.385)			
Sub-population Density Measures				
5-Star Density			-8.503* (3.507)	
5-Star Density^2			-0.434* (0.197)	
4-Star Density		2.124** (0.650)		
3-Star Density			-0.444 (2.746)	
3-Star Density^2			7.689* (3.500)	
gamma	0.0693*** (0.0105)	0.0661*** (0.0174)	0.0860*** (0.0224)	0.0571** (0.0183)
N	30	10	13	7
Chi^2	77.71	27.17	34.69	8.229
Log-likelihood	61.34	20.35	27.16	13.14

Standard errors in parentheses; * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 11.23: Coefficients for Mortality Analysis as per Hypothesis 3

isations unable to acquire sufficient resources, that is, resources are contested. Similarly, we see this as resources increase the mortality hazard reduces for our hotels which is expected since they are operating within the resource-rich market-centre. Thirdly, notice category-level sizes has an impact on the mortality hazard as well. The *Size Hotel Category* has a negative and statistically significant relationship with mortality hazards—as the size category expands the mortality hazard drops. This is possibly as hotels start to develop localised competitive forces and concentrate on competitive within their localised areas. Related to the competitive forces is the positive statistically significant relationship with 4-star hotel density—as 4-star hotels increase the mortality hazard increases. This shows the competitive relationships between these two sub-organisational forms. Additionally, *Size Retail Category* has a positive and statistically significant relationship with mortality hazard—as more retails are established it increases the mortality hazard, although this impact is relatively small. A plausible explanation is related with land availability, as retails use the land to develop it leaves little room for the establishment of hotels.

Model 3 shows the mortality rates for 4-star population only, and notice that its mortality rates also change with concerning *Distance from Grand Mosque* with improved mortality hazards as distance increases. This shows the 4-star hotels experiencing strong competitive pressures from the 5-star hotels and 3-star hotels. Furthermore, *Resources at Founding* has negative and statistically significant relationship with mortality hazards. Similar to the reasoning for the 5-star hotel; sufficient resources are available for organisations and thus reducing their mortality hazard. Interestingly, we see first evidence of competitive pressures for the 4-star hotel, as evidenced by *Size Hotel Category*. The broader category exerts significant pressures on the 4-star population. Similar to the 5-star population, the 4-star population also experiences benefits in a mutualistic environment. The *Size Retail Category* reduces the mortality hazard as the retail category expands. We also see strong evidence of competition in sub-populations improving the mortality hazard for 4-star populations. Plausibly, the 5-star and 3-star hotels develop competitive relations amongst themselves thus freeing the 4-star hotel from competitive pressures.

Finally, Model 4 was challenge in respect to variables due to the low number

of observations and issues of multi-collinearity, nonetheless we received some interesting results. Firstly, *Resources at Founding* have a positive and statistically significant relationships—as the resources increase so does the mortality hazard; why? Resources become already contested and thus organisations have to compete with each other to acquire more resources to reduce their mortality hazard. Secondly, *Size Hotel Category* has a negative and statistically significant relationship with mortality hazard—as category the expands the mortality hazards drop. A plausible reasoning is competition between the hotels becomes localised insulating the hotel from fierce competitive relations.

Causality Interpretation & Hypothesis Confirmation

In summary, we see that 5-star hotels have an increased mortality hazard due to their position in the market-centre despite sufficient access to resource and strong fitness with respect to appeal positions. Qualitatively, the nature of mortality is driven more by the changes in branding structures of the hotel. Once a hotel achieves its hotel star-rating, it is unlikely to change it, but the owners of the hotel experiment with various branding structures. The initial opening of a hotel in Makkah is usually with a well-known brand. After a few years in operation, the owners decide to move towards an unbranded orientation (hence, a mortality event) as they have acquired the relevant learning of managing and operating a hotel. 4-star are stuck in the middle, facing competition from the 3-star located in the periphery and the 5-star hotels, consistent with the qualitative evidence.

Interestingly, the density dynamics generated by the 5-star category improves the mortality hazard for 4-star, as it discharges some of the competition aimed at the 4-star category; which is in stark comparison to the qualitative evidence. Here, we think, the social dynamics as posited by organisational ecology provide an opportunity for 4-star hotels. The 3-star category does not fair better as well due to multiple offerings and various appeal positions, make it difficult to have high-fitness for respective hotels, consistent with the qualitative evidence. Pilgrims have a lot of options to choose from the 3-star hotel category and expend maximum energies in picking the *best* hotel.

In terms of hypothesis confirmation, we believe we have attained a partial confirmation of the hypothesis. Mainly, the relationship between mortality and *Distance from Grand Mosque* for 5-star and 4-star hotels as shown by Models 2 and 3, respectively.

11.7.3 Hypothesis 6

Now we analyse the impact of branding structures on mortality rates; Table 11.24 shows the results. Comparatively, branded hotels face stronger social pressures than unbranded hotels; as we elaborate below.

Regression Model Analysis

In Model 1, we analysed the mortality hazard of branded hotels only by including density variables of the hotel and retail populations. Interestingly, *Resources at Founding* have a positive and statistically significant relationship with mortality hazards. Plausibly, as more pilgrims visit the market, they interact with the producers to develop more and different offers, therefore causing unfit hotels to have an elevated mortality hazard. The legitimation efforts as captured by *Hotel Density* improve the mortality hazard for the branded population, similar to competitive story we developed earlier for 5-star and 4-star hotels. Although, it should be noted *Size Hotel Category* has a positive and statistically significant relationship for mortality hazards. Implying, as the category expands it does create a competitive environment within the branded population. Lastly, the retail dynamics as captured by *Retail Density* and *Size Retail Category* improve the mortality hazard for hotels. Although, we did not have sufficient data, but we believe this is the nature of complementary offers at play, which improve the positioning of branded hotels.

Model 2 builds upon Model 1, but includes density dynamics of unbranded hotels as captured by *Density Unbranded* and *Density Unbranded*^{2}. Interestingly, we see *Retail Density*^{2} increasing the mortality hazard for branded hotels, which was not witnessed in the first model. We believe, this dynamics exists as retails organisations compete amongst themselves it *may* create an environment whereby the retail associated with a hotel are less appealing. Hence, it increases

	Branded		Unbranded
	(1)	**(2)**	**(3)**
Constant	-60.75*** (12.26)	-109.0*** (24.49)	-39.01*** (8.969)
Distance from Grand Mosque	0.135 (0.172)	0.262 (0.155)	-0.270 (0.184)
Resources at Founding	1.515* (0.740)	1.518* (0.718)	0.0947 (0.240)
Hotel Density	-1.579** (0.503)	-2.052** (0.682)	0.569 (0.589)
Hotel Density^2	0.0175 (0.0122)	0.00645 (0.0164)	-0.0490* (0.0237)
Retail Density	-6.466* (2.620)	-12.74** (3.960)	
Retail Density^2	0.919 (0.483)	2.262** (0.693)	
Density Unbranded		3.017* (1.387)	
Density Unbranded^2		-0.536** (0.175)	
Size Hotel Category	0.00120* (0.000505)	0.00477*** (0.00138)	-0.000148 (0.000235)
Size Retail Category	-0.000108* (0.0000436)	-0.000169** (0.0000557)	
gamma	0.138*** (0.0289)	0.248*** (0.0568)	0.0750*** (0.0173)
N	17	17	13
Chi^2	67.38	83.41	34.32
Log-likelihood	45.95	53.96	27.47

Standard errors in parentheses; * p < 0.05, ** p < 0.01, *** p < 0.001

Table 11.24: Coefficients of variables for mortality hazard based on Brand as per Hypothesis 6

the mortality hazard of the hotel. Furthermore, the density dynamics from the unbranded population also exerts competitive pressures on the branded population thus increasing the mortality hazard. However, the competitive elements developed *within* the unbranded population serve as a mechanism to improve the mortality hazard for the branded population.

However, for unbranded hotels we only see statistical significance for the *Hotel Density*^{2} variables which captures the competitive pressures of the population. Theoretically, the competitive pressures are supposed to increase the mortality hazard whereas we have the opposite here. A plausible explanation is as unbranded hotels become widely available, they become a legitimated part of the population ecosystem, allowing to divert resource from the branded to unbranded as we saw in the context of Model 1.

Causality Interpretation & Hypothesis Confirmation

Qualitatively, the results of Model 1 show the "power" pilgrims have in determining the life chances. In our view, the branded organisations have a higher mortality hazards due to pilgrims becoming indifferent to the hotel's brand, but sensitive to the star-rating, as it is able to communicate the required level of service and *distance from the Grand Mosque*. This is shown by the pilgrims moving towards unbranded hotels (as seen in Model 2), and the market slowly moving towards unbranded hotels (as seen by Model 3).

In summary, we see opposite evidence for Hypothesis 6 based on the regression analysis and qualitative evidence. Branded hotels have a higher mortality hazard, as we also saw in Figure 11.8.

11.7.4 Hypothesis 9

Finally, we test our last hypothesis concerning mortality hazards. Earlier we analysed the resource partitioning theory with the perspective that such processes free up resources allowing the founding of organisations. Our analysis showed that resource partitioning is working at the population-level and not at the community level. Recall, we defined the generalist identity as 5-star, 4-star, and retails classified as community malls and above with remaining

organisation forms as specialist identities.

Regression Model Analysis

Since we do not have any retail mortality events, we will concentrate the analysis for detailed hotel mortality analysis; table 11.25 below shows the results. We see that the generalist identity (which is mainly 4-star and 5-star hotels) have a lowered mortality hazard because of *Distance from Grand Mosque* and *Hotel Density*. Primarily, due to the presence of the pilgrims, even though they are not significant, but they need to stay and will choose the closest option by default. Furthermore, for specialists we see some interesting results. Their mortality hazard has statistically significant and positive relationship with *Distance from Grand Mosque*, as these organisations occupy market locations with strong competitive forces. But the presence of pilgrims reduces their mortality hazard in the form to acquisition of resources, and as the category grows it offers multiple options and thus reducing the mortality hazard. This is consistent with previous analyses.

Causality Interpretation & Hypothesis Confirmation

The results are consistent with the qualitative understanding, with pilgrims preferring to stay in proximity to the Grand Mosque, and thus we see the reduced mortality hazard for the generalist identity, whereas the opposite for specialists. In regards to our hypothesis, we see opposite evidence.

11.8   Chapter Conclusion

Our results provide sufficient coverage to our social intuitions and developed hypotheses. We see *Distance from Grand Mosque* restricts schematisation efforts of organisations, and this impact is more pronounced for the 5-star hotel populations.

The hotel data from our sources allowed for a granular analysis of founding, allowing us to analyse founding rates by sub-population identity, and branding strategies. Such analysis was not possible for retail data. For the 5-star hotel

population we were able to establish their founding is in areas within proximity to the Grand Mosque; whereas, their mortality hazards are also greatest within those areas. 4-star proved to be a surprise for us, with their founding rates increasing with increases in distances, but their mortality hazards working in the opposite direction.

We were unable to receive significant confirmation concerning brands of the hotel, reinforcing the idea: pilgrims evaluate the hotel and its ratings, not the brands. However, we did notice significant founding of unbranded hotels in the near-centre and periphery market zones suggesting of the strong links between distance, branding structures, and marketing locations.

A significant finding from our analysis was the interaction of founding rates between the populations. We saw hotel's being founded first, with retail organisations following within 2 years, after which another hotel is established within 2 years.

We initially presumed organisational diversity to play a role in increasing founding rates, but we were unable to attain statistical significance.

Furthermore, we analysed resource partitioning from a founding perspective by analysing the founding of a *generalist* and *specialist* organisation. Based on this perspective, we were unable to establish strong identity-based resource partitioning dynamics, as sub-population dynamics seem to blur understandings at a community level.

Our mortality analysis was limited to the hotel population due to a low number of retail mortality events. We see specifics of origin and exit of a hotel have little influence on the mortality hazard—based on a constant hazard methodology. Similar to the founding story, 5-star hotels have a increased mortality hazard by being in the market-centre, with 4-star having persistently higher mortality hazard due to their confused identity structures. 3-Stars are still better than 4-star hotels, but not better than 5-star hotels. It is possible that within this sub-population we have multiple offerings and appeal positions not covered by our data sources.

In our branding strategies and mortality analysis we found pilgrims becoming statistically significant and raising mortality hazards for branded hotels. Unbranded hotels exert significant competitive pressures towards branded hotels,

as they provide an alternative appeal position. For unbranded hotels populations we see their rising density is a source of competition, with branded hotels unable to generate sufficient competition pressures to raise mortality hazards.

Our resource partitioning based on mortality analysis provides a consistent picture with founding rates. Generalist identity (4-star and 5-star) have a reduce mortality hazard. For specialists we see they have an elevated mortality hazard due to competitive pressures.

	(1) Generalist	(2) Specialists
Constant	-37.95*** (6.463)	2001.3 (1052.9)
Distance from Grand Mosque	-0.583** (0.203)	1.536* (0.706)
Resources at Founding	0.0988 (0.169)	-100.1* (50.18)
Size Hotel Category	-0.000135 (0.000276)	0.0877* (0.0439)
Size Retail Category	-0.00000520 (0.0000184)	
Hotel Density	-0.457* (0.233)	-185.9 (96.12)
Hotel Density^2	-0.00773 (0.00709)	4.480 (2.363)
gamma	0.0827*** (0.0150)	0.292** (0.110)
N	23	7
Chi^2	68.85	28.28
Log-likelihood	49.21	23.17

Standard errors in parentheses; * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 11.25: Coefficients of variables for mortality hazard based on identity as per Hypothesis 7.4.1.1

Chapter 12

Discussion

In this chapter we discuss the implications of our results and develop a deeper understanding of the community population. The discussion is structured around key themes: implications of schematisation, community appeal structures, complimentary effects, and mortality analysis. This is followed by an illustrative strategic planning evolution of *an organisation founded* in Makkah. Finally, we elaborate on the contribution of this effort to the broader academic community, and relevancy of community ecology as a discipline.

12.1   Schematisation

We have decided to structure the discussion in this section around key points to provide focus and relevance. The first section discusses the relationship between Distance from the Grand Mosque and identity dynamics. The second section elaborates the plausible scenarios for the relationships between vital rates and schematisation. The third section discusses, the evolution of schematisation for our population. Finally, we try to discuss the relevance of such information for real-estate practitioners.

12.1.1   Distance and Identity Dynamics

A key research strand within organisation ecology focuses on the role pf physical space in evolving organisations—referred to as spatial ecology (Lazzeretti

2006; Stuart et al. 2003; Wezel 2005, as examples). This research paper shares some similarities the role location plays in evolving organisations, albeit in the context of influencing organisational forms. We saw from our results that distance from the Grand Mosque impacts the schematisation requirements even though distance is not part of the codes developed by the Ministry of Tourism, the social dynamics restrict identity formation. Concentration of the 5-star hotels is primarily in the market-centre, with 4-star hotels occupying two market locations centre and near-centre, and 3-stars located on the periphery. The analyses proves the dominance of the audience group in embedding organisational features in the schematisation requirements of a category. Insomuch that the audience segment is able to dictate the physical location of an organisation's existence.

Following from the physical location, is the impact of the social codes in determining life-chances for organisation, as we saw that 4-star hotels have persistently elevated mortality hazards throughout their life as they sit between 5-star and 3-star hotel with a *confused* identity and appeal structure. If we analyse the existence of 4-star from a distance perspective, it suggests the range of for such hotels is considerable larger than the remaining organisations as we saw in Figure 11.4. Plausibly, the 4-star category demonstrates ambiguity, is it a "like a 5-star or like a 3-star"? In other words, the *identity space distance* of a 4-star hotel between a 5-star or 3-star is quite small whereas, 5-star and 3-star is quite large. Such issues arise if offers between 5-star and 4-star hotels share a large similarity. However, we were unable to determine if this existed as the data available did not allow for analysing offer structures over time.

Various research contexts have shown the impact spatial locations play on social dynamics (for example: Sorenson et al. 2000; Stuart et al. 2003; Wezel 2005; Wissen 2004). As we see the concept of identity at play—the basic minimal set of codes for organisation form, which in our research is the distance from the Grand Mosque. We see that the market-centre enforces an easy identity for 5-star with the near-centre and periphery locations enforcing identities for 4-star and 3-star hotels.

12.1.2 Schematisation and Vital Rates

Our analysis also highlights the influence spatial analysis can have on organisational mortality hazards. In a parallel study of spatial ecology the overall legitimation of a particular district gave rise to new organisational forms (Lazzeretti 2006). Our research bears some resemblance to the study as well, but the difference is the cause of legitimation is tied at two fronts. First, it is tied to the legitimation of the place, it being the centre of a faith that in our case is already well established. Secondly, the spill-over from this legitimation creates a strong environment to establish a wide-range of organisations, creating a strong link between a social activity and the emergence of organisations. Our research covered only two sets of population, but we believe, we would see similar results if other organisational categories were included in the research.

Our results show how schematisation dynamics create a conducive environment for the emergence of certain organisation forms precluding the existence of other forms. Therefore, schematisation requirements *can* determine the vital rates for certain organisations.

12.1.3 Evolution of Schematisation

It would be interesting to see the evolution of the social schematisation, that is at what point in time did distance play a significant role. However, given the data limitations we are unable to analyse this further. We presume that distance was not a factor in the very early part of the population (time around 1960-70s) but during the middle part it started to become a critical factor for pilgrims. Such analysis holds immense value for researchers as they are able to confirm the exact point a social consideration became a selection pressure, and identify the point for elevated mortality hazards.

An additional factor influencing the schematisation evolution is the pilgrim affluency. As the pilgrims became more affluent, the GoM's they had assigned to existing hotels began to decline. This forced hotels to reevaluate a new set of offer positions, thus creating turbulence in the hotel category. Overtime, pilgrim affluency may have affected the hotel schematisation requirements.

12.1.4 Relevance for Real Estate Practitioners

How does this information add value to real-estate practitioners? It adds an element during the strategic planning of such real-estate projects whereby specific location's influence viral rates. For example, King Abdul Aziz Road Project (recently re-branded as Massaar) is a 3.6 KM long stretch of road with various hotels, primarily located within the near-centre and periphery zones as defined above. The developers of the project seek to establish a wide-variety of hotels to serve the pilgrims as per Vision 2030 (Construction 2020). Based on the analysis we conducted, it will be extremely difficult for 5-star hotels to establish within this zone as the appeals positions would not match the distance from the Grand Mosque. But, a new element of appeal can help mitigate any potential mismatch. For example, if 5-star hotels establish themselves in this project, they can offer a private shuttle service to move pilgrims from their hotels to the Grand Mosque for their religious duties.

Such shifts in the strategy has several profound implications for the logics and management of strategy (Barnett 2008). Firstly, it changes the operating cost structures in comparison to similar rated hotels located in the centre. Presumably, these hotels operate within the same band of organisational size and price dynamics, ceteris paribus, the adding costs for the shuttle service may reduce their competitive advantage. As pilgrims, do not have quick accessibility in comparison to the market-centre hotels. The result is a reduced intrinsic appeal for such hotels located within the project (Carroll et al. 2021; Saloner et al. 2005). Secondly, it may lead to increased intricacy as the hotel is required to create a new organisation unit with resources to facilitate the movement of pilgrims from the hotel to Grand Mosque. Increased intricacy inhibits and slows down the organisational response as the environment shift, which in Makkah's foreseeable future is high diversity of appeal positions (Hannan et al. 2003a).

In summary, knowledge of schematisation makes a cognisant organisation and reflexive towards changes in audiences attitudes and preferences. Business managers can utilise such knowledge to understand competitive logic's for improved environmental fitness and alignment.

12.2 Illustration of Community Appeal Structures

The results in Chapter 11 enables us to illustrate the structure and composition of appeals in the city. The results demonstrated that 5-star hotels are located in proximity to the Grand Mosque (distances of $\leqslant 1.5km$) with the audience segment sensitive to changes in star-ratings and not branding structures. Furthermore, we see that 4-star display some flexibility by operating in two market locations: market-centre and near-centre. This dual market placement results in an elevated mortality hazard as predicted by the revised theories of organisational niches (Hannan et al. 2007).

However, we want to illustrate the composition of the appeal structures within the market. We follow our understanding of market locations and posit the market-centre to contain the maximum set of appeals, followed by the near-centre, and periphery having the minimum appeals. We believe that majority of appeal in the market centre is dominated by the 5-star hotel sub-category due to their offerings, with remaining portions left for the 4-star hotels. At this point readers in organisation ecology can recommend to using the more granular understating of resource partitioning to define the respective market locations and audience structures (Pólos et al. 2010). We purposefully avoided that as this thesis represents a first attempt in understanding the social forces for a previously unexplored market.

In the near-centre, 4-stars as a category have a smaller portion in comparison to 3-star and 2-star hotels, which we believe dominate this category with equal portions of the intrinsic appeal, in the absence of quality data. Similar to 4-star hotels, we believe 2-star hotels also face a confused identity and occupy near-centre and periphery locations.

Similarly, for retail, the appeal is also concentrated in the market-centre for two reasons: (1) the availability of hotels with a mutualistic offering pattern; and (2) ease for pilgrims to indulge in retail activities once they are have completed their religious rites. However, this appeal is capped due to lack of land availability now, but with initiation of the Roa Al-Haram project (PIF 2017) it *can* increase the intrinsic appeal. Another factor limiting the intrinsic appeal is the level of offerings, we believe the market-centre engages with audiences from

affluent backgrounds precluding the bulk of the pilgrim audience segments. We also believe that such appeals are dominated by regional malls that have a lettable area between 30,000 – 90,000 square meters.

In our opinion, the near-centre represents the regions of peak intrinsic appeal for the retail population. Readers in organisation ecology will notice this theoretical inconsistency as regions of peak appeal are located in the market-centre (Hannan et al. 2007). Since, we are defining market-locations along a metric dimension (distance) and analysing the entire community it enables us to have such appeal distributions. Mainly two organisations dominate this appeal position community malls and neighbourhood malls with lettable areas of 10,000 – 30,000 and 3,000 – 10,000 square meters, respectively. Finally, the periphery market has limited intrinsic appeal serving the needs of the immediate areas for pilgrims, where only the neighbourhood malls are operating. The visualisation below captures the distribution of appeals for our community population.
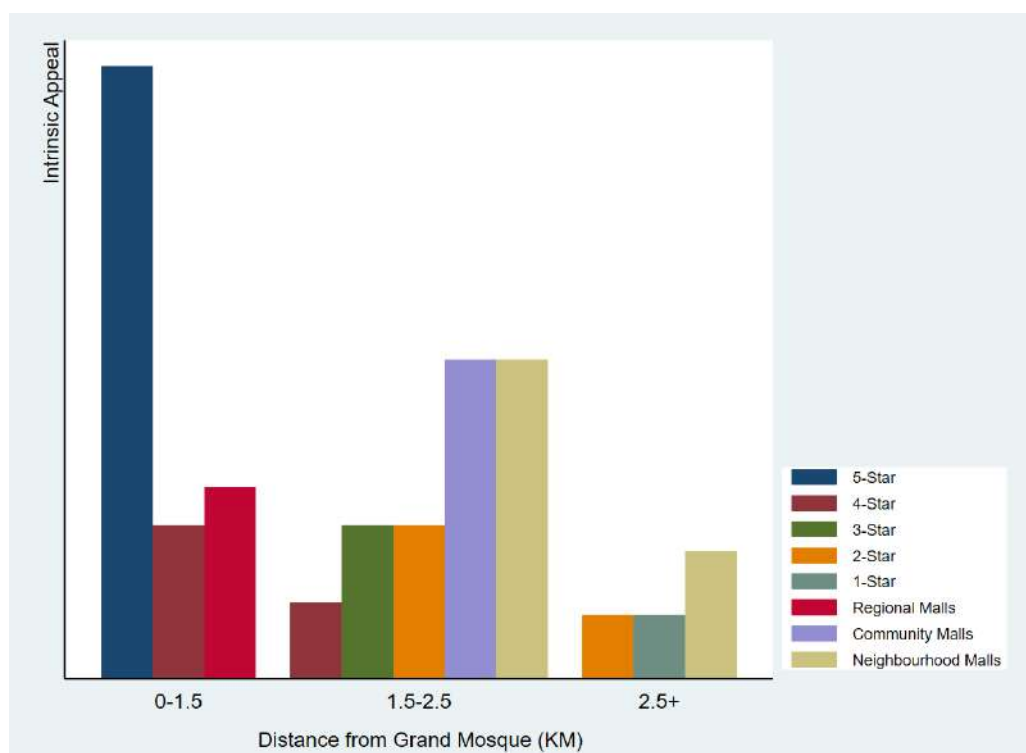
Figure 12.1: Distribution of Appeals for Hotel and Retail Population

It may appear we are trying to position real-estate organisation as helpless in developing their strategies, as elaborated in Chapter 7. Rather, we believe such knowledge before entering the market allows an organisation to develop organisational strategies that are: (1) better aligned to the prevailing market conditions; or (2) develop new offers leading to superior market alignment, provided such offers pass the test of legitimation. Furthermore, such analysis also confirms the key premise of organisational ecology—the social environment *selects* the best organisation.

12.3 Complementary Effects

Another important finding in our research is the cause-and-effect between the founding of our organisational populations. We saw in section 11.5.3 that hotels give birth to retails which give birth to another hotel. This result proves the concept of community ecology and interplay mechanisms. Our research context saw positive complementary effects—birthing of organisations. In the absence of data, we believe the establishment of the *first* hotel in a location imprints the offers for remaining organisations seeking to set-up themselves in that area (see Baron et al. (1998) for an example on imprinting). Remaining organisations are limited by the environmental circumstances to develop any novel offers because the immediate market is non-existent. This further reinforces our earlier point about a nested community appeal structure, but we are unable to identify it due to data limitations. Therefore, we might have seen a positive complementary effect, but we believe a negative effect *might* be at play, as well. Similar, researches have shown other non-complementary effects.

In the Italian banking industry, the founding of rural banks depressed the founding rates for popular commercial banks (Lomi 1995)) in stark comparison to the jewellery sector of Arezzo that saw a general increase of various organisations as the community was being established (Lazzeretti 2006). In both situations the community had some similarity between their identity patterns, but we see evidence of both positive and negative complementary effects. However, expansion of the community can increase the mortality hazard of organisations, as well. Negro et al. (2006) saw that in a community context, if an

organisation expands its category (by virtue of vertical integration) it is able to reduce its mortality hazard allowing organisations to mitigate any environmental uncertainty that may arise. Similarly, Kuilman et al. (2009) found evidence of cross-legitimation between banks with different ownership patterns.

Most of the research was conducted in the context of similar identity patterns, even the research of Negro and Sorenson had some degree of similarity between the population members. Whereas this study took dissimilar identity patterns and highlighting the importance of community ecology. We would like to note that future research efforts in organisation ecology may yield negative complementary effects.

Such information holds significant value for real-estate practitioners from the retail world. They will assess such information to assist their identification and selection of suitable land parcels to develop their retail project and determine the correct appeal and offering scenarios (Miles et al. 2015). For example, if the retail developer is opening up in a location with predominately 3-star hotels the offering of the retail should be structured as such, and similarly if it opens in proximity to 5-star hotels. Retails in proximity to the Grand Mosque offer appeal positions of diverse options and international brand that will appeal to the idiosyncrasies of pilgrim tastes, whereas as we extend outwards the tastes profiles dramatically change to suit towards lower price points.

12.4   Population Contrast

The results also provide insights into the composition of the sub-populations. The composition of the structured retail is quite minimal now, but we are aware of unstructured retail being quite dense and unavailability of data restricting our analysis. Comparatively, the hotel data has a wider availability allowing us to develop some good inferences regarding the underlying social dynamics. Presently, in our research the populations demonstrated extraordinarily stark contrast—that is crisp sets of conceptual understanding.

Reality is always fuzzy, and we presume that partiality is at play in our population. Recall, partiality blurs the boundaries between populations positioning them as part of a continuous whole. Partiality in the hotel populations

stems from the interplay between star and price dynamics, with unavailability of pricing data disallowing us to conduct an analysis.

Research has shown that category spanning can confuse audience groups which carries a penalty (Hannan et al. 2006; Hsu et al. 2005; Zuckerman 1999). We believe a similar social force is present within the hospitality population due to competition based on pricing dynamics. We believe that star ratings define range of possible price points for a hotel supplemented by the structure of the hotel's appeal. In some instances, we believe that hotels are able to *creep* into the price band of higher rated hotels because they have a strong appeal dynamic. For example, we have a 4-star hotel, with high similarity with an offering of 5-star hotel and great dissimilarity with 3-star hotel. Due to the 4-star high offer similarity, it is able to almost charge the same amount as the lower end of a 5-star hotel's price band. This mechanism creates a sense of partiality between the 4-star and 5-star hotels.

Such partiality confuses the audience and can create indifference between their choice of 5-star hotel or 4-star hotel. Furthermore, such partiality has very strong implications for structure of appeals with respect to their market locations. We were unable to test this intuition, but we firmly believe this is being experienced within the population. This also serves as a future research direction for our population.

12.5 Mortality Analysis

Unfortunately, we were unable to develop a detailed picture of mortality events in a community ecology context, primarily due to non-existent mortality events for retail. It would be interesting to see the interplay of mortality events, if any. Conversely, not witnessing any mortality events is also a plausible result. Unlike complementary founding structures due to symbiotic appeals, we conjecture that mortality patterns behave independently begging the question despite the exponential rise in pilgrim, why are we witnessing mortality hazards?

We believe, the answers lie within two parts. The first part is based on our results concluding mortality events are shaped by changing population densities—consistent with the theories of density-dependence. The second part of

the answers lies within the hotel offers and engagements patterns.

The primary objective for a hotel is to increase engagement with pilgrims to (1) extract the required level of resource to cover the hotel's cost structure, and (2) understand pilgrim taste idiosyncrasies to generate repeat visits. Evidence suggests that such understanding can lead to reduced mortality hazards for hotels (Ingram 1996). However, we conjecture that hotels are unable to meet the social specific appeal positions as they do not spend sufficient time in understanding pilgrim tastes preferences, as a consequence the pilgrim tastes drift that raises the mortality hazard for the hotel (Le Mens et al. 2015). Accordingly, hotels consider this a change event and close to develop a new offering to meet a new set of appeal positions, allowing hotel managers to decide if they want to open with a new brand or unbranded appeal position. Some may decide they are unable to remain competitive and eventually close down. However, it is important to note, category-level tastes drift if the audience segments are reevaluating the established schema. This understanding affirms our intuition of evolution of schematisation requirements.

12.6   Connecting the Dots

In this section we illustrate the full evolution trajectory for our community population by illustrating the operationalisation of the social mechanisms. We already know that pilgrimage to Makkah has been happening for a long time, and resources in the form of pilgrims have always been a part of Makkah. Over the years, we presume pilgrims' tastes were consistent—a basic provision for accommodation to perform religious rights. During the 1980, globalisation started to change the pilgrim's tastes, as they (must be traveling) to other destination in the world as well. Therefore, why cannot they experience the same level of offerings in the hotel and retail market of Makkah.

This probably gave rise to the first hotel around the 1980s with the establishment of the Hilton Towers Hotel, the first branded hotel at that time. Now, this was not the only hotel at that time, we presume, other similar type of accommodation organisations was present. But, they (possibly) lacked the conformance to the evolving schematisation requirements. Furthermore, we be-

lieve that records were not kept for such hotels, and even if they were kept accessibility is problematic to carry out quality research. However, as pilgrim legitimation increases for the taste profiles developed by Hilton Towers it gives impetus to entrepreneurs to mobilise towards the hotel industry in Makkah with their own tastes profiles, whilst at the same time mobilising the retail founding (Pontikes et al. 2017).

As hotels entered the population, the social schematisation of the hotels starts to take shape, both at the regulatory level and the audience level. At the former, it is about developing their respective star categories to demarcate the minimum required standards, while the latter develops a sense of tastes and importantly positioning them from the Grand Mosque. In parallel, hotels and retail continue to establish their presence, increasing the density of their respective sub-populations. Due to the social schematisation requirements, hotels get segregated among market-centre, near-centre, and periphery, with retails not experiencing such strict classification. However, at the same time retails tend to stick to areas where there is a presence of existing hotels, within a 2-year time period. Hotels in the market-centre enjoy the bulk of resources and are largely insulated from the competitive pressures that are happening in the broader market, but experience tought competitive pressure within their localised area.

Due to land unavailability in the centre for reasons such as occupancy by existing hotels or undevelopable land, hotels and retails are pushed in the near-centre and peripheral market locations. Near-centre hotels are still within commutable distance and develop offers that reflect that position, but face competition from market-centre and periphery locations. However, this dynamics *can* change if the Government decides to acquire private land for conversion into mega-development for the benefit of the private entrepreneurs.

We believe the underlying reasons could also be due to their offerings, as offerings within the near-centre and market-centre have a high degree similarity. But because of this, the offerings of the near-centre mismatch pilgrim requirements for two reasons: (1) pilgrims wanting to stay in the market-centre do so because of proximity to the Grand Mosque, which the near-centre do not provide, (2) we conjecture the price-points are similar to the market-centre thus requiring pilgrims to question the need to pay the same rate and stay further

away from the grand mosque. Thus they have a perpetually higher mortality hazard as seen in our results. Over time, hotels continually change their branding positions in an effort to understand pilgrim tastes and revitalise their operations. Retails tend to enjoy little negative spill over form the mortality hazards of hotels and enjoy a very positive symbiotic force.

12.7   Academic Contribution

Our research helps to add towards the growing literature of community ecology such as found in the beer industry (Carroll et al. 1991a,b), Italian Banks (Lomi 1995), microprocessor market (Wade 1995, 1996), instrument manufacturing (Audia et al. 2006), jewellery sector (Lazzeretti 2006), and movie production houses (Negro et al. 2006).

Most of the research took place in environments with similar identity patterns, allowing researchers to develop very strong social intuitions about selection mechanisms. Our research is novel in it that it applies the principles of community ecology in a dissimilar identity environment from an organisational perspective. Granted, that both the organisations operate within the domain of real-estate and there is a level of similarity due to domain homophily, but we believe the underlying organisational characteristic render them dissimilar.

Research in community ecology is broadly classified into the types of interaction effects taking place for the community of organisations. A significant research concentrates on the optional identity mechanism, whereby new organisation albeit related identity patterns develop a strong and opposite identity to the major organisational form such as microbreweries (Carroll et al. 2000c)—and example of amensalism. Audia et al. (2006) found evidence for more symbiotic effects in their research for instruments manufactures as information flowed between the sub-sets of organisations. Similarly, community ecology studies have found support for the ability of organisations to insulate themselves from competitive pressures (Negro et al. 2006). Our contribution with this research is to show he application of community ecology in environments of dissimilar identity patterns. Furthermore, our research shown a sense of commensalism between the hotel and retail populations. Whereas, the ho-

tel population did increase the founding rates for the retail, it had little to no impact on the mortality of retail organisations. We also saw that competition between the two population is somewhat insulated with very little spill over. Rather, the relation is a positive symbiotic force. Additionally, our research holds promise for policy makers to utilise methods of corporate demography in a community ecology context to unearth the dynamics that change populations (Carroll et al. 2000b).

Theoretical Rendition

We have purposefully refrained from providing a theoretical model of community ecology, within this paper. Community ecology requires more empirical applications to identify selection mechanisms in a community ecology context. Granted the basic fragments of organisational ecology apply, but are there any additional mechanisms we have yet to identify. The insufficient data still has not enabled to *confirm* the underlying causal mechanisms of the selection pressures we witnessed. For example, we *know now* 5-star hotels have an elevated mortality hazard by being in the market-centre, but we don't the underlying mechanisms. Was it the hotel offers, the retail offers or the prices points? Only time will tell through consistent research efforts the answers to such questions.

Chapter 13

Conclusion

Our humble research effort started with curiosity triggered by Vision 2030's objective of attracting 30 million pilgrims by 2030. We utilised the theoretical framework of organisation ecology and its long tradition of empiricism to quantify some selection measures facing organisations hotels and retail organisations of Makkah. The novelty in our research lies in the presence of dissimilar identity patterns of organisations.

The research program yielded several insights in community ecology with a relevant academic contribution. Firstly, we that despite the presence of regulatory schematisation, social codes have the ability to creep into the environment. *Distance from Grand Mosque* is one such variable restricting identity patterns. Secondly, we also saw, in a community ecology context, complementary vital rates. Initially, hotels are founded and within two years we see the formation of retail organisations. Thereafter, the formation of hotels takes another year. Thirdly, we saw the nature of complementary offers maybe at play at time improving the mortality hazard of secondary population, even if other factors are increasing it. Fourthly, we saw that identity-based resource partitioning operates more at the population level as opposed to the community population.

In a strategic management context, we see star-ratings hold significance on organisational vital rates. For real-estate practitioners this provides focus for their decision making, as brands are irrelevant for organisational viral rates. Furthermore, we see that hotels and retails can benefit from each other, to

develop a coherent strategy. Elements in the research program were still unfulfilled, namely the impact of diversity on influencing vital rates. We were unable to find any support for such insights.

13.1 A decade Old?

Readers in organisation ecology may state the following: most of literature (and knowledge) is 10 years old, what about the latest developments? Since then, in our view, most of the development of ecology's literature has centered around two broad themes: implications of organisational authenticity and formation dynamics of social categories; we review each one below and assess it applicability to our research context.

13.1.1 Authentic Perceptions

Authenticity is best understood as a signaling mechanism to show an organisation's "realness", which is achieved either through irrefutable facts (for example, purity of a diamond) or a social construction (Carroll et al. 2009). Research in authenticity concentrates on the latter of authenticity, its sociological construction requiring cognition, coherence, and agreement from audience members on an organisation's claim. There are four definitions of authenticity: type, craft, moral, and idiosyncratic; we review each briefly for the sake of completeness. Type is associated with authenticity embedded in the relevant organisational category, if an organisation is a member of the type, it is considered authentic. Craft authenticity is related concerns an organisation's preparation methods, whether the *expected* methods to develop an offer were followed. Moral authenticity takes a values based approach, if the values of an organisation are genuine (for example, retailers claiming for organic products). Lastly, idiosyncratic is focus on specifics (or quirkiness) of an organisation and its history (Carroll et al. 2009).

Strictly speaking, authenticity is not an organisational ecology fragment, but it has significant potential as a *selection mechanism* warranting inclusion. Why? The social construction of authenticity requires audience members attribute

level of authenticity to an organisation. The main implication arising from authenticity is the impact on valuations of an organisation's offer. Recall we mentioned during the form emergence process, an organisation's offer is created as part of categorical schematisation efforts, with organisation's endeavouring to attain high appeal through engagement efforts (Hannan et al. 2007, Chap.1-4). It is this process *invaded* by authenticity to establish a level of *authenticness* or (inauthenticness) for an organisation.

Kovács et al. (2014) analysed restaurant reviews to establish food authenticness and its impact on restaurant reviews contained on a popular review website. They controlled for quality by eliminating such words from the restaurant specific reviews, thus allowing the study's focus on authenticity and similar words. They concluded authenticity of restaurants increases the value of the restaurants—that is they received higher ratings on the review website. This research was further expanded by introducing notions of authenticity self-claim, with such restaurants receiving a lower valuation (Kovács et al. 2017). Furthermore, audience segments are likely to pay higher prices for offers considered as authentic (O'Connor et al. 2017). Additionally, the situation of authenticity gets complicated. In certain instances, audience members will ignore schematisation violations (either driven by law or audience) in favor of authenticity (Lehman et al. 2014). Implying, authenticity has the power to undo taken-for-granted assumptions of an organisational category.

A key question pertaining to authenticity was its longevity—that is, over time is authenticity persistent? Naturally, once an offer is established as authentic, it likely to become popular. Verhaal et al. (2020) analysed the implications of authenticity in light of two social responses: popularity and iconicity on the American beer brewing market. An offer becomes population if the associated audience base is heterogeneous, and iconicity propels an offer having a enduring recognition. Individually, these traits increase the appeal of an organisation's offer. In conjunction with authenticity, over time these traits become primary attributes of an offer, and thus the product losing its appeal.

Collectively, these studies show the *selective* power of such attributes on organisational offers. Importantly, such attributes require a social construction, attribution, and continuous evaluation. In our research context we believe

authenticity is present, but not related organisational offering. Instead, it is related to pilgrims adhering to an *authentic* pilgrimage experience. We believe pilgrims discharge minimal cognitive efforts on the authenticity of an hotel's offer. Rather, they occupy themselves to have an authentic pilgrim experience.

This doesn't preclude future research possibilities. We believe, future research should concentrate on understanding the features of an *authentic pilgrimage* and its compliance with community offers, and investigating strategies of changing community offers. We conducted initial research on potential data sources to address this question, but did not find anything meaningful. Booking.com is a relevant source to understand hotel offers, but we doubt the reviews are capturing the hotel's authenticity. Furthermore, the limits imposed by the thesis make it difficult to execute the research.

13.1.2 Categorical Formation

The second strand of research concentrates on the conceptualisation and taken-for-grantedness of organisational/social categories. This strand has garnered significant attention of researchers, and in some situations extended specific points of the HPC Framework. Research in this strand, generally, is classified into two distinct camps. The first camp analyses the dynamics of organisational categorisation. The second camp researches on the implications of category spanning. We briefly elaborate each track below, but refrain from conducting an extensive literature review. Our intent is to highlight the future research trajectory within organisation ecology and its relevancy to our research context.

The first track has garnered significant research attention with various aspects of the social categorisation process explicated. After the development of the HPC Framework, a key gap was understanding audience behaviour for label application. Koçak et al. (2009) show active audience members utilise elaborate language to describe their engaged categories, and are able to dictate usage of language to respective audiences due to their high involvement. Implying, the role of language and communication is central to developing social categories. This understanding was further refined by decomposing audience

behaviour into movements within a label and category features space. Categorisation volatility increases as audience members continually add/drop labels and/or features, forcing organisations to adopt labels closely matching their feature values. A contributing factor is when atypical organisations are members of a category and do not face penalties for categorical non-conformance (Pontikes et al. 2014). Audience members usually develop *typical* understanding of labels based on similar dynamics covered in the form emergence process (see Hannan et al. (2007, Chap. 1-4)). Organisational typicality is challenged if an organisation holds an existing label, but enters a market with a new label. In such situations, the organisation suffers lower appeal, taken-for-grantedness, Grade-of-membership (GOM), and lowers category contrast (Hsu et al. 2011). This work was extended by Kovács et al. (2015) by analysing implications of multiple label assignment. Their research context utilised labels assigned to books and restaurant cuisine, with two key conclusions: (1) books sticking to label conventions or spanning to high-contrast labels attracted higher appeal; (2) whereas, restaurants were unable to reap those benefits as they had a single label assignment.

This brings us to the second research track: multiple categories, whereby organisations claim membership in different categories. Research has shown such behaviour is detrimental to an organisation with reduced appeal, confusing audiences, and making engagement strategies precarious (Hsu et al. 2009; Kovács et al. 2015; Negro et al. 2010). However, if organisations span into categories with low contrast, is buffers them with the potential negative evaluations (Kovács et al. 2010), and in certain situations ambiguous labelling helps certain producers to thrive (Pontikes 2012). It may seem organisational categories are static concepts, as spanning is severely punished, requiring little room for "categorical innovation". This is far from true, categories do enter phases of reinterpretation with an active audience segment playing a pivotal role (Negro et al. 2011).

The research diversity in sociological categories prompted Hannan and colleagues to develop an integrated understanding of social categorisation. They opted to take a larger view of categorisation (and not just organisations) and its implications. This integrative effort is similar to HPC using logic and probabil-

ity to develop a richer understanding of sociological response to various events (Hannan et al. 2019).

Similar to authenticity, we believe the application of this research track for our research context, is difficult given the prevalent issues on data sources. We have not found a source detailed enough capturing categorisation processes. Furthermore, the current organisational dynamics are very crisp due to the strong regulatory changes for hotels, and lack of physical expansion for hotels precluding analysis on category spanning.

13.2   Concluding Recap

Before, we close out our document, we recap key points of this thesis. We review if the Research Questions are answered, the key insights developed by this research program, and finally the future research directions.

13.2.1   Research Questions Addressed

Recall we had four research questions at the beginning of the research program; Table 13.1 provides the question, and if this research program answered it or not.

Research Questions 1 and 3 sought to understand the impact of regulation, in the form of Vision 2030, on the community population. Furthermore, our data sources did not contain significant number for founding or morality events after the announcement of Vision 2030, which was done in 2016. Therefore, we have not fully answered the question due to insufficient data points. The number of years after the announcement (three) are insufficient to develop a meaningful statistical Poisson model as specified in our research methodology question. We developed a model for all founding events prior to 2016 comparing it to all events after and including 2016, with inconclusive results.

Research Questions 2 and 4 sought to quantify competitive and tastes pressures within the context of a statistically significant relationship. Firstly, our research has shown the community population is sensitive to changes in Distance from the Grand Mosque and the underlying operating mechanism for

Research Question	Description	Answered
Research Question 1	Given Vision 2030 creates an environment of increasing resources, would this lead to organisational diversity in the community, and its subsequent impact on vital rates of those forms?	Inconclusive
Research Question 2	How do we quantify competition and taste pressures along dimensions of location and distance?	Yes
Research Question 3	Does regulation impact organisational activity and vital rates?	Inconclusive
Research Question 4	Does a statistically significant relationship exists between our population sets?	Yes

Table 13.1: Recap of Research Questions with our answers

tastes and competition. Secondly, we demonstrated the impact of vital rates between the community population showing a statistically significant relationship does exist between our population sets.

13.2.2 Insights

Now we have reached the conclusion, we have to answer an important question to increase the research's relevance; what are the key insights developed through this research effort?; how our research compares with existing organisational ecology literature?

Schematisation Dynamics

Our research showed a common schematisation factor between two distinct populations acting as a selection pressure for the community ecology. The Distance from the Grand Mosque plays a significant role in determining the emergence of organisation forms as we saw 5-star hotels, 4-star hotels, community malls, and neighbourhood malls dominating these areas in proximity to the Grand Mosque. Our finding shares some similarities with the symbiotic legitimation identified by Ruef (2000), whereby similar identity patterns led to

the eventual emergence of the Health Maintenance Organisation (HMO). Suggesting, social forces (either selective or symbiotic) operate at a broader scale impacting multiple organisational populations. Researchers are required to develop an understanding, through close observation and interaction, to extract such nuances and establish required evidence for their existence.

Additionally, our research shares similarity with Ingram (1996), whereby hotels laid claim to various branding requirements. In our context, hotels were free to change their branding requirements throughout the observable period, but unable to change their hotel sub-category—given the physical impediments associated with changing a hotel. In stark comparison to Ingram's research, whereby mortality hazards were reduced for hotels laying claim to a well-known brand, ours provide contradictory evidence. Suggesting, the market in Makkah is more sensitive to hotel-star ratings and not a hotel's branding structure. However, this should not be taken as a general social force to the hospitality industry in Saudi Arabia. Instead, we believe, this maybe a unique trait of religious pilgrimage sites across the world.

Interactive Community

We also saw the interaction of vital rates between our population—a novel achievement in its own right. This analysis confirms the requirement to study organisational populations in a community context. At times observable social factors are a consequence of activities in another population, and not necessarily caused by the population under study. We saw complementary effects between two populations in the form of increasing founding rates co-located within bounded geographical position sharing similarities with researches of Lomi (1995), Lazzeretti (2006), and Audia et al. (2006). All of these researches highlight various social forces arising as a consequence of being located within a shared geographic space, and Makkah is no exception. We saw evidence of hotels legitimating an area providing a conducive environment for the formation of retail organisations leading to the founding of more hotel. Furthermore, we believe the offers of the hotel act as a selection pressure for retail organisations precluding the development of innovative taste profiles. Granted we stated

earlier organisations *must* achieve a high-level of taste matching to reduce their mortality hazard; however, tastes eventually drift and change (Le Mens et al. 2015)

Identity Confusion

Our research showed some identities *can* have a persistently elevated mortality hazard. As was the case for the 4-star hotel having a high mortality hazard throughout its life. Business managers can utilise such information while developing their strategies and thus improving the alignment of the newly formed organisation. Furthermore, our research showed the mortality was lowest for hotels with access to a good resource base and individuals density dynamics impacting the mortality hazard. However, we were unable to answer (fully) the underlying reasons for changes in mortality hazard. Our intuition leads us to believe such elevation in mortality are caused by changing audience tastes; however, insufficient data makes confirming this intuition impossible. Here we draw a parallel with the theories of categorical schematisation, as defined within the HPC Framework (Hannan et al. 2007). In our view, the audience segment has not fully developed a comprehensive feature set for 4-star hotels. They seem to be stuck with positioning with features as a 5-star hotel, but *don't want it* to be a 5-star—a paradoxical position. Consequently, when such hotels do open, they are faced with a tough task to legitimise themselves like a 5-star hotel but not charge the same prices as they are *not* a 5-star hotel. This creates a taste mismatch leading to such hotels closing down earlier than expected.

Organisational Niches

We saw limited evidence of resource partitioning. The market is divided between generalists and specialists, but this distribution is being enforced by sub-population dynamics as opposed to true resource partitioning. Similar to Carroll et al. (2000c), we believe the identity dynamics at the sub-category level are stronger in comparison to community-level identity patterns. It might be possible, in a community ecology context, the sub-population identity dynamics are *always* stronger—that is, it is difficult to establish a community level identity

definition as such processes are driven from individual population patterns. It might be possible, as we see much later the identity concept of a 'Silicon Valley' company (Baron et al. 2001; Hannan et al. 2006). But overtime, these organisations were nested into their respective social categories.

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The above present key insights by our research program. We strongly believe incorporating additional elements allows us to develop a stronger research paradigm and holistic understanding.

13.2.3 Future Research Directions

We understand there are some inherent limitations in our research, mainly access to good quality data. However, we believe there are future research directions we would like the community to explore. Our research did not cover any issues pertaining to age dependence. We believe coverage of such issues adds significant depth on understanding mortality patterns for the community population. Additionally, we would like to see the evolution of our organisation categories and the relation with vital rates giving researchers another perspective to understand changes in vital rates. Finally, we believe adding additional organisational categories to broaden the concept of community ecology will add significant understanding of selection pressures. For example, adding organisations such as restaurants, barber shops and other will provide a much richer understanding of community ecology.

The above represents the *standard* future research trajectories within organisational ecology. Earlier, we highlighted the lack of application of authenticity in our research context. We also, strongly believe, to conduct future research in understanding *pilgrim authenticity*. But, is the organisation ecology paradigm well equipped to enable such research? The answer is partial, at best. Organisational ecology can help to determine the components of an *authentic pilgrimage*–but strictly speaking the definitions of type, craft, moral and idiosyncratic are ill equipped to define *pilgrimage authenticity*. Therefore, we think an expansion of authenticity is required to accommodate authenticity driven from

a social activity, and not organisational activity. However, our assertion for redefinition of authenticity can be countered with a values-based definition of authenticity. In our context, it appears unlikely a hotel or retail endeavour to develop a values-based *pilgrim authenticity*, instead this definition is driven by the pilgrim experience in connection with the Grand Mosque. This requires significant thought towards the sociological concept of *pilgrim authenticity*. The work completed by Hannan et al. (2019) provides a suitable theoretical framework to analyse the *concept of pilgrim authenticity*.

Additionally, we can understand how hotels and retail organisations help to create *pilgrim authenticity* through their engagement patterns. Here the work completed by Liu et al. (2020) provides a good theoretical start. However, their research sought to understand engagement patterns for motorbikes, a clearly well-defined product. How would it apply to a service sector and how the offers of hotel and retails reinforce (or deteriorate) the concept of *pilgrim authenticity*.

Lastly, we believe the concept of pilgrimage should be analysed from a different lens. Currently, pilgrimage is being seen as a mechanism to generate economic growth for the Kingdom of Saudi Arabia. Here we expand into an unrelated domain: Islamic Moral Economy (IME). The essence of the IME founded in response to the growing Islamic Financial Intuitions operating in the Arabian Gulf. Researchers sought to identify the intrinsic meaning of *Islamic Economics*. IME posits the individual, in relation to his Creator, should attain a level of self-excellence and social benefit within a spiritual framework (Asutay 2012). In our view, pilgrimage should be evaluated from this context to develop a holistic understanding of *authentic pilgrimage*. Based on our anecdotal evidence, at times we have inquired form pilgrim operators, their motivation to run an operation despite their organisation unable to generate sizeable profits. Their response: we do it because it provides peace and a sense of gratification.

13.3 Concluding Thoughts

This research effort serves as an initial effort in applying community ecology principles on hotels and retail organisations of Makkah. As a first attempt it would be difficult to empirically test all possible scenarios, as some required

large and detailed data sets. Based on available data we were able to develop an initial view of the social dynamics of the the community—the role in *Distance from Grand Mosque* shaping schematisation efforts and vital rates. Based on available data, we tested core ecological fragments to develop an initial view of the community.

Upon the completion of this research project, we feel more intrigued rather than satisfied. We are left with a feeling to ask more questions, investigate new veins of research, and eventually, develop a theoretical rendition for community ecology. We hope to extend this research effort by expanding into dynamics of niche-width, age-dependence, and (hopefully) issues of categorisation.

Are we dogmatic in our approach? Certainly not, but we strongly and firmly believe the theoretical framework provided by organisational ecology is well suited to study complex social issues pertaining to organisations.

Organisational ecology may not have all the answers to decompose a complex social phenomenon we elaborated within this thesis. The challenge of a permanent and temporary audience segment represents a challenge within organisational categorisation processes as elaborated by organisational ecology. We are unable to determine the impact of the temporary audience segment, which is large and repetitive, on the offer construction of hotel and retails. Conversely, hotels and retails may have pivoted and develop offers *only* for pilgrims and the resident population are peripheral tastes profiles, which some organisation *may* engage. In this regard, more theoretical work may be needed to understand the implication of audience segment permanency.

Related to the audience segments are their belief structure and their impacts on schematisation efforts. Most theory on organisation ecology relies on an underlying belief structure of audience consumption. However, in our context, the belief structure is more spiritual, and its impact is partially understood within organisation ecology. Such spiritual matters can change the taste profiles of pilgrims when they are *in* Makkah, but revert back to another profile when they return back to the their native countries. The question is: what is the *real* taste profile for Makkah? Given organisation ecology is time and space bound, it relies on the social activities taking place at *a* particular time and space. Therefore, if those tastes manifest themselves during the pilgrimage, for

organisation ecology, *those* are the tastes which need to be understood.

Lastly, organisational ecology has provided *a* lens to analyse the social dynamics in Makkah. Equally, the domain of economics have multiple theoretical strands which can be employed to analyse Makkah. For example, lenses of political economics, Islamic Moral Economics, and Islamic Finance, are all valid to provide a deeper and greater understanding. Finally, we hope that this humble research program contributes to the growing knowledge of community ecology.

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Appendix A

List of Ministry Of Tourism's Requirements

We have provided four types of schema used by the Ministry of Tourism to define tourist accommodation categories: Hotel-General, Hotel-Makkah, Furnished Residential Unit (FRU)-General, and FRU-Makkah.

A.1 Hotel-General Schema

General Hotel Licensing Classification List

No.	Main Elements (service - facility)	Item Number	Regulatory Requirements	Description of Requirements	Five Stars	Four Stars	Three Stars	Two Stars	One Star
				Items with several requirements (or) with only one requirement to be assessed for score while leaving the remaining requirements without assessment					

General Hotel Licensing Classification List

No.	Main Elements (service - facility)	Item Number	Regulatory Requirements	Items with several requirements (or) with only one requirement to be assessed for score while leaving the remaining requirements without assessment — Description of Requirements	Five Stars	Four Stars	Three Stars	Two Stars	One Star
		87		Use water saving fittings installed in all the taps of lavatory and basins					
		88		Use power saving lamps (LED, Fluorescent or compact lamps)					
		89		Use motion sensor lighting for toilets					
		90		Provide water saving awareness signs					
		91	License	Ceilings, floors, walls, furniture and equipment in the toilets must be in good condition and defect free					
		92	License	General cleanliness (ceilings, floors, walls, furniture and equipment) in the toilets & its components					
6	Elevators & Stairs	93	License	Provide one elevator for every 50 rooms in facilities of (3) stories (2 stories plus ground floor) a warning sign (elevators shall not be used in case of emergencies) shall be placed beside the external doors of the elevator in Arabic & English					
		94		Each elevator shall cover an area ≥ (3m²)					
		95		Each elevator shall cover an area ≥ (2m²)	Class	Class			
		96		Each elevator shall cover an area ≥ (1m²)			Class	Class	
		97		Provide at least one mirror wall inside the elevator					
		98		Elevator or stairs interior include luxurious installations and decorations					
		99		Elevator can be operated with the room key card					
		100	License	Elevators must be equipped with required fittings for people with special needs, as follows: the internal & external switch board shall be positioned at a hight of (50 cm) & shall be equipped with Braille Lettering, the minimum width of the elevator serving people with special needs, an audio-visual lighted panel inside & outside the elevator indicating the floor the elevator stops.					
		101	License	Absence of undesirable odors					
		102	License	Provide sufficient lighting in elevators and stairs					
		103		Use power saving lamps (LED, Fluorescent or compact lamps)					
		104	License	All elevators are provided with intercom connecting to the reception (emergency)					
		105	License	Elevator and stairs (ceiling, floors, walls, and lights) are in good condition and defects free					
		106	License	General cleanliness of elevators and stairs (ceilings, floors, walls, lighting) including its related components					
		107		Provide at least one elevator designated for support services	Class	Class	Class		
7	Corridors	108		Minimum width of corridors is 1.80 m					
		109	License	Minimum width of corridors is 1.50 m					
		110		Provide luxurious and high density carpets for corridors	Class	Class			
		111		Provide good quality carpet for corridors			Class		
		112	License	Provide suitable flooring					
		113		Provide a room in each floor designated for the janitor trolley and tools	Class	Class			
		114	License	Provide guiding signs indicating (floor number, directions and room numbers) in front of elevators and in corridors					
		115		Provide a shoe polisher in each floor nearby elevator	Class				
		116		Provide distinctive and artistic decorations and paintings including natural plants in corridors	Class				
		117		Provide an intercom in a clear location	Class	Class			
		118		Comfortable seats near the elevator on each floor	Class	Class			
		119		Central cooling / heating AC system	Class	Class			
		120	License	Cooling / heating AC system					
		121	License	Absence of undesirable odors					
		122	License	Provide sufficient lighting					
		123		Use power saving lamps (LED, Fluorescent or compact lamps)					
		124		Use motion sensor lighting for comforting parts of the corridors					
		125	License	Provide waste baskets in front of each elevator on each floor					
		126	License	Corridors (ceiling, floors, walls, and lights) are in good condition and defects free					
		127	License	General cleanliness of corridors (ceilings, floors, walls, lighting) including its related components					
8	Rooms	128		Room space is more than (30 m²) including the toilet and corridors					
		129		Room space is more than (24 m²) including the toilet and corridors	Class				
		130		Room space is more than (20 m²) including the toilet and corridors		Class			
		131		Room space is more than (16 m²) including the toilet and corridors			Class		
		132	License	Room space is more than (14 m²) including the toilet and corridors					
		133	License	Provide several non-smoking rooms					
		134		Use traditional handcrafted products in room furniture and decoration					
		135	License	Provide a separate entrance for each room or suite with clear numbers					
		136		Provide soundproofing in each room	Class	Class			
		137	License	Provide peepholes on the entrance doors of all the rooms					
		138		Provide an electronic card locking systme	Class	Class			
		139	License	Provide an internal hand lock for privacy					
		140		Provide an additional internal lock	Class	Class	Class		
		141		Provide an illuminat sign by the external door with an internal control indicating (do not disturb - make up the room)signs.					
		142	License	Provide cards with (do not disturb - make up the room) signs on the doorknob from the inside					
		143		Provide creative room design with artistic touches (gypsum or wood decorations, wall paper)	Class	Class			
		144	License	Provide suitable room designs					
		145		Provide high quality carpet or rugs for covering the room floor. If marble, ceramic, or wood is used, provide luxurious rugs beside the bed	Class	Class			
		146		Provide artistic paintings on the walls	Class	Class			
		147		Provide a balcony separated from the room with heatproof and soundproof glass (or double glass) window allowing natural lighting					
		148		Provide heatproof and soundproof glass (or double glass) window allowing natural lighting	Class				
		149	License	Provide a glass window for every room					
		150	License	Provide blackout curtains					
		151		Provide high quality curtains	Class	Class			
		152	License	Provide suitable curtains					
		153		Minimum size of single beds is (190x120 cm), double beds is (200x200 cm)	Class				
		154		Minimum size of single beds is (190x100 cm), double beds is (200x180 cm)		Class			
		155	License	Minimum size of single beds is (190x90 cm), double beds is (200x160 cm)					
		156		Provide luxurious bed mattresses with a minimum thickness of (30 cm)	Class				
		157		Provide bed mattresses with a minimum thickness of (20 cm)		Class			
		158	License	Provide suitable bed mattresses					
		159		Provide complete high quality sets of bed sheets including; mattress cover, fitted and flat sheets, and one bed comforter of white or of light color	Class	Class			
		160		Provide good quality sets of bed sheets including; one mattress cover, one fitted sheet, one pillow case and one blanket of white or light color					
		161		Provide (2) high quality pillows	Class	Class			
		162	License	Provide suitable pillow per guest					
		163		Provide additional (pillow and blanket) in the closet	Class				
		164		Provide a list of pillows (minimum 3 types) to be provided upon request	Class				
		165		Provide (2) night stands for each double bed	Class	Class	Class		
		166		Provide one night stand for each single bed (in the twin rooms) or one night table between the two beds.	Class	Class	Class		
		167		Provide (2) high tech telephones indicating hotel services (on the device) in Arabic and English	Class				
		168		Provide a telephone device in each room		Class	Class	Class	
		169		Provide (2) armchairs/coaches & a table	Class				
		170		Provide (1) armchair/coache & a table	Class	Class	Class	Class	
		171		Provide high quality closet with internal lighting, shelves and (5) matching hangers per guest (3) of which are fitted with clamps		Class	Class		
		172		Provide high quality closet with (5) matching hangers per guest (3) of which are fitted with clamps		Class			
		173	License	Provide a closet with shelves and hangers					
		174		Provide safety boxes in all rooms of a space that accommodates a cell phone size 15 inches	Class				
		175		Provide safety boxes in all rooms		Class	Class		
		176		Provide an electrical socket inside the safety box					

General Hotel Licensing Classification List

No.	Main Elements (service - facility)	Item Number	Regulatory Requirements	Description of Requirements	Five Stars	Four Stars	Three Stars	Two Stars	One Star
				Items with several requirements (or) with only one requirement to be assessed for score while leaving the remaining requirements without assessment					
				Provide (2) drinking glasses and (2) juice glasses of high quality	Class				
			License	Provide (2) drinking glasses					
				Provide 24 hours laundry services (regular / express)					
				Provide 12 hours laundry services (regular / express)	Class	Class			
				Provide laundry service			Class		
				Provide a laundry price list (regular - express)	Class	Class	Class		
				Provide a lockable fabric laundry sack per guest	Class				
				Provide a suitable laundry sack per guest			Class	Class	
				Provide flawless iron and ironing board	Class				
				Provide flawless iron and ironing board upon request		Class	Class		
				Provide fabric slippers per guest	Class	Class			
				Provide shoes basket for requesting polish					
				Provide shoe polisher per guest	Class				
				Provide a shoe horn					
				Provide a high quality full body length mirror	Class	Class			
				Provide a high quality shelve for luggage (fixed / mobile) separate from closet	Class	Class	Class		
				Provide a dresser of unique design and high quality fitted with drawers, a mirror and a chair	Class	Class	Class		
				Provide a sewing kit (needles, threads, buttons etc)					
				Provide an excellent stationary (mail envelopes, paper, pens etc)	Class	Class			
				Provide a questionnaire for the level of satisfaction of hotel services					
				Provide a complete guide of services of the hotel including prices in Arabic and English, high quality printed and free from defects	Class	Class	Class		
				Provide room service menu of food and beverages in room including prices in Arabic and English separate from room guide, high quality printed and free from defects	Class	Class	Class		
				Provide a flat TV screen with a minimum size of 40" including a remote control and a channel displaying the hotel services	Class	Class	Class		
				Provide a flat TV screen with a minimum size of 32" including a remote control and a channel displaying the hotel services	Class	Class	Class		
			License	Provide a new flat TV screen					
				Provide a minimum of 30 TV channels, 5 of which at least are Saudi channels (following the rules and regulation notified by relative authorities)	Class	Class			
				Provide the Saudi channels pack plus four other channels (following the rules and regulation notified by relative authorities)			Class	Class	
				Provide two unused electrical sockets beside the bed and desk	Class				
				Provide high quality wireless internet (WiFi) and connection cables	Class				
			License	Provide high quality wireless internet (WiFi)		Class			
				Provide a high quality prayer mat					
				Provide King Fahad Print Press Holy Quran (upon request)					
				Provide a small refrigerator	Class	Class	Class	Class	
				Provide juice and drinks	Class				
				Provide a collection of candy, nuts and biscuits	Class				
				Provide a hot drink machine	Class	Class			
				Provide a kettle			Class		
				Provide sugar and a collection of tea and coffee (supplied daily and free of charge)	Class	Class			
				Provide bottled drinking water (free of charge - daily - one bottle per guest)	Class	Class			
				Provide soft tissue for hands and face (2 units)	Class	Class			
			License	Provide tissue for hands and face (1 unit)					
			License	Provide Qibla direction poster in clear place					
				Provide free local newspapers for each room every morning	Class				
				Provide lighting control switches for lights in the room and toilet beside bed					
				Provide an ash tray (if smoking is permitted)					
				Provide luminous bedside lighting	Class				
				Provide suitable bedside lighting		Class	Class		
				Provide high quality movable lamps beside the bed for reading					
				Provide a high quality ground lamp	Class				
				Provide a suitable ground lamp					
				Provide special lighting for the entrance	Class	Class	Class		
				Provide lighting on the dresser	Class	Class			
				Cooling / heating AC system (central)	Class	Class			
				Cooling / heating AC system (split)			Class	Class	
			License	Cooling / heating AC system					
				Provide door stops on room doors	Class	Class	Class		
				Use power saving lamps (LED, Fluorescent or compact lamps)					
				Provide energy efficiency labels on electrical devices (fridge & air-condition)					
			License	Provide an exit plan on the room door, internally, in case of emergency					
			License	Provide smoke detectors in each room					
			License	Provide defect free and unique waste basket					
			License	Ceilings, floors, walls furniture and equipment including its related components of room are in good condition and free from defects					
			License	General cleanliness of the room (ceiling, floors, walls, furniture and equipment) and all its related components					
5	Room Toilets			Toilet space more ≥ (5m²)					
				Toilet space ≥ (4m²)	Class	Class			
			License	Toilet space at least (3m²)					
			License	High quality doors ensuring complete privacy					
				Covering toilet walls and floors with high quality marble					
			License	Covering toilet walls and floors with ceramic					
			License	Continuous supply of hot and cold water					
				Telephone in toilets	Class	Class			
			License	A shower with a minimum space of 90x90 cm with a partition or suitable curtain					
				Suitable handles in the shower area	Class	Class	Class		
			License	A non-slip floor in the shower					
				Stainless steel shelve for towels	Class	Class	Class		
				Two (2) clothe hooks	Class	Class	Class		
			License	High quality toilet seat with lid					
			License	Hand hose (shattaf) beside the toilet or bidet					
			License	Two (2) high quality toilet paper rolls are available					
			License	Hand wash basin					
				Mirror with light					
			License	Provide a mirror					
				Provide a high quality rack for toiletries	Class	Class			
				Shaver socket beside the mirror	Class	Class	Class		
				High quality digital scale	Class				
				Magnifying mirror with lights	Class				
				Hair dryer	Class	Class			
				Thick and fine cotton towel (shower) per guest minimum size (140x70)	Class	Class			
			License	Thick and fine cotton towel (shower) per guest					
				Thick and fine cotton towel (hand) per guest minimum size (40x70)	Class	Class	Class		
				Thick and fine cotton towel (face) per guest minimum size (30x30)	Class	Class	Class		
				Thick towel for toilet floor minimum size (50x70)	Class	Class			
				Fine cotton robe per guest	Class				
			License	Fine hand and face tissues					
				High quality toiletries and personal care products	Class	Class			
				High quality packed soap per guest	Class	Class	Class		
			License	Packed soap per guest					
				High quality shower kit per guest	Class	Class	Class		

General Hotel Licensing Classification List

Items with several requirements (or) with only one requirement to be assessed for score while leaving the remaining requirements without assessment

No.	Main Elements (service - facility)	Item Number	Regulatory Requirements	Description of Requirements	Five Stars ★★★★★	Four Stars ★★★★	Three Stars ★★★	Two Stars ★★	One Star ★
		275	License	Shower set per guest					
		276		High quality hair shampoo per guest	Class	Class	Class		
		277	License	Hair shampoo per guest					
		278		High quality hair conditioner per guest	Class	Class			
		279		High quality body lotion per guest	Class	Class			
		280		Shower cap	Class	Class			
		281		Dental kit per guest upon request	Class	Class			
		282		Shaving kit per guest upon request	Class	Class			
		283		Cotton buds	Class	Class			
		284		Comb per guest	Class	Class			
		285		Two (2) water glasses	Class	Class			
		286		A fixed Retractable laundry clothes line					
		287	License	Absence of undesirable odors					
		288	License	General lighting for the toilet					
		289		Use power saving lamps (LED, Fluorescent or compact lamps)					
		290		Install water saving tools in flush box, toilet hand hode, hand wash basin and shower					
		291	License	Flip cover waste basket					
		292	License	Toilet ceilings, floors, walls, toilets and fittings are free from defects					
		293	License	No water leakage and rust in toilet water fixtures or connections					
		294	License	General cleanliness (ceilings, floors, walls, lavatory, toilet and fixture) including all related items					
10	Rooms for People with Special Needs	295	License	Designate 1% of rooms for people with special needs (minimum one room of total rooms) based on the comprehensive access guide					
		296	License	This room should be in the ground floor or nearby ground floor (grade based on proximity to/from ground floor)					
		297	License	Minimum room space (standard room) is 18m² including toilet and corridor					
		298	License	Minimum toilet space is 5m²					
		299	License	Room door handles at a hight of 90-120 cm					
		300	License	Minimum width of the room's door is 1 m					
		301	License	Additional lock and peepholes at a hight of (90-120cm)					
		302	License	All floors are fitted with ceramic or marble and with no use of carpet					
		303	License	Lighting switches and sockets at a height of (90-120cm)					
		304	License	Bed height is 45-55 cm					
		305	License	Dresser mirror at a maximum height of (90cm) from ground					
		306	License	Emergency button in telephone set					
		307	License	Cloth hooks at a maximum height of (140cm)					
		308	License	Sliding (or outward opening) toilet door with minimum width of (1m), a handle at a height of (90-120cm) and no ground sills between the toilet and the room					
		309	License	Designate (120x150cm) of the bathroom for the toilet seat at a hight of (43-48cm) fitted with a hand hose and minimum space of (1m) in front of the chair					
		310	License	All toilet handles, accessories and sockets at a height of (90-120cm)					
		311	License	Hand wash basin width of (50cm) and at a height of (72-74cm) including (50cm) long tab					
		312	License	Handles for assisting toilet user (vertical and horizontal) beside each (toilet seat, hand wash basin and shower area)					
		313	License	Non slip Floors					
		314	License	Shower area at the toilet ground level and shower head at a height of (120-150cm)					
		315	License	All personal accessories and toiletries are available in toilets					
		316	License	Suitable ventilation and lighting are available in room and toilets					
11	Rooms for People with Hearing & Vision Disabilities	317	License	Designate 1% of rooms for hearing and vision disabled (minimum 1 room of total rooms)					
		318	License	Room bell, alarm sounder and telephone tone alerts persons in room and hotel (audibly and visually)					
		319	License	Vibrating alarm connected to the room's bell and emergency alarm, it shall be placed under the pillow for guests with hearing disabilities					
		320	License	Provide a device with display screen indicating hotel guide and its services using audio and Sign language, such device switches shall be marked in Arabic, English, Pictorial and Braille					
		321	License	Hotel guide and related services is available in Arabic, English and Braille					
		322	License	Braille Language added to all guidance sentences in the room					
		323	License	Braille Language added to all toilet fixtures, toiletries and accessories					
		324	License	Provide all personal accessories, toiletries and tools in toilets					
		325	License	Suitable ventilation and lighting are available in room and toilets					
12	Coffee Shop	326		Provide a coffee shop operating 24/7					
		327		Provide a coffee shop operating a minimum of 16 hours a day	Class				
		328		Provide a coffee shop operating a minimum of 12 hours a day		Class	Class		
		329		Provide a menu for the coffee shop written in Arabic and English indicating prices (higher score if it is written in Braille Language)	Class	Class	Class		
		330		Provide (4) types of pastries	Class	Class			
		331		Provide (4) types of desserts	Class	Class			
		332		Provide (4) types of coffee	Class	Class			
		333		Provide (4) types of tea	Class	Class	Class		
		334		Provide (4) types of fresh juice	Class	Class			
		335		Provide (4) flavours of icecream					
		336		Food heating device	Class	Class			
		337		A refrigerator for foods and drinks	Class	Class	Class		
		338		Coffee maker	Class	Class	Class		
		339		Utensils and cups are in good condition and free from defects, matching, luxurious and fancy	Class	Class	Class		
		340		All employees in uniform	Class	Class	Class		
		341		All employees shall be wearing ID badges in Arabic/English	Class	Class	Class		
		342		Provide a special hand wash basin designated separately from sinks, it shall be operated automatically without using hands					
		343		Hand wash basin	Class	Class	Class		
		344		Water saving tools are installed on the taps of the hand wash basin					
		345		Fabric towels shall not used for cleaning, paper towels shall be used istead	Class	Class	Class		
		346		Hand sanitizer	Class	Class	Class		
		347		Disposable gloves	Class	Class	Class		
		348		Foot operated waste basket in preparation area	Class	Class	Class		
		349		Use power saving lamps (LED, Fluorescent or compact lamps)					
		350		Ceiling, floors, walls, furniture and equipment in the coffee shop and its related components are in good condition and free from defects	Class	Class	Class		
		351		General cleanliness (ceiling, floors, walls, furniture, equipment) in the coffee shop and related areas	Class	Class	Class		
13	Restaurants	352		Provide (3) or more restaurants					
		353		Provide (2) restaurants	Class				
		354		Provide a minimum of (1) restaurant		Class	Class		
		355		Main restaurant space is more than (150m²) for each (100) rooms	Class				
		356		Main restaurant space is between (100-150m²) for each (100) rooms		Class			
		357		Main restaurant space is not less than (50m²) for each (100) rooms			Class		
		358		Restaurant entrance is clear and restaurant name board is present	Class	Class	Class		
		359		Provide a sign indicating operating hours outside the restaurant entrance in Arabic and English	Class	Class			
		360		Provide a counter and an employee to welcome guests at restaurant's entrance	Class				
		361		Floors shall be covered with good and cleanable material					
		362		Breakfast buffet shall last at least for (4) hours daily	Class	Class			
		363		Breakfast service			Class		
		364		Dinner & lunch service	Class	Class			
		365		The restaurant shall be fitted with high quality luxurious chairs and tables to serve main meals (breakfast, launch and dinner)	Class	Class			

General Hotel Licensing Classification List

No.	Main Elements (service - facility)	Item Number	Regulatory Requirements	Description of Requirements	Five Stars	Four Stars	Three Stars	Two Stars	One Star
				Using cohesive high quality serving utensils each signed by manufacturer stamp	Class	Class			
				Using appropriate cohesive serving utensils			Class		
				Unique and creative decorations	Class				
				Suitable decorations		Class	Class		
				Portable and defect free partitions for families upon request					
				The food display area (Buffet) shall include hot and cold food sections, food warming equipments shall be used with attached lids	Class	Class	Class		
				Provide suitable protection covers for cold food (food protection from spill and sneeze)	Class	Class			
				Toilets nearby restaurant	Class	Class			
				Cooling / heating AC system (central)	Class				
				Cooling / heating AC system		Class	Class		
				Use power saving lamps (LED, Fluorescent or compact lamps)					
				All employees in uniform	Class	Class	Class		
				All employees shall be wearing ID badges in Arabic/English	Class	Class	Class		
				Ceiling, floors, furniture and equipment in restaurants and its related areas is free from defects	Class	Class	Class		
				General cleanliness (ceiling, floors, walls, furniture, equipment) in restaurants and related areas	Class	Class	Class		
14	Public Facilities			Provide a prayer area at suitable location	Class	Class			
			License	In case there are no mosques nearby (a minimum distance of 5 minutes on feet), a prayer room shall be provided					
				An ablution facility beside the prayer area	Class	Class			
				Provide a business center at a suitable location	Class				
				Designate an employee for helping users of the business center while placing a board at the entrance indicating operating hours	Class				
				The business center includes (2 or more desks) fitted with (computer, printer, fax, photocopy, scanner and internet connection)	Class				
				Main multi-purpose hall is available of total minimum space of (130m²) for each (100) rooms	Class				
				Additional multipurpose hall is available of total space (70m²) for each (100) room					
				Provide open areas of space of (50m²) fitted with natural trees, plants and flowers and suitable tables and chairs					
				Traditional Saudi handcrafted products are the hotel's official souvenirs					
				If the hotel is not directly connected to a mall, provide a gift shop					
				Barber shop					
				Cooling / heating AC system (central)	Class				
				Cooling / heating AC system		Class			
				Absence of undesirable odors	Class	Class			
				Provide adequate lighting at all public facilities	Class	Class			
				Use power saving lamps (LED, Fluorescent or compact lamps)					
				Use motion sensor lighting for partial lighting control in public facilities (prayer area, halls, business center)					
			License	Ceiling, floors, walls, furniture and equipment in public facilities and its related areas is free from defects					
			License	General cleanliness (ceiling, floors, walls, furniture, equipment) in public facilities and related areas					
			License	Provide sufficient number of waste containers					
15	Recreational Facilities			A GYM covering an area of about (100m² or more) fitted with minimum (10) sport equipment					
				A GYM covering an area of about (70-100m²) fitted with minimum (6) sport equipment	Class	Class			
				Non-slip flooring	Class	Class	Class		
				A steam room with a capacity of (6) or a Sauna with a capacity of (6)	Class				
				A set of weights for free exercises	Class	Class			
				A hot / cold Jacuzzi with a capacity of (4)	Class				
				Designated area (20m²) minimum for fitness separate from equipment hall	Class	Class			
				Provide indoor or outdoor swimming pool(s) of total minimum space of (50m²) for each (100 room or less), including: - Swimming pool chairs - Qualified life guard holding certificate in first aid - Identify the swimming pool depth and provide lifebuoys - Safety instructions for swimming pool users - products needed for testing the swimming pool water - water test record	Class	Class			
				Designate a swimming pool for children	Class				
				Provide changing rooms with clothes hook, long mirror and internally lockable door	Class	Class	Class		
				Provide lockers for club users to keep their belongings representing (20%) of rooms number, including (3) cloth hooks, a shelf and electronic lock	Class	Class	Class		
				Two toilets for each (100) room or less	Class	Class	Class		
				Provide (4) shower units for each (100) room or less separate from toilets with a private door and fitted with all toiletries, body care supplies and towels	Class	Class	Class		
				Provide an entertainment games hall (e.g. tennis tables, billiards, video games etc) of a minimum space of (150 m²) with comfortable chairs, tables and TV screens					
				Provide a children playground or playroom fitted with toys and TV screen on a minimum space of (30m²) opens for at least (12) hours					
				Provide a multi-purpose playground on a minimum space of (384m²) for entertainment and sports (football, tennis, basketball and volleyball)					
				Cooling / heating AC system (central)	Class				
				Cooling / heating AC system (split)		Class	Class		
				Absence of undesirable odors	Class	Class	Class		
				Provide adequate lighting at all recreational facilities	Class	Class	Class		
				Use power saving lamps (LED, Fluorescent or compact lamps)					
				Use motion sensor lighting for partial lighting control in recreational facilities					
				Provide energy efficiency labels on Acs					
				All employees shall be wearing uniforms and ID badges in Arabic/English	Class	Class	Class		
				Provide first aid kit at the GYM					
				Ceiling, floors, walls, furniture and equipment in recreational facilities and its related areas is free from defects	Class	Class	Class		
				General cleanliness (ceiling, floors, walls, furniture, equipment) in recreational facilities and related areas	Class	Class	Class		
				Provide sufficient number of waste containers		Class			
				Total		Class			
16	Central Kitchen			Central Kitchen	Class	Class	Class		
				A Saudi chef preparing Saudi cuisine					
				The kitchen shall be licensed by the Ministry of Municipalities and Rural Affairs					
				The kitchen shall carry a valid HACCAP certificate from an accredited entity	Class	Class	Class		
17	Management & Employees			An annual training plan	Class	Class			
				Provide changing rooms	Class	Class			
				Provide a break lounge for employees	Class	Class			
				Provide a break lounge for female employee with an adjacent toilet as per the requirements of the Ministry of Labor					
			License	Provide toilets for employees only					
			License	Smoking is prohibited for employees during work hours					
				Qualify employees before starting work through qualification training sessions or courses	Class	Class			
				Provide at least one employee around the clock, holding a Saudi Red Crescent first aid certificate					
				Implement quality management and client satisfaction program in accordance with specific objective to cure any defects	Class	Class			
				Provide hotel participation log in social responsibility program	Class	Class			

A.2   Hotel-Makkah Schema

Classification criteria for hotels - Mecca and Madinah

NO	Main Elements (service - facility)	Item Number	Regulatory Requirements	Description of Requirements	Five Stars	Four Stars	Three Stars	Two Stars	One Star
				Items with several requirements (or) with only one reqirement to be assessed for score while leaving the remaining requirements without assessment					
1	External Buildings	1	License	Hotel signboard in Arabic and English in a clear place (lighted, coordinated design, match the name in the commercial registration certificate only for renewal)					
		2	License	Place the hotel classification board in a clear place at entrance (renewal case only)					
		3		Use (granite, marble and glass) to cover facades of the building	Calss	Calss			
		4	License	Facades fault free (paint peeling, cracking, exposed wires, water leak stains)					
		5		Provide lighting that allow vision distributed all over the buildings and surrounding areas					
		6		Use power saving lamps (LED, Fluorescent or compact lamps)					
		7		Landscaping around the building while maintaining environment conditions with the provision of green areas	Calss	Calss			
		8	License	Cleanliness of buildings and all site areas					
		9		Using motion sensor based lighting to control part of external walkways lighting between buildings					
2	External Hotel Entrance	10	License	Provide a seprate main entrance for the hotel					
		11		Provide a seprate service entrance	Calss	Calss	Calss		
		12		The external area of the main entrance shall be shaded	Calss	Calss			
		13		Provide sufficient loading and unloading area in front the main entrance	Calss	Calss	Calss		
		14		Provide a counter with dedicated employee for valet services with cards	Calss				
		15		Provide external decoration near the main entrance (fountains, sculptures)	Calss	Calss			
		16	License	Provide ramps with railing at entrance and exit gates for people with special needs (comprehensive access guide)					
		17		Provide unique lighting with creative designs	Class	Class			
		18	License	Provide proper lighting					
		19		Use power saving lamps (LED, Fluorescent or compact lamps)					
		20		Use double doors (transit between the two doors) or swing door st entity main entrance					
3	Front Offices (Reception)	21	License	Reception in eminent areas and overlook the main entrance					
		22	License	place operation license, classification certificate and price list approved by SCTA clearly in eminent place in reception (renewal only)					
		23	License	Provide a sign showing the name and contact number of the person in charge who can be accessed all the time (duty manager)					
		24		Provide concierge officer, (designated officer either in a separate office or within reception desk with an indication signage) to provide information and services to guests. Higher score in case of Saudi national	Class				
		25		Provide Arabic / English front office and reception signage	Class	Class	Class	Class	
		26		Reception desk of a unique design and luxurious materials	Class	Class			
		27	License	Provide an impeccable reception desk or counter					
		28		Comfortable waiting seats and service tables available at reception area in a space of 10% of the whole reception area	Class	Class			
		29		Credit card and SPAN payment system is available	Class	Class	Class		
		30		Currency exchange services and exchange prices lists are available	Class				
		31		Designated telephone exchange room is available staffed with employee (s) to respond to calls	Class	Class			
		32		Provide an ATM at the hotel or nearby the hotel provided that it shall be in a distance of (100 m maximum) that can be reached on feet					
		33		Provide clocks indicating local time of KSA and some World's cities	Class				
		34		Provide safety deposit boxes in a separate room apart from the reception with full privacy and provided with CCTV	Class				
		35		Provide fresh flowers on the tables and desks of reception areas	Class	Class			
		36		Provide a separate room for guests luggage fitted with rack shelves	Class	Class			
		37		Provide public telephones (minimum of 2) in separate area from reception (allow full privacy for guests)	Class				
		38		Provide pens and notebooks beside public telephone					
		39		Provide a table and a chair for public telephone					
		40	License	Apply an automatic registration software for recording guest profiles					
		41		Provide unique lighting	Class	Class			
		42	License	Provide sufficient lighting					
		43		Cooling / heating AC system (central)	Class				
		44		Cooling / heating AC system (split)			Class	Class	
		45	License	Absence of undesirable odors					
		46		Provide a section of the front office designated for people with special needs, with a maximum height of 90 cm					
		47		All employees in uniform	Class	Class	Class		
		48		All employees shall be wearing ID badges in Arabic/English	Class	Class	Class	Class	
		49	License	Provide complete first aid kit in accordance with red crescent requirements					
		50	License	Provide a contact number of a medical center that can be called in case of emergency					
		51		Use power saving lamps (LED, Fluorescent or compact lamps)					
		52	License	Ceilings, floors, walls, furniture and equipment in reception must be in good condition and defect free					
		53	License	General cleanliness (ceilings, floors, walls, furniture and equipment) in reception & its components					

Classification criteria for hotels - Mecca and Madinah

NO	Main Elements (service - facility)	Item Number	Regulatory Requirements	Items with several requirements (or) with only one reqirement to be assessed for score while leaving the remaining requirements without assessment — Description of Requirements	Five Stars ★★★★★	Four Stars ★★★★	Three Stars ★★★	Two Stars ★★	One Star
4	Lobby	54		Lobby area more than 160 m2 for each 100 rooms					
		55		Lobby area 100 ≥ 160 m2 for each 100 rooms	Class				
		56		Lobby area 50 ≥ 100 m2 for each 100 rooms		Class	Class		
		57	License	Lobby area less than 50 m2 for each 100 rooms					
		58		Lobby floors of luxurious material (such as high quality marble, luxurious carpet and rugs)	Class	Class			
		59	License	Lobby floors of suitable material					
		60		Provide high quality furniture (seating, tables and accessories)	Class	Class			
		61	License	or	Provide furniture (seating, tables and accessories)				
		62		Provide distinctive and artistic sculptures and paintings (higher score for national heritage)					
		63		Provide natural plants distributed evenly and in consistent manner					
		64		Provide Free Wi-Fi service in the lobby area	Class	Class			
		65		Provide electrical sockets beside the seats					
		66		Provide directional signage and pictorial symbols in the lobby indicating the hotel's facilities	Class	Class	Class		
		67		Central cooling / heating AC system	Class				
		68		Split cooling / heating AC system		Class	Class		
		69	License	Sufficient cooling / heating AC system					
		70		Provide unique lighting	Class				
		71	License	Provide sufficient lighting					
		72		Absence of undesirable odors					
		73		Use power saving lamps (LED, Fluorescent or compact lamps)					
		74		Provide standby lighting					
		75	License	Ceilings, floors, walls, furniture and equipment in the lobby must be in good condition and defect free					
		76	License	General cleanliness (ceilings, floors, walls, furniture and equipment) in the lobby & its components					
5	Public Toilets	77		Toilets of public facilities (lobby, prayer room, halls, and restaurant) either grouped or separated must be divided into (males and females) and include at least one toilet (equipped for people with special needs) for each 100 rooms or less for males and similar for females	Class	Class			
		78	License	One toilet (equipped for people with special needs) for each 100 rooms or less for males and similar for females					
		79	License	Absence of undesirable odors					
		80	License	Provide a hand hose (shattaf) beside each toilet					
		81	License	Provide foot operated waste basket					
		82	License	Provide toilet paper and hand tissues					
		83		Provide automatic flush systems, soap containers and lavatory taps	Class	Class			
		84	License	Suitable lightings distributed in a consistent manner					
		85	License	No water leakage and rust in toilet water fixtures or connections					
		86		Use water saving fittings installed in all the taps of lavatory and basins					
		87		Use power saving lamps (LED, Fluorescent or compact lamps)					
		88		Use motion sensor lighting for toilets					
		89		Provide water saving awareness signs					
		90	License	Ceilings, floors, walls, furniture and equipment in the toilets must be in good condition and defect free					
		91	License	General cleanliness (ceilings, floors, walls, furniture and equipment) in the toilets & its components					
6	Elevators & Stairs	92	License	Provide one elevator for every 50 rooms in facilities of (3) stories + ground floor					
		93		Each elevator shall cover an area ≥ (3m²)					
		94		Each elevator shall cover an area ≥ (2m²)	Class	Class			
		95		Each elevator shall cover an area ≥ (1m²)				Class	Class
		96		Provide at least one mirror wall inside the elevator					
		97		Elevator or stairs interior include luxurious installations and decorations					
		98		Elevator can be operated with the room key card					
		99	License	Elevators & stairs must be provided with required fittings for people with special needs, as follows: the internal & external switch board shall be positined at a hight of about (90 cm) & shall be equipped with Braille Lettering, the minimum width of levator doors is (90 cm), railings along the internal walls of the elevator serving people with special needs, an audio-visual lighted panel inside & outside the elevator indicating the floor the elevator stops.					
		100	License	Absence of undesirable odors					
		101	License	Provide sufficient lighting in elevators and stairs					
		102		Use power saving lamps (LED, Fluorescent or compact lamps)					
		103	License	All elevators are provided with intercom to reception (emergency)					
		104		Do not use elevator in case of Fire warning signage is available. The signage shall be placed beside the elevator door externally in all floors in Arabic and English					

Classification criteria for hotels - Mecca and Madinah

NO	Main Elements (service - facility)	Item Number	Regulatory Requirements	Description of Requirements	Five Stars	Four Stars	Three Stars	Two Stars	One Star
				Items with several requirements (or) with only one reqirement to be assessed for score while leaving the remaining requirements without assessment					
		105	License	Elevator and stairs (ceiling, floors, walls, and lights) are in good conditition and defects free					
		106	License	General cleanliness of elevators and stairs (ceilings, floors, walls, lighting) including its related components					
		107		Provide at least one elevator designated for support services	Class	Class	Class		
7	Corridors	108		Minimum width of corridors is 1.80 m					
		109	License	Minimum width of corridors is 1.50 m					
		110		Provide luxurious and high density carpets for corridors	Class	Class			
		111		Provide good quality carpet for corridors			Class		
		112	License	Provide suitable flooring for corridors					
		113		Provide a room in each floor designated for the janitor trolley and tools	Class	Class			
		114	License	Provide guiding signs indicating (floor number, directions and room numbers) in front of elevators and in corridors					
		115		Provide a shoe polisher in each floor nearby elevator	Class				
		116		Provide distinctive and artistic decorations and paintings including natural plants in corridors	Class				
		117		Provide an intercome in a clear location	Class	Class			
		118		Comfortable seats near the elevator on each floor	Class	Class			
		119		Central cooling / heating AC system	Class	Class			
		120	License	Cooling / heating AC system					
		121	License	Absence of undesirable odors					
		122	License	Provide sufficient lighting					
		123		Use power saving lamps (LED, Fluorescent or compact lamps)					
		124		Use motion sensor lighting for contorling parts of the corridors					
		125	License	Provide waste baskets in front of each elevator on each floor					
		126	License	Corridors (ceiling, floors, walls, and lights) are in good conditition and defects free					
		127	License	General cleanliness of corridors (ceilings, floors, walls, lighting) including its related components					
8	Rooms	128		Room space is more than (30 m²) including the toilet and corridors					
		129		Room space is more than (24 m²) including the toilet and corridors	Class				
		130		Room space is more than (20 m²) including the toilet and corridors		Class			
		131		Room space is more than (18 m²) including the toilet and corridors			Class		
		132	License	Room space is more than (14 m²) including the toilet and corridors					
		133	License	Provide several non-smoking rooms					
		134	License	Provide a seprate entrance for each room or suite with clear numbers					
		135		Provide soundproofing in each room	Class	Class			
		136	License	Provide peepholes on the entrance doors of all the rooms					
		137		Provide an eletronci card locking systme	Class	Class			
		138	License	Provide an internal hand lock for privacy					
		139		Provide an addetional internal lock	Class	Class	Class		
		140		Provide an illumined sign by the external door with an internal control indicating (do not disturb - make up the room)signs.					
		141	License	Provide cards with (do not disturb - make up the room) signs on the doorknob from the inside.					
		142		Provide creative room design with artistic touches (gypsum or wood decorations, wall paper)	Class	Class			
		143	License	Provide suitable room designs					
		144		Provide high quality carpet or rugs fpr covering the room floor. If marble, ceramic, or wood is used; provide luxurious rugs beside the bed	Class	Class			
		145		Provide artistic paintings on the walls	Class	Class			
		146		Provide a balcony separated from the room with heatproof and soundproof glass allowing natural lighting					
		147		Provide heatproof and soundproof glass (or double glass) window allowing natural lighting	Class				
		148	License	Provide a galss window for every room					
		149	License	Provide blackout curtains					
		150		Provide high quality curtains	Class	Class			
		151	License	Provide suitable curtains					
		152		Minimum size of single beds is (190x120 cm), double beds is (200x200 cm)	Class				
		153		Minimum size of single beds is (190x100 cm), double beds is (200x180 cm)		Class			
		154	License	oror					
		155		Provide luxurious bed mattresses with a minimum thickness of (30 cm)	Class				
		156	or	Provide bed mattresses with a minimum thickness of (20 cm)		Class			
		157	License / or	Provide suitable bed mattresses					
		158		Provide complete high quality sets of bed sheets including: mattress cover, fitted and flat sheets, and one bed comforter of white or light color	Class	Class			
		159	License	Provide good quality sets of bed sheets including: one mattress cover, on fitted sheet, one pillow case and one blanket of white or light color					
		160		Provide (2) high quality pillows	Class	Class			

Classification criteria for hotels - Mecca and Madinah

NO	Main Elements (service - facility)	Item Number	Regulatory Requirements	Description of Requirements	Five Stars ★★★★★	Four Stars ★★★★	Three Stars ★★★	Two Stars ★★	One Star
				Items with several requirements (or) with only one reqirement to be assessed for score while leaving the remaining requirements without assessment					
		161	License	Provide suitable pillow per guest					
		162		Provide additional (pillow and blanket) in the closet	Class				
		163		Provide a list of pillows (minimum 3 types) to be provided upon request	Class				
		164		Provide (2) night stands for each double bed	Class	Class	Class		
		165		Provide one night stand for each single bed (in the twin beds room) or one night table between the two beds.	Class	Class	Class		
		166		Provide (2) high tech telephones indicating hotel services (on the device) in Arabic and English	Class				
		167		Provide a telephone device in each room		Class	Class	Class	
		168		Provide (2) armchairs/coaches & a table	Class				
		169		Provide (1) armchair/coache & a table		Class	Class		
		170		Provide high quality closet with internal lighting, shelves and (5) matching hangers per guest (3) of which are fitted with clamps	Class				
		171	or	Provide high quality closet with (5) matching hangers per guest (3) of which are fitted with clamps		Class			
		172	License	Provide a closet with shelves and hangers					
		173		Provide safety boxes in all rooms of a space that accommodates a cell phone size 15 inches	Class				
		174		Provide safety boxes in all rooms		Class			
		175		Provide an electrical socket inside the safety box					
		176		Provide (2) drinking glasses and (2) juice glasses of high quality	Class				
		177	License	Provide (2) drinking glasses					
		178		Provide 24 hours laundry services (regular / express)					
		179	or	Provide 12 hours laundry services (regular / express)	Class	Class			
		180	or	Provide laundry service			Class		
		181		Provide a laundry price list (regular - express)	Class	Class	Class		
		182		Provide a closable laundry sack per guest	Class				
		183		Provide a suitable laundry sack per guest		Class	Class		
		184		Provide an iron and ironing board in good condition	Class				
		185	or	Provide an iron and ironing board in good condition upon request		Class	Class		
		186		Provide fabric slippers per guest	Class	Class			
		187		Provide shoes basket for requesting polish					
		188		Provide shoe polisher per guest	Class				
		189		Provide shoe aids					
		190		Provide a full body length mirror	Class	Class			
		191		Provide a high quality shelve for luggage (fixed / mobile) separate from closet	Class	Class	Class		
		192		Provide a dresser of unique design and high quality fitted with drawers, a mirror and a chair	Class	Class	Class		
		193		Provide a sewing ket (needles, threads, buttons etc)					
		194		Provide an excellent stationary (mail envelopes, paper, pens etc)	Class	Class			
		195		Provide a questionnaire of level of satisfaction about hotel services					
		196		Provide a complete guide of services of the hotel including prices in Arabic and English high quality printed and free from defects	Class	Class	Class		
		197		Provide room service menu of food and beverages in room including prices in Arabic and English separate from room guide, high quality printed and free from defects	Class	Class	Class		
		198		Provide a flat TV screen with a minimum size of 40" including a remote control and a channel displaying the hotel services					
		199		Provide a flat TV screen with a minimum size of 32" including a remote control and a channel displaying the hotel services	Class	Class	Class		
		200	License	Provide a new flat TV screen					
		201		Provide a minimum of 30 TV channels, at least 5 of which are Saudi channels (according to the rules and regulation notified by related authorities)	Class	Class			
		202		Provide the Saudi channels pack plus four other channels (according to the rules and regulation notified by related authorities)			Class	Class	
		203		Provide two unused electrical sockets beside the bed and desk	Class				
		204		Provide high quality wireless internet (WiFi) and connection cables	Class				
		205		Provide high quality wireless internet (WiFi)			Class		
		206	License	Provide a high quality prayer mat					
		207		Provide King Fahad Print Press Holy Quran (when requested)					
		208		Provide a small refrigerator	Class	Class	Class	Class	
		209		Provide juice and drinks	Class				
		210		Provide a collection of candy, nuts and biscuits	Class				
		211		Provide a hot drinks machine	Class	Class			
		212	or	Provide a kittle			Class		
		213		Provide sugar and a collection of tea and coffee (supplied daily and free of charge)	Class	Class			
		214		Provide bottled drinking water (free of charge - daily - a bottle per guest)	Class	Class			
		215		Provide soft tissue for hands and face (2 units)	Class	Class			
		216	License	Provide tissue for hands and face (1 unit)					
		217	License	Provide Qubla direction poster in clear place					
		218		Provide free local newspaper for each room every morning	Class				
		219		Provide lighting control switches for lights in the room and toilet beside bed					
		220		Provide an ash tray (if smoking is permitted)					
		221		Provide luxurious bedside lighting	Class				

Classification criteria for hotels - Mecca and Madinah

NO	Main Elements (service - facility)	Item Number	Regulatory Requirements	Items with several requirements (or) with only one reqirement to be assessed for score while leaving the remaining requirements without assessment — Description of Requirements	Five Stars ★★★★★	Four Stars ★★★★	Three Stars ★★★	Two Stars ★★	One Star
		222		Provide suitable bedside lighting		Class	Class		
		223		Provide two high quality movable lamps beside the bed for reading					
		224		Provide a high quality ground lamp	Class				
		225		Provide a suitable ground lamp					
		226		Provide special lighting for the entrance	Class	Class	Class		
		227		Provide lighting on the dresser	Class	Class			
		228		Cooling / heating AC system (central)	Class	Class			
		229		Cooling / heating AC system (split)			Class	Class	
		230	License	Cooling / heating AC system					
		231		Provide door closers on the rooms' doors	Class	Class			
		232		Use power saving lamps (LED, Fluorescent or compact lamps)					
		233		Provide energy efficiency labels on electrical devises (fridge & air-condition)					
		234	License	Provide an exit plan on the room door, internally, in case of emergency					
		235		Provide smoke detectors in each room					
		236	License	Provide water sprinklering system in case of fire					
		237	License	Provide defect free and unique waste basket					
		238	License	Ceilings, floors, walls furniture and equipment including its related components of room are in good condition and free from defects					
		239		General cleanliness of the room (ceiling, floors, walls, furniture and equipment) and all its related cpmonents					
9	Room Toilets	240		Toilet space more ≥ (5m²)					
		241		Toilet space ≥ (4m²)	Class	Class			
		242	License	Toilet space at least (3m²)					
		243	License	High quality door ensure complete privacy					
		244		Covering walls and floors of toilets with high quality marble					
		245	License	Covering walls and floors of toilet with ceramic					
		246	License	Continuous supply of hot and cold water					
		247		Telephone in toilets	Class	Class			
		248	License	A shower with a minimum space of 90x90 cm with a partition or suitable curtain					
		249		Suitable handle for shower area	Class	Class	Class		
		250	License	A non-slip floor in shower and toilet					
		251		A stainless steel shelve for shower towel	Class	Class	Class		
		252		Two (2) clothe hocks	Class	Class	Class		
		253	License	High quality toilet seat with lid					
		254	License	Hand hose (shattaf) beside the toilet or bidet					
		255	License	Two (2) high quality tiolet paper rolls are available					
		256	License	Hand wash basin					
		257		Mirror with light					
		258	License	Provide a mirror					
		259		Provide a high quality rack for toiletries	Class	Class			
		260		Shaver socket beside the mirror	Class	Class	Class		
		261		High quality digital scale	Class				
		262		Mirror (magnification) with lights	Class				
		262		Hair dryer	Class	Class			
		264		Thick and fine cotton towel (shower) per guest minimum size (140x70)	Class	Class			
		265	License	Thick and fine cotton towel (shower) per guest					
		266		Thick and fine cotton towel (hand) per guest minimum size (40x70)	Class	Class	Class		
		267		Thick and fine cotton towel (face) per guest minimum size (30x30)	Class	Class			
		268		Thick towel for toilet floor minimum size 50x70	Class	Class	Class		
		269		Fine cotton robe per guest	Class	Class			
		270	License	Fine hand and face tissues					
		271		High quality tdoiletries and personal care products	Class	Class			
		272		High quality packed soap per guest	Class	Class	Class		
		273	License	Packed soap per guest					
		274		High quality shower jel per guest	Class	Class	Class		
		275	License	Shower jel per guest					
		276		High quality hair shampoo per guest	Class	Class	Class		
		277	License	Hair shampoo per guest					
		278		High quality hair conditioner per guest	Class	Class			
		279		High quality body lotion per guest	Class	Class			
		280		Shower cap	Class	Class			
		281		Dental kit per guest upon request	Class	Class			
		282		Sahving kit per guest upon request	Class	Class			
		283		Ear cotton pads	Class	Class			
		284		Comb for each guest	Class	Class			
		285		Two (2) water glasses	Class	Class			
		286		Retractable (clothesline) clothes dryer rope with a base fixed to the wall					
		287	License	Absence of undesirable odors					

Classification criteria for hotels - Mecca and Madinah

NO	Main Elements (service - facility)	Item Number	Regulatory Requirements	Items with several requirements (or) with only one reqirement to be assessed for score while leaving the remaining requirements without assessment — Description of Requirements	Five Stars	Four Stars	Three Stars	Two Stars	One Star
		288	License	General lighting for the toilet					
		289		Use power saving lamps (LED, Fluorescent or compact lamps)					
		290		Install water saving tools in flush box, toilet hand hode, hand wash basin and shower					
		291	License	Flap cover waste basket					
		292	License	Toilet ceilings, floors, walls, toilets and fittings are free from defects					
		293	License	No water leakage and rust in toilet water fixtures or connections					
		294	License	General cleanliness (ceilings, floors, walls, lavatory, toilet and fixture) including all related items					
10	Rooms for People with Special Needs	295	License	Designate 1% of rooms for people with special needs (minimum one room of total rooms) based on the comprehensive access guide					
		296	License	This room should be in the ground floor or nearby ground floor (grade based on proximity to/from ground floor)					
		297	License	Minimum room space (standard room) is 30m² including toilet and corridor					
		298	License	Minimum space of toilet of this room is 5m²					
		299	License	Room door handles at a hight of 90-120 cm					
		300	License	Minimum width of the room's door is 1 m					
		301	License	Additional lock and peepholes at a hight of (90-120cm)					
		302	License	All floors are fitted with ceramic or marble and with no use of carpet					
		303	License	Lighting switches and sockets at a height of (90-120cm)					
		304	License	Bed height is 45-55 cm					
		305	License	Dresser mirror at a maximum height of (90cm) from the ground					
		306	License	Emergency button in telephone set					
		307	License	Cloth hocks at a maximum height of (140cm)					
		308	License	Toilet door is sliding (or open outward) of minimum width of (1m), a handle at a height of (90-120cm) and no ground sills between the toilet and the room					
		309	License	Designate (120x150cm) of the bathroom for the toilet seat at a hight of (43-49cm) fitted with hand hose and minimum space of (1m) in front of the chair					
		310	License	All toilet handles, accessories and sockets at a height of (90-120cm)					
		311	License	Hand wash basin width of (50cm) and at a height of (72-74cm) including (50cm) long tab					
		312	License	Handles for assisting toilet user (vertical and horizontal) beside each (toilet seat, hand wash basin and shower area)					
		313	License	Non-slip Floors					
		314	License	Shower area at the toilet ground level and shower head at a height of (120-150cm)					
		315	License	All personal accessories and toiletries are available in toilets					
		316	License	Suitable ventilation and lighting are available in room and toilets					
11	Rooms for People with Special Needs	317	License	Designate 1% of rooms for hearing and vision disabled (minimum 1 room of total rooms)					
		318	License	Room bell, alarm sounder and telephone tone alerts persons in room and toilet (audidlly and visually)					
		319	License	Vibrator is available connected to room bell or alarm sounder placed under pillow if guest suffers hearing disability					
		320	License	Provide a device with display screen indicating hotel guide and its services using audio and Sign language, such device switches shall be marked in Arabic, English, Pictorial and Braille					
		321	License	Hotel guide and related services is available in Arabic, English and Braille					
		322	License	Braille Language added to all guidance sentences in the room					
		323	License	Braille Language added to all toilet fixtures, toiletries and accessories					
		324	License	Provide all personal accessories, toiletries and tools in toilets					
		325	License	Suitable ventilation and lighting are available in room and toilets					
				Total					
		326		Provide a coffee shop operating 24/7					
12	Coffee Shop	327		Provide a coffee shop operating a minimum of 18 hours a day	Class				
		328		Provide a coffee shop operating a minimum of 12 hours a day		Class	Class		
		329		Provide a menu for the coffee shop written in Arabic and English indicating the prices (higher score if it is written in Braille Language)	Class	Class	Class		
		330		Provide (4) types of pastries	Class	Class			
		331		Provide (4) types of desserts	Class	Class			
		332		Provide (4) types of coffee	Class	Class			
		333		Provide (4) types of tea	Class	Class	Class		
		334		Provide (4) types of fresh juice	Class	Class			
		335		Provide (4) flavours of icecream					
		336		Food heaters are available	Class	Class			
		337		A refrigerator for foods and drinks is available	Class	Class	Class		
		338		Coffee makers are available	Class	Class	Class		
		339		Utensils and cups are in good condition and free from defects, matching, luxurious and fancy	Class	Class	Class		
		340		All employees in uniform	Class	Class	Class		
		341		All employees shall be wearing ID badges in Arabic/English	Class	Class	Class		
		342		Provide a special hand wash basin designated separately from sinks. It shall be operated automatically without using hands					
		343	w	Hand wash basin	Class	Class	Class		
		344		Water saving tools are installed in taps of hand wash basin					
		345		Fabric towels shall not used for cleaning, paper towels shall be used istead	Class	Class	Class		

Classification criteria for hotels - Mecca and Madinah

NO	Main Elements (service - facility)	Item Number	Regulatory Requirements	Description of Requirements	Five Stars ★★★★★	Four Stars ★★★★	Three Stars ★★★	Two Stars ★★	One Star
		346		Hand sanitizer is available	Class	Class	Class		
		347		Disposable gloves are available	Class	Class	Class		
		348		Foot operated waste basket is available in preparation area	Class	Class	Class		
		349		Use power saving lamps (LED, Fluorescent or compact lamps)					
		350		Ceiling, floors, walls, furniture and equipment in the coffee shop and its related components are in good condition and free from defects	Class	Class	Class		
		351		General cleanliness (ceiling, floors, walls, furniture, equipment) in the coffee shop and related areas	Class	Class	Class		
13	Restaurants	352		Provide (3) or more resturants					
		353		Provide (2) restarants	Class				
		354		Provide a minimum of (1) resturant		Class	Class		
		355		Main restaurant space is more than (150m²) for each (100) rooms	Class				
		356		Main restaurant space is between (100-150m²) for each (100) rooms		Class			
		357		Main restaurant space is not less than (50m²) for each (100) rooms			Class		
		358		Restaurant entrance is clear and restaurant name board is present	Class	Class	Class		
		359		Provide a sign indicating operating hours outside the restaurant entrance in Arabic and English	Class	Class			
		360		Provide a counter and an employee to welcome guests at restaurant's entrance	Class				
		361		Floors shall be covered with good and cleanable material					
		362		Breakfast buffet shall last at least for (4) hours daily	Class	Class			
		363		Breakfast service			Class		
		364		Dinner & lunch service	Class	Class			
		365		The restaurant shall be fitted with high quality luxurious chairs and tables to serve main meals (breakfast, launch and dinner)	Class	Class			
		366		Using consistent high quality serving utensils each signed by manufacturer stamp	Class	Class			
		367		Using apropriate consistent serving utensils			Class		
		368		Unique and creative decorations are applied	Class				
		369		Suitable decorations are applied		Class	Class		
		370		Mobile and defect free partitions are available for families upon request					
		371		The food display area (Buffet) shall include hot and cold food sections, food heat preserving units shall be use with attached lids	Class	Class	Class		
		372		Provide suitable protection covers for cold food (food protection from spill and sneeze)	Class	Class	Class		
		373		Toilets nearby restaurant are available	Class	Class			
		374		Cooling / heating AC system (central)	Class				
		375		Cooling / heating AC system		Class	Class		
		376		Use power saving lamps (LED, Fluorescent or compact lamps)					
		377		All employees in uniform	Class	Class	Class		
		378		All employees shall be wearing ID badges in Arabic/English	Class	Class	Class		
		379		Ceiling, floors, walls, furniture and equipment in restaurants and its related areas is free from defects	Class	Class	Class		
		380		General cleanliness (ceiling, floors, walls, furniture, equipment) in restaurants and related areas	Class	Class	Class		
14	Public Facilities	381		Provide a prayer area at suitable location	Class	Class			
		382	License or	In case there are no mosques nearby (a minimum distance of 5 minutes on feet), a prayer room shall be provided					
		383		An ablution facility beside the prayer area	Class	Class			
		384		Provide a business center at a suitable location	Class				
		385		Designate an employee for helping users of the business center while placing a board at the entrance indicating operating hours	Class				
		386		The business center includes (2 or more desks) fitted with (computer, printer, fax, photocopy, scanner and internet connection)	Class				
		387		Main multi-purpose hall is available of total minimum space of (130m²) for each (100) rooms	Class				
		388		Additional multipurpose hall is available of total space (70m²) for each (100) room					
		389		Provide open areas of space of (50m²) fitted with natural trees, plants and flowers and suitable tables and chairs					
		390		If the hotel is not directly connected to a mall, provide a gift shop					
		391		Barber shop is available					
		392		Cooling / heating AC system (central)	Class				
		393		Cooling / heating AC system		Class			
		394		Absence of undesirable odors	Class	Class			
		395		Provie adequate lighting at all public facilities	Class	Class			
		396		Use power saving lamps (LED, Fluorescent or compact lamps)					
		397		Use motion sensor lighting for partial lighting control in public facilities (prayer area, halls, business center)					
		398	License	Ceiling, floors, walls, furniture and equipment in public facilities and its related areas is free from defects					
		399	License	General cleanliness (ceiling, floors, walls, furniture, equipment) in public facilities and related areas					
		400	License	Provide sufficient number of waste containers					
15	Recreational Facilities	401		A GYM covering an area of about (100m² or more) fitted with minimum (10) sport equipment					
		402		A GYM covering an area of about (70-100m²) fitted with minimum (6) sport equipment	Class	Class			

Classification criteria for hotels - Mecca and Madinah

NO	Main Elements (service - facility)	Item Number	Regulatory Requirements	Items with several requirements (or) with only one reqirement to be assessed for score while leaving the remaining requirements without assessment — Description of Requirements	Five Stars *****	Four Stars ****	Three Stars ***	Two Stars **	One Star
		403		Non-slip flooring	Class	Class	Class		
		404		A steam room accommodates at least (6) persons or a Sauna accommodates at least 6 persons	Class				
		405		Provides a set of weights for free exercises	Class	Class			
		406		Provide a hot / cold Jacuzzi accommodates at least (4) persons	Class				
		407		Designated area (20m²) minimum for fitness separate from equipment hall	Class	Class			
		408		Provide indoor or outdoor swimming pool(s) of total minimum space of (50m²) for each (100 room or less), including: - Swimming pool chairs - Qualified life guard holding certificate in first aid - Identify the swimming pool depth and provide lifebuoys - Safety instructions for swimming pool users - products nneded for testing the swimming pool water - water test record	Class	Class			
		409		Designate a swimming pool for children	Class				
		410		provide changing rooms with clothes hock, long mirror and internally lockable door	Class	Class	Class		
		411		Provide lockers for club users to keep their belongings representing (20%) of rooms number, including (3) cloth hocks, a shelf and electronic lock	Class	Class	Class		
		413		Two toilets for each (100) room or less	Class	Class	Class		
		412		Provide 4 shower areas for each (100) rooms or less separate from toilets with a private door and fitted with all tioletries, body care supplies and towels	Class	Class	Class		
		414		Provide an entertainment games hall (e.g. Tennis table, billiards, video games etc) of a minimum space of (150 m²) with comfortable chairs, tables and TV screens					
		415		Provide a children playground or playroom fitted with toys and TV screen on a minimum space of (50m²) opens for at least (12) hours					
		416		Provide a multi-purpose playground on a minimum space of (364m²) for entertainment and sports (football, tennis, basketball and volleyball)					
		417		Cooling / heating AC system (central)	Class				
		418	or	Cooling / heating AC system (spalet)		Class	Class		
		419		Absence of undesirable odors	Class	Class	Class		
		420		Provie adequate lighting at all recreational facilities	Class	Class	Class		
		421		Use power saving lamps (LED, Fluorescent or compact lamps)					
		421		Use motion sensor lighting for partial lighting control in recreational facilities					
		422		Provide energy efficiency labels on Acs					
		424		All employees shall be wearing uniforms and ID badges in Arabic/English	Class	Class	Class		
		425		Provide first aid kit at the GYM					
		426		Ceiling, floors, walls, furniture and equipment in recreational facilities and its related areas is free from defects	Class	Class	Class		
		427		General cleanliness (ceiling, floors, walls, furniture, equipment) in recreational facilities and related areas	Class	Class	Class		
		428		Provide sufficient number of waste containers	Class	Class	Class		
16	Central Kitchen	439		A main Kitchen is available	Class	Class	Class		
		420		The kitchen shall be licensed by the Ministry of Municipalities and Rural Affairs					
		431		The kitchen shall get a valid HACCAP Certificate from an accredited entity	Class	Class	Class		
17	Management & Employee	432		An annual training plan	Class	Class			
		433		Provide a changing room	Class	Class			
		424		Provide a break lounge for employees	Class	Class			
		425		Provide a break lounge for female employees with an adjacent toilet as per the requirements of the Ministry of Labor					
		426	License	Provide toilets for employees only					
		427	License	Smoking is prohibited for employees during work hours					
		438		Qualify employees before starting work through qualification training sessions or courses	Class	Class			
		439		Provide at least one employee around the clock, holding a Saudi Red Crescent first aid certificate					
		440		Implement quality management and client satisfaction program in accordance with specific objective to cure any defects	Class	Class			
		441		Provide hotel participation log in social responsibility program	Class	Class			

A.3 FRU-General

Classification criteria for furnished appartment units

Serial No	Main Elements	Item Number	Regulatory Requirements		Description of Requirements	1st class	2nd class	3rd class	4th class
1	Building Exterior	1	License	or	Hotel signboard in Arabic and English in a clear place (lighted, coordinated design, matches the name on the commercial registry - only for renewal)				
		2	License	or	Place the hotel classification board in a clear place at the entrance (full score is granted on first licensure and classification visit - but requirement should be met upon renewal				
		3			Use (granite, marble and glass) to cover facades of the building	Class	Class		
		4	License	or	Facades fault free (paint peeling, cracking, exposed wires, water leak stains)				
		5			Provide lighting that allow vision distributed all over the buildings and surrounding areas				
		6			Use power saving lamps (LED, Fluorescent or compact lamps)				
		7			Landscaping around the building while maintaining environment conditions with the provision of green areas				
		8	License	or	Cleanliness of buildings and all site areas				
		9			Use motion sensor based lighting to control part of the external walkways between buildings				
2	Hotel External Entrance	10	License	or	Provide separate main entrance of hotel				
		11			External area of main entrance is shaded	Class			
		12			Provide sufficient areas in front of main entrance for passenger pick up/drop off	Class			
		13			Separate entrance for service	Class			
		14			Provide luxurious decoration outside the main entrance (fountains, sculptures)	Class			
		15	License	or	Provide low ramps with railing for entrance and exit for special needs people (comprehensive access guide)				
		16			Provide unique lighting with a creative design	Class			
		17	License	or	Provide good lightings				
		18			Use power saving lamps (LED, or Fluorescent)				
		19			Use double doors (space between the two doors) or revolving door at main entrance				
		20	License	or	Ceilings, floors, walls, furniture and equipment in lobby and all its elements are in good condition and defect free				
		21	License	or	General cleanliness of ceilings, floors, walls, furniture and equipment in lobby and all its components				
3	Front Offices (Reception)	22	License	or	Reception in eminent areas and overlook the main entrance				
		23	License	or	Place operation license, classification certificate and price list approved by SCTH clearly in eminent place in reception (full score is granted on first licensure and classification visit - but requirement should be met upon renewal)				
		24	License	or	Provide a sign showing the name and contact number of the guest in charge who can be accessed all the time (duty manager)				
		25			Provide Arabic / English front office and reception signage	Class	Class	Class	
		26	License	or	Reception desk or counter				
		27			Comfortable waiting seats and service tables available at reception area	Class			
		28			Credit card and SPAN payment system is available	Class			
		29			Provide clocks indicating local time of KSA and other countries				
		30			Provide safety deposit boxes in a separate room apart from the reception with full privacy and provided with CCTV				
		31			Provide a separate room for guests luggage fitted with racks	Class			
		32			Use luggage ID cards and luggage storage log	Class			
		33	License	or	Automated software to register guest data				
		34			Provide unique lighting	Class			
		35	License	or	Provide good lighting				
		36			Provide a section of front offices designated for special needs people with a maximum height of 90 cm				
		37			All employees in uniform or in the traditional Saudi Attire for Saudi bationals	Class	Class	Class	
		38			ID badge in Arabic / English	Class	Class	Class	

Classification criteria for furnished appartment units

Serial No	Main Elements	Item Number	Regulatory Requirements		tems with several requirements (or) with only one reqirement to be assessed for score while leaving the remaining requirements without assessment	1st class	2nd class	3rd class	4th class
					Description of Requirements				
		39	License	or	Provide complete first aid kit in accordance with red crescent requirements				
		40			Provide a contact number of a medical center that can be called in case of emergency				
		41			Use power saving lamps (LED, Fluorescent or compact lamps)				
		42	License	or	Ceilings, floors, walls, furniture and equipment in reception must be in good condition and defect free				
		43	License	or	General cleanliness (ceilings, floors, walls, furniture and equipment) in reception and its components				
4	Lobby	44			Lobby area no less than 100m2				
		45		or	Lobby area no less than 60m2	Class			
		46		or	Lobby area no less than 40m2		Class		
		47	License	or	Lobby area no less than 20m2				
		48			Lobby floors of luxurious material (such as high quality marble, luxurious carpet and rugs)	Class			
		49	License	or	Lobby floors of suitable material				
		50			provide high quality furniture (seating, tables and accessories)	Class			
		51		or	Provide suitable furniture (seating, tables and accessories)		Class	Class	
		52			Provide distinctive and artistic sculptures and paintings (higher score for national heritage)				
		53			Provide natural plants in unique pots distributed evenly				
		54			Provide Free Wi-Fi service in the lobby area	Class			
		55			Provide electrical sockets beside the seats				
		56			Provide signage and symbols in the lobby indicating the hotel facilities	Class	Class		
		57			Heating / Cooling AC System (Central)				
		58	License	or	Heating / Ccooling AC system (Split)				
		59			Provide unique lighting	Class			
		60	License	or	Provide good lightings				
		61	License		No bad odors				
		62			Use power saving lamps (LED, or Fluorescent)				
		63	License		Ceilings, floors, walls, furniture and equipment in lobby and all its elements are in good condition and defect free				
		64	License		General cleanliness of ceilings, floors, walls, furniture and equipment in lobby and all its components				
5	**Public Toilets**	65			Toilets of public facilities (lobby, prayer rooms, halls, restaurant) either grouped or separated must be divided into (males and females) including at least one toilet designated for special needs people in each section.	Class			
		66	License	or	Provide at least one toilet designated for special needs people				
		67	License		Effective ventilation system (No bad odors)				
		68	License		Provide a hand hose beside each toilet				
		69	License		Waste basket is available				
		70	License		Toilet paper and hand tissue are available				
		71			Provide automatic flush systems, soap containers and lavatory taps				
		72	License		Provide suitable lighting , distributed appropriately				
		73	License		No water leakage and rust in toilet water fixtures or connections				
		74			Use efficient water saving fittings installed in each tap at basin and lavoratory water hose				
		75			Use power saving lamps (LED, Fluorescent or compact lamps)				
		76			Motion sensor lighting is used for toilet lighting control				
		77			Save water posters				
		78	License		The (ceilings, floors, walls, furniture and equipment) in bathroom and all related components are in good condition and free from defects				
		79	License		The general cleanliness condition (ceiling, floors, walls and equipment) in bathrrom and related components				
6	**Stairs & Elevators**	90	License		An elevator for every 50 rooms in 3 floor buildings (two floors in addition to the ground floor) or a staircase in 2 floor buildings (ground floor and first floor)				

Classification criteria for furnished appartment units

Serial No.	Main Elements	Item Number	Regulatory Requirements		Description of Requirements	1st class	2nd class	3rd class	4th class
		81			The space of each elevator is more than or equal 3 m2	Class			
		82	License	or	Space of each elevator is 2m2				
		83			Provide a mirror inside the elevator or stairs in buildings of 2 floors or less				
		84			Elevator or stairs interior include luxurious installations and decorations				
		85			Elevator can be operated with the room key card				
		86			elevators and stairs must be provided with required fittings for special needs people as follows: elevator switch board internally and externally includes Braille Lettering at a height of 90 cm. Minimum width of levator door is 90 cm. Provide railing along the walls of the elevator internally. Provide audio-visual lighted panel inside and outside the elevator indicating the floor the elevator stops.	Class			
		87	License		Effective and automatic ventilation system (no bad odors)				
		88	License		Suitable lighting is available in the elevator and stairs				
		89			Use power saving lamps (LED, Fluorescent or compact lamps)				
		90			All elevators are provided with intercom to reception (emergency)				
		91			Do not use elevator in case of Fire warning signage is available. The signage shall be placed beside the elevator door externally in all floors in Arabic and English				
		92	License		Elevator and stairs (ceiling, floors, walls, and lights) are in good condittition and defects free				
		93	License		General cleanliness of elevators and stairs (ceilings, floors, walls, lighting) including its related components				
		94			Separate elevator for support services	Class			
7	Corridors	95			Minimum width of corridors is 1.80 m	Class			
		96	License	or	Corridors width shall not be less than 1.50 m				
		97			Provide luxurious and high density carpets for corridors floors	Class			
		98	License	or	Provide suitable quality and material carpet for the floors of corridors				
		99			Provide a room in each floor designated for the janitor trolley and tools	Class			
		100	License		Provide guidance signage indicating (floor number, directions and room numbers) in front of elevator and in corridors				
		101			Shoe polisher in each floor near elevator				
		102			Distinctive and artistic decorations and paintings including natural plants in corridors	Class			
		103			Fixed phone inside	Class			
		104			Convenience seats beside elevator in each floor				
		105			Heating / Cooling AC System (Central)				
		106		or	Heating / cooling AC system	Class			
		107	License		Effective air freshening devices(no foul odors)				
		108	License		Suitable lighting				
		109			Use power saving lamps (LED, Fluorescent or compact lamps)				
		110			Power efficiency label on AC equipment is available				
		111			Motion sensors lighting means is used to control corridors internal lighting				
		112	License		waste baskets are available in front of each elevator in each floor				
		113	License		The (ceilings, floors, walls, furniture and equipment) in Corridors and all related components are in good condition and free from defects				
		114	License		The general cleanliness condition (ceiling, floors, walls and equipment) in corridors and related components				
8	Units	115			Room space is more than or equal to 60 m2 including bedroom, sitting room, kitchen, toilet and corridor				
		116		or	Room area is no less than 50m2 including the bedroom, sitting room, kitchen, toilet and corridor	Class			
		117		or	Room area is no less than 40m2 including the bedroom, sitting room, kitchen, toilet and corridor		Class		
		118	License	or	Room area is no less than 32m2 including the bedroom, sitting room, kitchen, toilet and corridor				
		119			Minimum area for master bedroom w/o bath is 20m2 for two guests				
		120		or	Minimum area for master bedroom w/o bath is 18m2 for two guests	Class			
		121		or	Minimum area for master bedroom w/o bath is 16m2 for two guests		Class		

Classification criteria for furnished appartment units

Serial No.	Main Elements	Item Number	Regulatory Requirements		Description of Requirements	1st class	2nd class	3rd class	4th class
		122	License	or	Minimum area for master bedroom w/o bath is 12m2 for two guests				
		123	License		Separate entrance and number is provided for each unit				
		124			Soundproof unit	Class			
		125	License	or	Availibity of peephole on all unit entrance doors				
		126			Card electronic lock system is available for all rooms	Class			
		127	License	or	Manual locket is available internally for privacy				
		128			Additional locket is available internally	Class			
		129			Provide lighted board beside the door externally, internally controlled, indicating (do not disturb - make up the room)				
		130		or	Or provide excellent cards requesting the service e.g. do not disturb, make up the room) hang on door handle internally	Class	Class		
		131			Provide creative room design with creative touches (gypsum or wood decorations, wall paper)	Class			
		132		or	Suitable pattern of room design		Class	Class	
		133			Use high quality and luxurious carpet covers the room floor. If using marble, ceramic, or wood, provide luxurious rugs beside the bed and sitting room	Class			
		134			Provide artistic paintings hang on walls	Class			
		135			Provide a balcony separated from the room with heatproof and soundproof glass allowing natural lighting				
		136		or	Provide heatproof and soundproof glass window allow natural lighting	Class			
		137	License	or	Glass window for each unit				
		138			Provide blackout curtains	Class	Class	Class	
		139			Provide a good design and high quality curtains	Class			
		140	License	or	Suitable curtains				
		141			Minimum size of single bed is 90x190 cm and double bed is 180x200 cm	Class	Class		
		142	License	or	Minimum size of single bed is 80x190 cm and double bed is 180x200 cm				
		143			Provide a luxurious mattress with a minimum thickness 30 cm				
		144		or	Luxurious mattress with a minimum thickness 20 cm minimum	Class			
		145	License	or	Suitable mattress				
		146			A full of bed covers are provided with high quality and include: bed cover, 2 bed	Class			
		147	License	or	Provide suitable quality bed sheets including: bed mattress cover, one bed comforter, pillow case, and a blanket of white or light color				
		148			Two (2) luxurious pillow are available for each guest	Class			
		149	License	or	One (1) suitable pillow is available for each guest				
		150			Additional pillow and blanked is available in closet				
		151			Two (2) bedside table for double bed are available	Class	Class		
		152			One (1) bedside tables for each bed (double bed room)	Class	Class		
		153			Two high tech telephones in master boodroom and sitting room indicating the hotel services (on the device) in Arabic and English	Class			
		154		or	Telephone sitting room		تصنيف	تصنيف	
		155			Two armchairs/ coaches with a table	تصنيف			
		156	License	or	Coach with table				
		157			Provide a high quality closet fitted with an internal lighting including shelves for clothes and 5 similar hangers for each individual 3 of which fitted with clamps	تصنيف			
		158	License	or	Provide a closet with shelves and clothes hangers				
		159			Safe box in all rooms of a space that accommodates a cell phone size 15 inches				
		160		or	Safe box in all rooms	Class			
		161			Two (2) drinking glasses and (2) juice glasses of high quality	Class			
		162		or	Two (2) water drinking glasses		Class	Class	
		163			Laudry service off site, with list if prices - granted full score if services is provided for more than 12 hours				
		164			Sealable laundry bag for each guest				
		165			Iron and ironing board in good condition	Class	Class	Class	
		166			Provide slippers for each individual				
		167			Full body length mirror	Class			
		168			High quality shelve for luggage (fixed / mobile) separate from closet	Class	Class		
		169			A dresser of unique design and high quality fitted with drawers, a mirror and a chair in th emaster bedroom	Class	Class		

Classification criteria for furnished appartment units

Serial No	Main Elements	Item Number	Regulatory Requirements		Description of Requirements	1st class	2nd class	3rd class	4th class
					tems with several requirements (or) with only one reqirement to be assessed for score while leaving the remaining requirements without assessment				
		170			Sewing kit (needles, threads, buttons etc)				
		171			Excellent stationary (mail envelopes, paper, pens etc)				
		172			A questionnaire of level of satisfaction about services				
		173			A complete guide of services of the hotel including prices in Arabic and English high quality printed and free from defects	Class			
		174			A flat screen TV minimum size of 40" including a remote control				
		175		or	A flat screen TV minimum size of 32" including a remote control and a channel displaying the hotel services	Class	Class		
		176	License	or	A flat screen TV minimum size of 24" including a remote control				
		177			Minimum 30 channels are available on TV with at least 5 of which Saudi channels (according to the rules and regulation notified by related authorities)				
		178		or	Saudi channels pack including specific Arabian or Foreign channels (according to the rules and regulation notified by related authorities)	Class	Class	Class	
		179			Two not used electrical sockets beside the bed and desk				
		180			High quality connectivity internet (WiFi) including cables	Class			
		181		or	Or internet services		Class		
		182	License		High quality prayer mat				
		183			King Fahad Print Press Holy Quran (when requested)				
		184			Complimentary bottled drinking water - daily for each guest	Class			
		185			Soft tissue for hands and face (3)				
		186		or	Tissue for hands and face (2)	Class	Class		
		187		or	Tissue for hands and face (1)			Class	
		188	License		Qubla direction label in clear place				
		189			Free local newspaper every morning	Class			
		190			Lighting control switches for lights in the room and toilet beside bed				
		191			Ash tray (if smoking is permitted)				
		192			Bedside luxurious lighting				
		193	License	or	Suitable bedside lighting				
		194			High quality movable lamp beside the bed for reading				
		195			High quality ground luxurious lamp				
		196		or	Suitable ground lamp	Class			
		197			good lighting for room's entrance				
		198			High quality luxurious lighting on the dresser	Class			
		199			Cooling / heating AC system (central)	Class			
		200	License	or	Heating / cooling AC system (split)				
		201			A door closer	Class			
		202			Provide in-room guidance boards or cards indicating power and water saving for all rooms				
		203			Use power saving lamps (LED, Fluorescent)				
		204			Power efficiency label on all electrical appliances in room (AC and refrigerator)				
		205			The room door, internally, include exit plan in case of emergency				
		206	License		Defect free waste basket				
		207	License		Ceilings, floors, walls furniture and equipment including its related components of unit are in good condition and free from defects				
		208	License		General cleanliness of the unit (ceiling, floors, walls, furniture and equipment) and all its related cpmonents				
		209	License		Kitchen with cupbaords and shelves				
		210			Electric stove with no less than two burners and an oven	Class			
		211		or	Electronic stove with at least two burners		Class		
		212	License	or	Stove				
		213			One fridge with freezer not less than (8 feet²)	Class	Class		
		214	License	or	Mini fridge				
		215	License		A four guest table set (knives, forks, small/big spoons, cups, and drinking glasses)				
		216			Kitchen utensils (water boiler, frying pan, plates, spoons, can opener, toaster, microwave, dishwasher)	Class			
		217	License		Stainless steal sink supplied with hot/cold water and water conservation fixture				
		218			Electronic water boiler	Class	Class		
		219			Sugar packs, and an assortment of coffee and tea (daily complimentary service)	Class			

Classification criteria for furnished appartment units

.Serial No	Main Elements	Item Number	Regulatory Requirements		Description of Requirements	1st class	2nd class	3rd class	4th class
					Items with several requirements (or) with only one reqirement to be assessed for score while leaving the remaining requirements without assessment				
9	**Toilets in Units**	220			Toilet space more than or equal (5m2)				
		221		or	Toilet space more than or equal (4m2)	Class			
		222	License	or	Toilet space more than or equal (3m2)				
		223	License		High quality door ensure complete privacy				
		224			Covering walls and floors of toilets with high quality marble				
		225	License	or	Covering walls and floors of toilet with ceramic				
		226	License		Hot and cold water to be provided all the time				
		227			Telephone in toilets				
		228			High quality shower fitted with a glass/plastic wall with a minimum length of 90cmx90cm	Class			
		229	License	or	Or bathtub				
		230			Suitable handle for shower area	Class	Class		
		231	License	or	A non-slip floor in shower and toilet				
		232			A stainless steel shelve for shower towel	Class	Class		
		233			Two (2) clothes hooks	Class	Class		
		234			High quality toilet seat with lid	Class	Class	Class	
		235	License	or	Water hose beside the toilet or bidet				
		236	License	or	Two (2) high quality tiolet paper rolls				
		237	License	or	Hand basin				
		238			Mirror with light				
		239	License	or	Mirror				
		240			High quality rack for body care products				
		241			Socket for electric razor beside mirror	Class			
		242			High quality digital scale				
		243			Mirror (magnification) with lights				
		244			Hair dryer	Class			
		245			Thick and fine cotton towel (shower) for each individual minimum size 140x70	Class	Class		
		246			Thick and fine cotton towel (hands) for each individual minimum size 70x40	Class			
		247			Thick and fine cotton towel (face) for each individual minimum size 30x30	Class			
		248			Thick floor towel minimum size 50x70	Class			
		249			Fine cotton robe for each guest				
		250	License	or	Soft hand and face tissues				
		251			Unit logo and name is printed on all guestal care and toiletries				
		252			High quality packed soap for each guest	Class			
		253	License	or	Packed soap for each guest				
		254			Shower jel for each guest	Class			
		255			High quality shampoo for each guest	Class			
		256	License	or	Shampoo for each guest				
		257			High quality hair-conditioner for each guest	Class			
		258			High quality body lotion for each guest				
		259			Shower cap				
		260			Tooth brush and tooth paste for each guest upon request	Class			
		261			Shaving tools for each guest				
		262			Cotton swabs				
		263			Comb for each guest				
		264			Retractable clothesline with a base fixed to the wall				
		265	License		Efficient ventilation system (No bad odor)				
		266	License		General lighting				
		267			Use power saving lamps (LED, Fluorescent or compact lamps)				
		268			Install water saving tools in toilet tank, toilet hand hose, basin and shower				
		269			Flap cover waste basket	Class			
		270	License	or	Defect free waste basket				
		271	License		Toilet ceilings, floors, walls, toilets and fittings are free from defects				
		272	License		No water leakage and rust in toilet water fixtures or connections				
		273	License		General cleanliness (ceilings, floors, walls, lavatory, toilet and fixture) including all related items				

Classification criteria for furnished appartment units

Serial No	Main Elements	Item Number	Regulatory Requirements	Description of Requirements	1st class	2nd class	3rd class	4th class
				Items with several requirements (or) with only one reqirement to be assessed for score while leaving the remaining requirements without assessment				
10	Units for People with Special Needs	274	License	Designate at least one room for people with motor impairmentsas per comprehensive access guide				
		275		Room door handles at a hight of 90-120 cm				
		276	License	Minimum width of the room's door is 1 m				
		277		Additional lock and peep hole at a hight of 90-120 cm				
		278	License	All floors are fitted with ceramic or marble and with no use of carpet				
		279		Lighting switches and sockets at a height of 90-120 cm				
		280	License	Bed height is 45-55 cm				
		281		Dresser mirror at a maximum height of 90 cm off the ground				
		282	License	Emergency button in telephone set				
		283		Cloth hooks at a maximum height of 140 cm				
		284	License	Bathroom has a sliding door or one that opens outward and has a minimum width of 1m, a handle at a height of 90-120 cm and no protruding floor beam between the toilet and the room				
		285		Designate 120x150 cm of the bathroom for the toilet seat at a hight of 43-49 cm fitted with hand hose and minimum space of 1m in front of the toilet seat				
		286		All toilet handles, accessories and sockets at a height of 90-120 cm				
		287	License	hand basin with a width of 50 cm and at a height of 72-74 cm including 50 cm long faucet				
		288		Handles for assisting toilet user (vertical and horizontal) beside each (toilet seat, hand wash basin and shower area)				
		289		Non-slip Floors				
		290	License	Shower area at the toilet ground level and shower head at a height of 120-150 cm				
		291		All personal accessories and toiletries are available in toilets	Class	Class	Class	
		292		Suitable ventilation and lighting are available in oder free room and toilets				
11	Units for People with Hearing or Vision Disabilities	293		Door bell, alarm, and telephone to alert persons in room and toilet (audio and visual)				
		294		Availibility of vibrator connected to doorbell or alarm placed under pillow if guest suffers hearing disability				
		295		Provide a device with display screen indicating hotel guide and its services using audio and Sign language, such device switches shall be marked in Arabic, English, Illustration and Braille				
		296		Hotel guide and related services is available in Arabic, English and Braille				
		297		Braille added to all instructions labels in the unit				
		298		Braille added to all toilet fixtures, tioletries and accessories				
		299		Availibility of all personal accessories and toiletries in toilets				
		300	License	Suitable ventilation and lighting are available oder free in room and toilets				
12	Café	301		Acoffee shop operates for(16) hours	Class			
		302	or	Café		Class		
		303		Provide a menu for the café written in Arabic and English indicating the prices (higher score if it is written in Braille)	Class	Class		
		304		Provide (3) types of pastries	Class			
		305		Provide (3) types of desserts	Class			
		306		Provide (3) types of coffee	Class			
		307		Provide (3) types of tea	Class	Class		
		308		Provide (3) types of fresh juice	Class			
		309		Provide (3) flavours of icecream				
		310		Food heaters are available	Class	Class		
		311		Availibility of refrigerator for foods and drinks	Class	Class		
		312		Coffee makers are available	Class	Class		
		313		Matching utensils and cups in good condition and free from defects	Class	Class		
		314		All employees in uniform	Class	Class		
		315		ID badges shall be worn clearly by employees in both Arabic and English	Class	Class		

Classification criteria for furnished appartment units

Serial No.	Main Elements	Item Number	Regulatory Requirements		Description of Requirements	1st class	2nd class	3rd class	4th class
					Items with several requirements (or) with only one reqirement to be assessed for score while leaving the remaining requirements without assessment				
		316			Availibility of a hand wash basin designated for employees away from dish sinks operated automatically without using hands				
		317		or	Hand basin	Class	Class		
		318			Taps fitted with water conservation devices				
		319			Fabric towels shall not used for cleaning, paper towels shall be used istead	Class	Class		
		320			Availibility of hand sanitizer	Class	Class		
		321			Availibility of disposable gloves	Class	Class		
		322			Foot operated waste basket is available in preparation area	Class	Class		
		323			Ceiling, floors, walls, furniture and equipment in the Café and its related components are in good condition and free from defects	Class	Class		
		324			General cleanliness (ceiling, floors, walls, furniture, equipment) in Café and related areas	Class	Class		
13	Public Facilities	325			Prayer area at suitable place is available				
		326		or	A mosque nearby at least 5 minute walking distance				
		327			Cooling / Heating AC system in all facilities				
		328		or	Cooling / Heating AC system in all facilities				
		329			Efficient ventilation system (no bad odor)				
		330			Efficient air freshening/disinfectant devices are available				
		331			Creative lighting is available at all public facilities				
		332		or	Suitable lighting				
		333			Use power saving lamps (LED, Fluorescent or compact lamps).				
		324			Motion sensors are applied to control part of public facilities lighting (prayer, conference room)				
		335			Ceiling, floors, walls, furniture and equipment at public utilities and all related elements is free from defects				
		334			General cleanliness (ceiling, floors, walls, furniture and equipment) at public facilities and its related items				
		337			Sufficient number of waste containers				
14	Recreation Facilities	338			Gym with a minimum area of 40m2 fitted with at least 6 items of sport equipment	Class			
		329			Designated area of at least 20m2 for fitness exercises separate from equipment hall				
		340			Provide indoor or outdoor swimming pool(s) of a minimum area of 50 m2 Swimming pool chairs Qualified life guard certificated in first aid Mark swimming pool depth and provide life savers Safety instructions for swimming pool users	Class			
		341			Designate a swimming pool for children or a suitable depth for children in the main pool				
		542			Availibility of a locker room including hooks, full-legnth mirror and door that lock from the inside	Class			
		343			Availibility of lockers with 3 hooks, shelf, and electronic lock	Class			
		344			Two toilets	Class			
		345			Provide 4 shower areas separate from toilets with a separate door and fitted with all tioletries, body care supplies and towels	Class			
		346			Cooling / Heating AC system (Central) in all leisure areas				
		347		or	Cooling / Heating AC system (Split) in all leisure areas	Class			
		348			Suitable lighting is available in all leisure facilities	Class			
		349			Efficient ventilation system (No foul odors)	Class			
		350			Efficient air freshening/disinfectant devices				
		351			Use power saving lamps (LED, Fluorescent or compact lamps)				
		352			Motion detector lighting is used for lighting entertainment facilities				
		353			Power efficiency labels are available on AC				
		354			All employees in uniform and wearing Arabic / English ID badges	Class			
		355			Availibility of first aid kit as per Red Crecent standards	Class			
		356			Ceiling, floors, walls, furniture and equipment in entertainment areas and all related compmnents are defect free	Class			

Classification criteria for furnished appartment units

.Serial No	Main Elements	Item Number	Regulatory Requirements	Description of Requirements	1st class	2nd class	3rd class	4th class
		357		General cleanliness (ceilings floors, walls, furniture, and equipment) in entertainment facilities and its related components	Class			
		358		Sufficient number of waste containers are available	Class			
15	Management & Staff	359		Annual training plan				
		360	License	Staff only restrooms				
		361		Provide a dining area for employees				
		362		Designate a section for females with separate restrooms as per MoL regulations				
		363	License	Smoking is not allowed for employees during work hours				
		364		Availibility of at least one employee around the clock, certified in first aid by the Saudi Red Crescent (see certificate)				
		365		Implement quality management and client satisfaction program as per specific objectives to treat any faults (see customer satisfaction cards)				

A.4 FRU-Makkah

Classification criteria for furnished appartment units - Makkah and Medina

Serial No	Main Elements	Item Number	Regulatory Requirements		Description of Requirements	1st class	2nd class	3rd class	4th class
1	Building Exterior	1	License		Hotel signboard in Arabic and English in a clear place (lighted, coordinated design, matches the name on the commercial registry - only when up for renewal)				
		2	License		place the hotel classification board in a clear place at entrance (full score is granted on first licensure and classification visit - but requirement should be met upon renewal)				
		3			Use (granite, marble and glass) to cover facades of the building	Class	Class		
		4	License		facades fault free (paint peeling, cracking, exposed wires, water leak stains)				
		5			Provide lighting that allow vision distributed all over the buildings and surrounding areas				
		6			Use power saving lamps (LED, Fluorescent or compact lamps)				
		7			Landscaping around the building while maintaining environment conditions with the provision of green areas				
		8	License		Cleanliness of buildings and all site areas				
		9			Using motion sensor based lighting to control part of external walkways lighting between buildings				
2	External Entrance	10	License		Provide separate main entrance of hotel				
		11			External area of main entrance is shaded	Class			
		12			Provide sufficient areas in front of main entrance for passenger pick up/drop off	Class			
		13			Separate entrance for service	Class			
		14			Provide luxurious decoration outside the main entrance (fountains, sculptures)	Class			
		15	License		Provide low ramps with railing for entrance and exit for special needs people (comprehensive access guide)				
		16			Provide unique lighting with a creative design	Class			
			License	Or	provide good lightings				
		17			Use power saving lamps (LED, or Fluorescent)				
		18			Use double doors (space between the two doors) or revolving door at main entrance				
		19	License		Ceilings, floors, walls, furniture and equipment in lobby and all its elements are in good condition and defect free				
		20	License		General cleanliness of ceilings, floors, walls, furniture and equipment in lobby and all its components				
3	Front Offices (Reception)	21	License		Reception in eminent areas and overlook the main entrance				
		22	License		place operation license, classification certificate and price list approved by SCTH clearly in eminent place in reception (renewal only)				
		23	License		Provide a sign showing the name and contact number of the person in charge who can be accessed all the time (duty manager)				
		24			Provide Arabic / English front office and reception signage	Class	Class	Class	
		25	License		Reception desk or counter				
		26			Comfortable waiting seats and service tables available at reception area	Class			
		27			Credit card and SPAN payment system is available	Class			
		28			provide clocks indicating local time of KSA and other countries				
		29			provide safety deposit boxes in a separate room apart from the reception with full privacy and provided with CCTV				
		30			provide a separate room for guests luggage fitted with racks	Class			
		31			Use luggage ID cards and luggage storage log	Class			
		32	License		Automated software to register guest data				
		33			Provide unique lighting	Class			
			License	or	provide good lighting				
		34			provide a section of front offices designated for special needs people with a maximum height of 90 cm				
		35			All employees in uniform	Class	Class	Class	
		36			ID badge in Arabic / English	Class	Class	Class	
		37	License		Provide complete first aid kit in accordance with red crescent requirements				
		38			Provide a contact number of a medical center that can be called in case of emergency				
		39			Use power saving lamps (LED, Fluorescent or compact lamps)				
		40	License		Ceilings, floors, walls, furniture and equipment in reception must be in good condition and defect free				
		41	License		General cleanliness (ceilings, floors, walls, furniture and equipment) in reception and its components				
4	Lobby	42			Lobby area no less than 100m2				
				or	Lobby area no less than 60m2	Class			
				or	Lobby area no less than 40m2		Class		
			License	or	Lobby area no less than 20m2				
		43			Lobby floors of luxurious material (such as high quality marble, luxurious carpet and rugs)	Class			
			License	or	lobby floors of suitable material				
		44			provide high quality furniture (seating, tables and accessories)	Class			
				or	provide suitable furniture (seating, tables and accessories)		Class	Class	
		45			provide distinctive and artistic sculptures and paintings (higher score for national heritage)				
		46			provide natural plants in unique pots distributed evenly				
		47			Provide Free Wi-Fi service in the lobby area	Class			
		48			Provide electrical sockets beside the seats				
		49			Provide signage and symbols in the lobby indicating the hotel facilities	Class	Class		
		50			Heating / Cooling AC System (Central)				
			License	or	heating and cooling AC system (split)				
		51			Provide unique lighting	Class			
			License	or	provide good lightings				
		52	License		No bad odors				
		53			Use power saving lamps (LED, or Fluorescent)				

Classification criteria for furnished appartment units - Makkah and Medina

Serial No	Main Elements	Item Number	Regulatory Requirements		Description of Requirements	1st class	2nd class	3rd class	4th class
					Items with several requirements (or) with only one reqirement to be assessed for score while leaving the remaining requirements without assessment				
		54	License		Ceilings, floors, walls, furniture and equipment in lobby and all its elements are in good condition and defect free				
		55	License		General cleanliness of ceilings, floors, walls, furniture and equipment in lobby and all its components				
5	Public Toilets	56			Toilets of public facilities (lobby, prayer rooms, halls, restaurant) either grouped or separated must be divided into (males and females) including at least one toilet designated for special needs people in each section.	Class			
			License	or	including at least one toilet designated for special needs people				
		57	License		effective ventilation system (No bad odors)				
		58	License		provide a hand hose beside each toilet				
		59	License		waste basket is available				
		60	License		Toilet paper and hand tissue are available				
		61			Provide automatic flush systems, soap containers and lavatory taps				
		62	License		Suitable lightings distributed in a consistent manner				
		63	License		No water leakage and rust in toilet water fixtures or connections				
		64			Use efficient water saving fittings installed in each tap at basin and lavoratory water hose				
		65			Use power saving lamps (LED, Fluorescent or compact lamps)				
		66			Motion sensor lighting is used for toilet lighting control				
		67			Save water posters				
		68	License		The (ceilings, floors, walls, furniture and equipment) in bathroom and all related components are in good condition and free from defects				
		69			The general cleanliness condition (ceiling, floors, walls and equipment) in bathroom and related components				
6	Stairs & Elevators	70	License		An elevator for every 50 rooms in 3 floor buildings (two floors in addition to the ground floor) or a staircase in 2 floor buildings (ground floor and first floor)				
		71			The space of each elevator is more than or equal 3 m2	Class			
			License	or	space of each elevator is 2 m2				
		72			Provide a mirror inside the elevator or stairs in buildings of 2 floors or less				
		73			Elevator or stairs interior include luxurious installations and decorations				
		74			Elevator can be operated with the room key card				
		75			elevators and stairs must be provided with required fittings for special needs people as follows: elevator switch board internally and externally includes Braille Lettering at a height of 90 cm. Minimum width of elevator door is 90 cm. Provide railing along the walls of the elevator internally. Provide audio-visual lighted panel inside and outside the elevator indicating the floor the elevator stops.	Class			
		76	License		Effective and automatic ventilation system (no bad odors)				
		77	License		Suitable lighting is available in the elevator and stairs				
		78			Use power saving lamps (LED, Fluorescent or compact lamps)				
		79			All elevators are provided with intercom to reception (emergency)				
		80			Do not use elevator in case of Fire warning signage is available. The signage shall be placed beside the elevator door externally in all floors in Arabic and English				
		81	License		Elevator and stairs (ceiling, floors, walls, and lights) are in good condition and defects free				
		82	License		General cleanliness of elevators and stairs (ceilings, floors, walls, lighting) including its related components				
		83			separate elevator for support services	Class			
7	Corridors	84			Minimum width of corridors is 1.80 m	Class			
			License	or	Corridors width shall not be less than 1.50 m				
		85			Provide luxurious and high density carpets for corridors floors	Class			
			License	or	provide suitable quality and material carpet for the floors of corridors				
		86			Provide a room in each floor designated for the janitor trolley and tools	Class			
		87	License		provide guidance signage indicating (floor number, directions and room numbers) in front of elevator and in corridors				
		88			Shoe polisher in each floor near elevator				
		89			distinctive and artistic decorations and paintings including natural plants in corridors	Class			
		90			Fixed phone inside	Class			
		91			Convenience seats beside elevator in each floor				
		92			Heating / Cooling AC System (Central)				
				or	heating / cooling AC system	Class			
		93	License		Effective air freshening devices(no foul odors)				
		94	License		Suitable lighting				
		95			Use power saving lamps (LED, Fluorescent or compact lamps)				
		96			Power efficiency label on AC equipment is available				
		97			Motion sensors lighting means is used to control corridors internal lighting				
		98	License		waste baskets are available in front of each elevator in each floor				
		99	License		The (ceilings, floors, walls, furniture and equipment) in Corridors and all related components are in good condition and free from defects				
		100	License		The general cleanliness condition (ceiling, floors, walls and equipment) in corridors and related components				
8	Units	101			Room space is more than or equal to 60 m2 including bedroom, sitting room, kitchen, toilet and corridor				
				Or	Room area is no less than 50m2 including the bedroom, sitting room, kitchen, toilet and corridor	Class			
				Or	Room area is no less than 40m2 including the bedroom, sitting room, kitchen, toilet and corridor		Class		
			License	Or	Room area is no less than 32m2 including the bedroom, sitting room, kitchen, toilet and corridor				
		102			minimum area for master bedroom w/o bath is 20m2 for two guests				

Classification criteria for furnished appartment units - Makkah and Medina

Serial No	Main Elements	Item Number	Regulatory Requirements	Items with several requirements (or) with only one reqirement to be assessed for score while leaving the remaining requirements without assessment — Description of Requirements	1st class	2nd class	3rd class	4th class
			Or	minimum area for master bedroom w/o bath is 18m2 for two guests	Class			
			Or	minimum area for master bedroom w/o bath is 16m2 for two guests		Class		
			License / Or	minimum area for master bedroom w/o bath is 12m2 for two guests				
		103	License	Separate entrance and number is provided for each unit				
		104		soundproof unit	Class			
		105	License	Availibity of peephole on all unit entrance doors				
		106		Card electronic lock system is available for all rooms	Class			
		107	License	Manual locket is available internally for privacy				
		108		Additional locket is available internally	Class			
		109		Provide lighted board beside the door externally, internally controlled, indicating (do not disturb - make up the room)				
			Or	provide excellent cards requesting the service e.g. do not disturb, make up the room) hang on door handle internally	Class	Class		
		110		Provide creative room design with creative touches (gypsum or wood decorations, wall paper)	Class			
			Or	suitable pattern of room design		Class	Class	
		111		Use high quality and luxurious carpet covers the room floor. If using marble, ceramic, or wood, provide luxurious rugs beside the bed and sitting room	Class			
		112		provide artistic paintings hang on walls	Class			
		113		Provide a balcony separated from the room with heatproof and soundproof glass allowing natural lighting				
			Or	provide heatproof and soundproof glass window allow natural lighting	Class			
			License / Or	Glass window for each unit				
		114		provide blackout curtains	Class	Class	Class	
		115		provide a good design and high quality curtains	Class			
			License / Or	Suitable curtains				
		116		minimum size of single bed is 90x190 cm and double bed is 180x200 cm	Class	Class		
			License / Or	minimum size of single bed is 80x190 cm and double bed is 180x200 cm				
		117		Provide a luxurious mattress with a minimum thickness 30 cm				
			Or	luxurious mattress with a minimum thickness 20 cm minimum	Class			
			License / Or	suitable mattress				
		118		Provide a complete set of bed sheets of high quality including: bed mattress cover, 2 fitted and flat sheets, and one bed comforter of white or light color	Class			
			License / Or	provide suitable quality bed sheets including: bed mattress cover, one bed comforter, pillow case, and a blanket of white or light color				
		119		Two (2) luxurious pillow are available for each person	Class			
			License / Or	(1) suitable pillow is available for each person				
		120		Additional pillow and blanked is available in closet				
		121		Two (2) bedside table for double bed are available	Class	Class		
		122		One (1) bedside tables for each bed (double bed room)	Class	Class		
		123		Two high tech telephones in master boodroom and sitting room indicating the hotel services (on the device) in Arabic and English	Class			
		124	Or	telephone sitting room		Class	Class	
		125		Two armchairs/ coaches with a table	Class			
			License / Or	coach with table				
		126		Provide a high quality closet fitted with an internal lighting including shelves for clothes and 5 similar hangers for each individual 3 of which fitted with clamps	Class			
			License / Or	provide a closet with shelves and clothes hangers				
		127		Safe box in all rooms of a space that accommodates a cell phone size 15 inches				
			Or	safe box in all rooms	Class			
		128		Two (2) drinking glasses and (2) juice glasses of high quality	Class			
			Or	two (2) water drinking glasses		Class	Class	
		129		Laudry service off site, with list if prices - granted full score if services is provided for more than 12 hours				
		130		Sealable laundry bag for each guest				
		131		Iron and ironing board in good condition	Class	Class	Class	
		132		Provide slippers for each individual				
		133		Full body length mirror	Class			
		134		High quality shelve for luggage (fixed / mobile) separate from closet	Class	Class		
		135		A dresser of unique design and high quality fitted with drawers, a mirror and a chair in the emaster bedroom	Class	Class		
		136		Sewing accessories (needles, threads, buttons etc)				
		137		Excellent stationary (mail envelopes, paper, pens etc)				
		138		A questionnaire of level of satisfaction about services				
		139		A complete guide of services of the hotel including prices in Arabic and English high quality printed and free from defects	Class			
		140		A flat screen TV minimum size of 40" including a remote control				
		141	or	A flat screen TV minimum size of 32" including a remote control and a channel displaying the hotel services	Class	Class		
			License / or	A flat screen TV minimum size of 24" including a remote control				
		142		Minimum 30 channels are available on TV with at least 5 of which Saudi channels (according to the rules and regulation notified by related authorities)				
		143	or	Saudi channels pack including specific Arabian or Foreign channels (according to the rules and regulation notified by related authorities)	Class	Class	Class	
		144		Two not used electrical sockets beside the bed and desk				

Classification criteria for furnished appartment units - Makkah and Medina

Serial No	Main Elements	Item Number	Regulatory Requirements	or	Description of Requirements	1st class	2nd class	3rd class	4th class
		145			High quality connectivity internet (WiFi) including cables	Class			
				or	internet services		Class		
		146	License		High quality prayer mat				
		147			King Fahad Print Press Holy Quran (when requested)				
		148			Complimentary bottled drinking water - daily for each guest	Class			
		149			Soft tissue for hands and face (3)				
		150		or	tissue for hands and face (2)	Class	Class		
				or	tissue for hands and face (1)			Class	
		151	License		Qubla direction label in clear place				
		152			Free local newspaper every morning	Class			
		153			Lighting control switches for lights in the room and toilet beside bed				
		154			Ash tray (if smoking is permitted)				
		155			Bedside luxurious lighting				
			License	or	suitable bedside lighting				
		156			High quality movable lamp beside the bed for reading				
		157			High quality ground luxurious lamp				
				or	suitable ground lamp	Class			
		158			good lighting for room's entrance				
		159			High quality luxurious lighting on the dresser	Class			
		160			Cooling / heating AC system (central)	Class			
			License	or	heating / cooling AC system (split)	Class			
		161			A door closer	Class			
		162			Provide in-room guidance boards or cards indicating power and water saving for all rooms				
		163			Use power saving lamps (LED, Fluorescent)				
		164			Power efficiency label on all electrical appliances in room (AC and refrigerator)				
		165			The room door, internally, include exit plan in case of emergency				
		166	License		Defect free waste basket				
		167	License		Ceilings, floors, walls furniture and equipment including its related components of unit are in good condition and free from defects				
		168	License		General cleanliness of the unit (ceiling, floors, walls, furniture and equipment) and all its related epmoenents				
		169	License		Kitchen with cupboards and shelves				
		170			Electric stove with no less than two barners and an oven	Class			
				or	electronic stove with at least two burners		Class		
			License	or	stove				
		171			Refrigerator with freezer with a capacity of not less than 8 cubic feet	Class	Class		
			License	or	Mini fridge				
		172	License		A four person table set (knives, forks, small/big spoons, cups, and drinking glasses)				
		173			kitchen utensils (water boder, frying pan, plates, spoons, can opener, toaster, microwave, dishwasher)	Class			
		174	License		stainless steal sink supplied with hot/cold water and water conservation fixture				
		175			electronic water boiler	Class	Class		
		176			sugar packs, and an assortment of coffee and tea (daily complimentary service)	Class			
9	Toilets in Units	177			Toilet space more than or equal (5m2)				
				Or	Toilet space more than or equal (4m2)	Class			
			License	Or	Toilet space more than or equal 3m2				
		178	License		High quality door ensure complete privacy				
		179			Covering walls and floors of toilets with high quality marble				
			License	or	covering walls and floors of toilet with ceramic				
		180	License		Continuous supply of hot and cold water				
		181			Telephone in toilets				
		182			High quality shower fitted with a glass/plastic wall with a minimum length of 90cmx90cm	Class			
			License	or	bathtub				
		183			Suitable handle for shower area	Class	Class		
		184	License		A non-slip floor in shower and toilet				
		185			A stainless steel shelve for shower towel	Class	Class		
		186			Two (2) clothes hooks	Class	Class		
		187			High quality toilet seat with lid	Class	Class	Class	
		188	License		Water hose beside the toilet or bidet				
		189	License		Two (2) high quality tiolet paper rolls				
		190	License		hand basin				
		191			Mirror with light				
			License	or	Mirror				
		192			High quality rack for body care products				
		193			Socket for electric razor beside mirror	Class			
		194			High quality digital scale				
		195			Mirror (magnification) with lights				
		196			Hair dryer	Class			
		197			Thick and fine cotton towel (shower) for each individual minimum size 140x70	Class	Class		
		198			Thick and fine cotton towel (hands) for each individual minimum size 70x40	Class			
		199			Thick and fine cotton towel (face) for each individual minimum size 30x30	Class			

Classification criteria for furnished appartment units - Makkah and Medina

Serial No	Main Elements	Item Number	Regulatory Requirements	Items with several requirements (or) with only one reqirement to be assessed for score while leaving the remaining requirements without assessment — Description of Requirements	1st class	2nd class	3rd class	4th class
		200		Thick floor towel minimum size 50x70	Class			
		201		Fine cotton robe for each person				
		202	License	Soft hand and face tissues				
		203		Unit logo and name is printed on all personal care and toiletries				
		204		High quality packed soap for each person	Class			
			License or	packed soap for each guest				
		205		shower jel for each person	Class			
		206		High quality shampoo for each person	Class			
			License Or	shampoo for each person				
		207		High quality hair-conditioner for each person	Class			
		208		High quality body lotion for each person				
		209		Shower cap				
		210		Tooth brush and tooth paste for each person upon request	Class			
		211		Shaving tools for each person				
		212		Cotton swabs				
		213		Comb for each person				
		214		Retractable clothesline with a base fixed to the wall				
		215	License	Efficient ventilation system (No bad odor)				
		216	License	General lighting				
		217		Use power saving lamps (LED, Fluorescent or compact lamps)				
		218		Install water saving tools in toilet tank, toilet hand hose, basin and shower				
		219		Flap cover waste basket	Class			
			License or	Defect free waste basket				
		220	License	Toilet ceilings, floors, walls, toilets and fittings are free from defects				
		221	License	No water leakage and rust in toilet water fixtures or connections				
		222	License	General cleanliness (ceilings, floors, walls, lavatory, toilet and fixture) including all related items				
10	Units for the Handicapped	223	License	Designate at least one room for people with motor impairments as per comprehensive access guide				
		224		Room door handles at a hight of 90-120 cm				
		225	License	Minimum width of the room's door is 1 m				
		226		Additional lock and peep hole at a hight of 90-120 cm				
		227	License	All floors are fitted with ceramic or marble and with no use of carpet				
		228		Lighting switches and sockets at a height of 90-120 cm				
		229	License	Bed height is 45-55 cm				
		230		Dresser mirror at a maximum height of 90 cm off the ground				
		231	License	Emergency button in telephone set				
		232		Cloth hooks at a maximum height of 140 cm				
		233	License	Bathroom has a sliding door or one that opens ourward and has a minimum width of 1m, a handle at a height of 90-120 cm and no protruding floor beam between the toilet and the room				
		234		Designate 120x150 cm of the bathroom for the toilet seat at a hight of 43-49 cm fitted with hand hose and minimum space of 1m in front of the toilet seat				
		235		All toilet handles, accessories and sockets at a height of 90-120 cm				
		236	License	hand basin with a width of 50 cm and at a height of 72-74 cm including 50 cm long faucet				
		237		Handles for assisting toilet user (vertical and horizontal) beside each (toilet seat, hand wash basin and shower area)				
		238		Non-slip Floors				
		239	License	Shower area at the toilet ground level and shower head at a height of 120-150 cm				
		240		All personal accessories and toiletries are available in toilets	Class	Class	Class	
		241		Suitable ventilation and lighting are available in oder free room and toilets				
11	Units for vision and hearing impaired	242		Door bell, alarm, and telephone to alert persons in room and toilet (audio and visual)				
		243		Availibility of vibrator connected to doorbell or alarm placed under pillow if guest suffers hearing disability				
		244		Provide a device with display screen indicating hotel guide and its services using audio and Sign language, such device switches shall be marked in Arabic, English, Illustration and Braille				
		245		Hotel guide and related services is available in Arabic, English and Braille				
		246		Braille added to all instructions labels in the unit				
		247		Braille added to all toilet fixtures, toiletries and accessories				
		248		Availibility of all personal accessories and toiletries in toilets				
		249	License	Suitable ventilation and lighting are available oder free in room and toilets				
12	Café/Cafeteria	250		café that opens 16 hrs	Class			
			or	a café		Class		
		251		provide a menu for the café written in Arabic and English indicating the prices (higher score if it is written in Braille)	Class	Class		
		252		Provide (3) types of pastries	Class			
		253		Provide (3) types of desserts	Class			
		254		Provide (3) types of coffee	Class			
		255		Provide (3) types of tea	Class	Class		
		256		Provide (3) types of fresh juice	Class			

Classification criteria for furnished appartment units - Makkah and Medina

Serial No	Main Elements	Item Number	Regulatory Requirements	Description of Requirements	1st class	2nd class	3rd class	4th class
				Items with several requirements (or) with only one reqirement to be assessed for score while leaving the remaining requirements without assessment				
		257		Provide (3) flavours of icecream				
		258		Food heaters are available	Class	Class		
		259		Availibility of refrigerator for foods and drinks	Class	Class		
		260		Coffee makers are available	Class	Class		
		261		matching utensils and cups in good condition and free from defects	Class	Class		
		262		All employees in uniform	Class	Class		
		263		ID badges shall be worn clearly by employees in both Arabic and English	Class	Class		
		264		Availibility of a hand wash basin designated for employees away from dish sinks operated automatically without using hands				
			or	hand basin	Class	Class		
		265		Taps fitted with water conservation devices				
		266		Fabric towels shall not used for cleaning, paper towels shall be used istead	Class	Class		
		267		Availibility of hand sanitizer	Class	Class		
		268		Availibility of disposable gloves	Class	Class		
		269		Foot operated waste basket is available in preparation area	Class	Class		
		270		Ceiling, floors, walls, furniture and equipment in the Café and its related components are in good condition and free from defects	Class	Class		
		271		General cleanliness (ceiling, floors, walls, furniture, equipment) in Café and related areas	Class	Class		
13	**Public Facilities**	272		Prayer area at suitable place is available				
			or	a mosque nearby at least 5 minute walking distance				
		273		Cooling / heating AC system in all facilities				
			or	heating / cooling AC system in all facilities				
		274		Efficient ventilation system (no bad odor)				
		275		Efficient air freshening/disinfectant devices are available				
		276		Creative lighting is available at all public facilities				
			Or	Suitable lighting				
		277		Use power saving lamps (LED, Fluorescent or compact lamps).				
		278		Motion sensors are applied to control part of public facilities lighting (prayer, conference room)				
		279		Ceiling, floors, walls, furniture and equipment at public utilities and all related elements is free from defects				
		280		General cleanliness (ceiling, floors, walls, furniture and equipment) at public facilities and its related items				
		281		Sufficient number of waste containers				
14	**Recreation Facilities**	282		Gym with a minimum area of 40m2 fitted with at least 6 items of sport equipment	Class			
		283		Designated area of at least 20m2 for fitness exercises separate from equipment hall				
		284		Provide indoor or outdoor swimming pool(s) of a minimum area of 50 m2. Swimming pool chairs. Qualified life guard certificated in first aid. Mark swimming pool depth and provide life savers. Safety instructions for swimming pool users.	Class			
		285		Designate a swimming pool for children or a suitable depth for children in the main pool				
		286		Availibility of a locker room including hooks, full-length mirror and door that lock from the inside	Class			
		287		Availibility of lockers with 3 hooks, shelf, and electronic lock	Class			
		288		Two toilets	Class			
		289		Provide 4 shower areas separate from toilets with a separate door and fitted with all tioletries, body care supplies and towels	Class			
		290		Cooling / heating AC system (central) in all leisure areas				
			or	heating / cooling (split) AC is available in all leisure areas	Class			
		291		Suitable lighting is available in all leisure facilities	Class			
		292		Efficient ventilation system (No foul odors)	Class			
		293		Efficient air freshening/disinfectant devices				
		294		Use power saving lamps (LED, Fluorescent or compact lamps)				
		295		Motion detector lighting is used for lighting entertainment facilities				
		296		Power efficiency labels are available on AC				
		297		All employees in uniform and wearing Arabic / English ID badges	Class			
		298		Availibility of first aid kit as per Red Crecent standards	Class			
		299		Ceiling, floors, walls, furniture and equipment in entertainment areas and all related compoments are defect free	Class			
		300		General cleanliness (ceilings floors, walls, furniture, and equipment) in entertainment facilities and its related components	Class			
		301		Sufficient number of waste containers are available	Class			
15	**Management & Staff**	302		Annual training plan				
		303	License	Staff only restrooms				
		304		Provide a dining area for employees				
		305		Designate a section for females with separate restrooms as per MoL regulations				
		306	License	Smoking is not allowed for employees during work hours				
		307		availibility of at least one employee around the clock, certified in first aid by the Saudi Red Crescent (see certificate)				

Classification criteria for furnished appartment units - Makkah and Medina

Serial No	Main Elements	Item Number	Items with several requirements (or) with only one reqirement to be assessed for score while leaving the remaining requirements without assessment					
			Regulatory Requirements		Description of Requirements	1st class	2nd class	3rd class	4th class
		208			Implement quality management and client satisfaction program as per specific objectives to treat any faults (see customer satisfaction cards)				

Appendix B

Email Communication—Retail

Christian Baldonanza <connect@mecsc.org>
30/12/2019 03:03 PM

To: MALICK, IRFAN Y.

Urban Land Institute and JLL...
110.35 KB

Hi Malick,

As discussed, please find attached summary of shopping centre sizes for your reference.

All the best for your studies! Do well!

Thanks and Happy New Year!

Best Regards,

Ian

Christian B. | Registration and Digital Content Executive

A: Unit 507, 5th Floor, Arenco Tower, Media City, Sheikh Zayed Road P.O. Box 43972, Dubai, UAE
T: +971 4 359 7909 **ext. 16** | **M:** +971 52 633 2930
**E:** connect@mecsc.org | www.mecsc.org | www.retailcongressmena.com

2020 MECS+R CALENDAR OF ACTIVITIES, EVENTS AND PUBLICATIONS

February 2020:	The Retail People Magazine - Q1 Issue	September 2020:	SPRINGBOARD Networking Event Oman
March 2020:	The MECS+R Directory 2020	September 2020:	SPRINGBOARD Networking Event Jordan
March/April 2020:	Retail Congress Forum Riyadh, Saudi Arabia	September 2020:	SPRINGBOARD Networking Event Kuwait
April 2020:	Intensive Retail Masterclass, Riyadh, Saudi Arabia	September 2020:	SPRINGBOARD Networking Event, Riyadh, Saudi Arabia
May 2020:	The Retail People Magazine — Q2 Issue	October 25-27, 2020:	RETAIL CONGRESS MENA, Dubai, UAE
May 2020:	SPRINGBOARD Networking Event, Azerbaijan	October 27, 2020:	MENA Awards Presentation and Gala Dinner, Dubai, UAE
June 15 – 18, 2020:	Gregory Vogt School (GVS) for Retail Professionals, Dubai, UAE	October 2020:	The Retail People Magazine — Q4 Issue
June 16, 2020:	SPRINGBOARD Networking Event, Dubai, UAE	November 2020:	SPRINGBOARD NETWORKING EVENT, Jeddah, Saudi Arabia
August 2020:	The Retail People Magazine — Q3 Issue		

Appendix C

Email Communication–Ministry of Tourism

We contacted the Ministry of Tourism to request for data access. They responded they were unable to provide such information.
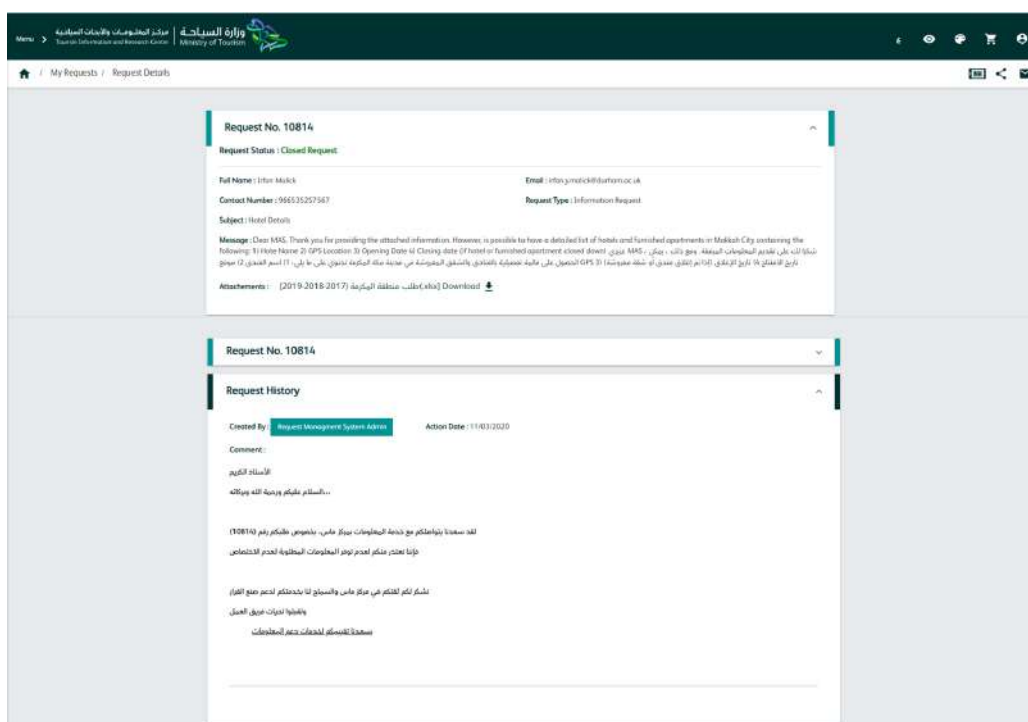
Translation of above Arabic Text from Google Translate:

Honorable Professor

Peace, mercy and blessings of God,,,

We were pleased to communicate with the information service of the MAS Center, regarding your request No. (10814)

We apologize for not having the required information for lack of jurisdiction We thank you for your trust in the MAS Center and allow us to serve you to support decision-making

Please accept the greetings from the team

We are pleased with your evaluation of information support services.

Appendix D

Email Communication–STR

STR was the main data source to acquire information on Hotels. The images below capture our communication with them.

From: MALICK, IRFAN Y.
Sent: 18 March 2020 09:13 AM
To: Duane Vinson
Subject: RE: Basis of Inclusion

Hi Duane,

Understood, but they do exist.

Please see this
page: https://mt.gov.sa/en/TourismInvestment/TourismLicensing/Pages/Tour1.aspx

It contains the currently licenses hotels and furnished apartments. I hope this help improve STR's databanks.

Thanks.

Regards,

Irfan Malick

+966-53-525-7567

From: Duane Vinson
Sent: 18 March 2020 01:09 AM
To: MALICK, IRFAN Y.
Subject: RE: Basis of Inclusion

We may just not know that some of those hotels exist in order to include them.

From: MALICK, IRFAN Y. [mailto:irfan.y.malick@durham.ac.uk]
Sent: Tuesday, March 17, 2020 4:30 PM
To: Duane Vinson <dvinson@str.com>
Subject: RE: Basis of Inclusion

EXTERNAL EMAIL
Hi Duane,

Thanks for the answers, but any particular reason why 1-star and 2-star hotels are not covered in Makkah's Sub-market?

Regards,

Irfan Malick

+966-53-525-7567

From: Duane Vinson
Sent: 18 March 2020 12:22 AM
To: MALICK, IRFAN Y.
Subject: RE: Basis of Inclusion

Irfan,

For an establishment to be included in the STR census database it must have 10 rooms or more (although we do make some exceptions), rent on a nightly basis, and rent to the public.

Duane

From: MALICK, IRFAN Y. [mailto:irfan.y.malick@durham.ac.uk]
Sent: Tuesday, March 17, 2020 4:12 AM
To: STR-sharecenter <sharecenter@str.com>
Subject: Basis of Inclusion

EXTERNAL EMAIL
Dear Share Centre,

Quick question, one what basis are hotels included to the Makkah Census Existing Supply Report?

Thanks.

Regards,

Irfan Malick

+966-53-525-7567

Appendix E

Hotel Chains Considered as Branded

Hotel Brands	
Brand	Code
Best Western Plus	Brand
Conrad	Brand
Double Tree	Brand
Fairmont	Brand
Four Points	Brand
Golden Tulip	Brand
Hilton	Brand
Holiday Inn	Brand
Hyatt	Brand
ibis Styles	Brand
Independent	Unbranded
InterContinental	Brand
Le Meridien	Brand
Marriott	Brand
Mercure	Brand
Metropolitan	Brand
Millennium	Brand
Moevenpick	Brand
Novotel	Brand
Park Inn	Brand
Pullman	Brand
Raffles	Brand
Ramada	Brand
Rayhaan by Rotana	Unbranded
Shaza	Unbranded
Sheraton Hotel	Brand
Sofitel	Brand
Swissotel	Brand
Not Applicable	Independent

Appendix F

Ethics Clearance

Durham Business School

FORM DP7A ETHICS IN RESEARCH

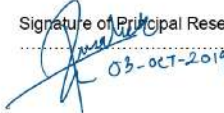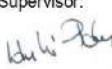**Process flow chart for students and staff undertaking research**

Note: all research can potentially raise ethical issues. The focus here is on research involving human participants, but consideration should also be given to ethical issues that may arise in connection with research that does not involve human participants. In all cases research is governed by the University's "Policy for the maintenance of good practice in research" which is available at http://dbs-internal.dur.ac.uk/ethics and should be read in conjunction with this process flow chart. This process flow chart applies to each discrete research project and it is suggested that this flow chart is completed for each such project.

Please complete the details as requested below and highlight either 'YES' or 'NO' after each box to show your route through the flow chart. "DBS SCE" refers to Durham Business School's Sub-Committee for Ethics throughout.

Title of Project: ...**Evolutionary Strategic Management based on Organisational Community Ecology: An Example from Saudi Real Estate**

Name of Principal Researcher
or anonymous code of student: ......**Irfan Malick**..
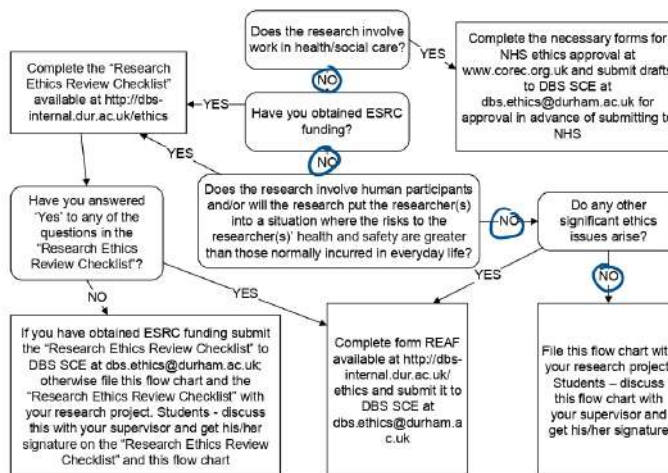
Signature of Principal Researcher or Supervisor:
.... 03-OCT-2019

Appendix G

Data Analysis Files

Researchers are requested to contact the author to obtain the data analysis file with the execution commands for replications. Researchers can reach the author at imalick@outlook.com.