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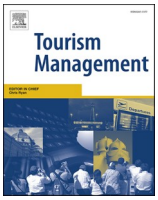

# (Re)Creating spaces for tourism: Spatial effects of the 2010/ 2011 Christchurch earthquakes

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ABSTRACT

This paper applies an economic geographical perspective and Niche Construction Theory (NCT) to the spatial effects of the Christchurch earthquakes on the city's tourism and hospitality spaces. An analysis of policy and planning documents, relevant reports, and twenty-four semi-structured interviews with key stakeholders forms the empirical basis. Niche Construction Theory (NCT) offers an analytical framework to interpret the environmental selection pressures and key stakeholders' responses in the evolving environment. This paper illustrates the spatial reconstruction processes pertaining to urban tourism and the related hospitality industry after a major natural disaster. Emerging themes include displacement and relocation, demographic changes and market shifts for hospitality businesses.

## 1. Introduction

The effects of high impact natural disasters on an urban tourism system are not well understood. The literature on tourism destination management generally operationalises disaster and crisis management as a cyclic process that emphasises pro-active planning and strategic action (Faulkner, 2001; Pforr, 2009; Ritchie and Campiranon, 2015). These conceptualised processes commonly include a learning phase that acts as a precursor of evidence-based creative processes that aim to modify the frameworks for disaster preparedness and response (Afedzie and McEntire, 2010; Sahebjamnia, Torabi, and Mansouri, 2015). The relevant economic geography literature emphasises the causal relationships between a regional economic landscape and possible post-disaster transformations of its socio-political and built environments, and the resultant reorganisation of tourism spaces (Brouder and Eriksson, 2013; Hall, Prayag, and Amore, 2018; Orchiston, 2012; Russell & Faulkner, 2004). This empirically based paper explores the spatial effects of the 2010/2011 Christchurch earthquakes with a view of identifying and explaining how spaces for tourism are re-created in and around the Central Business District (CBD) post-disaster. The urban renewal process in New Zealand's (NZ) second largest city is characterised by a variety of external and internal factors that the tourism and hospitality businesses must negotiate. Recovery governance includes policy interventions, external and internal catalyst investments, changes in resident and visitor demography, organic (re)growth and (re)organisation of the economic hotspots, and entrepreneurial responses to business volatility.

The earthquake on February 22, 2011 was the most destructive natural disaster in NZ since the Napier earthquake of 1931. Before it, the city of Christchurch generated over 70% of the Canterbury region's economic output, accounting for 10% of NZ's Gross Domestic Product (GDP) (Christchurch City Council, 2011). Tourism contributed 8% of the regional GDP and 11% of the employment (Christchurch City Council, 2011). Canterbury's share of international visitor arrivals was 22% in 2010; at the time, the central city attracted 1.8 million visitors annually who spent more than NZ$ 2.7 billion in the region (Christchurch and Canterbury Tourism, 2011). A series of more than 11,000 earthquakes between 2010 and 2011 changed Christchurch forever (Canterbury Earthquake Recovery Authority, 2014). The earthquakes and aftershocks directly affected 460,000 people in the Canterbury region; 185 lives were lost, and injury, stress and mental trauma continue to affect parts of the population (Greater Christchurch Group, 2017). The damage to the built environment was estimated at NZ$ 40 billion (New Zealand Trade and Enterprises, 2016), making it the costliest natural disaster in NZ to date (Canterbury Earthquake Recovery Authority, 2016) and effecting the most expensive and extensive urban renewal initiative to date (Greater Christchurch Group, 2017).

Previous academic studies of the disaster and related processes from

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a tourism or hospitality perspective focuses on resilience, often using a quantitative approach (Hall et al., 2018; Nilakant et al., 2016; Orchiston, Prayag, & Brown, 2016; Prayag & Orchiston, 2016; Resilient New Zealand, 2015; Stevenson, Seville, Kachali, Vargo, & Whitman, 2011). This qualitative case study research traces the spatial evolution of the CBD after the 2010/2011 earthquakes through its tourism and hospitality businesses. An economic geography perspective and Niche Construction Theory (NCT) are used to frame the interdisciplinary discussion of the complexities as evident from the views of key stakeholders as well as through documents pertaining to the urban recovery and renewal process. In doing so, NCT is introduced into tourism crisis research.

## 2. Evolutionary economic geography and urban tourism

Investigating "the uneven distribution of economic activities across space" (Boschma & Frenken, 2011, p. 286), economic geography focuses on the relationships between economic activities and the spaces where it takes place (Martin & Sunley, 2010). As the spatial organisation of any industry varies by location depending on its environment, Brouder and Eriksson (2013, p. 371) posit Evolutionary Economic Geography (EEG) as an approach to understand how "the spatial economy *self-transforms* [emphasis added] through irreversible and dynamic processes of economic novelty emerging from the micro-behaviour of economic agents such as individuals and firms". Brouder (2012) states that existing studies of EEG in the context of tourism primarily apply the concepts of path dependence and co-evolution of (tourism) paths to regional tourism development. Brouder and Ioannides (2014, p. 423) further note that the few studies in urban tourism that adopt EEG utilise individual entrepreneurs as key subjects and units of analysis, and that "there have been no cases of EEG and tourism in metropolitan settings". They argue that examining the micro-processes in the spatial evolution of urban tourism is a path to a better understanding of its dynamics in a context where tourism is virtually indistinguishable from other, simultaneously occurring economic activities. It is for this reason that this study adopts the tenets of EEG, as evident in the presentation and discussion of the findings in this paper.

Perhaps the most important aspect of urban tourism is that the related activities and behaviours are by no means confined to the visitors (Hayllar, Griffin, & Edwards, 2007). Indeed, residents and commuters are typically the majority users of the city infrastructure and even attractions. Cities are thus centres of consumption where tourism *can* play a significant role (Edwards, Griffin, & Hayllar, 2008; Judd & Fainstein, 1999; Law, 1996). Urban (tourism) spaces are subject to the complex relationships and nonlinear interactions of the economic players (Esperdy, 2002), pertinent resource use or exploitation patterns, and gradual changes or sudden disruptions affecting the urban environment more generally (Rodin, 2014). Yet, despite the unpredictability of urban tourism as a spatial-temporal phenomenon (Getz, 2008), it is a preferred option for policymakers to revitalise the urban centres. Tourism-based urban regeneration strategies recreate spaces for leisure and tourism (Spirou, 2011; hence the focus on tourism *and* hospitality in this study). Furthermore, Amore and Hall (2016) suggest that the phenomenon of regeneration in the context of post-disaster urban recovery is overlooked within the discourses pertaining to post-disaster recovery. While there is anecdotal evidence that urban tourism helps cities come back from both natural disasters and human-induced crises, there is a lack of systematic analysis and connections to theory and concepts, which inhibits a nuanced understanding (Maitland & Ritchie, 2009).

Urban hospitality spaces as a destination (Esperdy, 2002) in urban mobility have received a disproportionately small amount of attention. In a post-disaster context, contextual studies (such as Brown, Stevenson, Giovinazzi, Seville, & Vargo, 2015)(Kachali et al., 2015; Parker & Steenkamp, 2012; Stevenson et al., 2011) address the necessary flexibility and diversity of the hospitality industry and report that a significant number of hospitality businesses withstand inherent uncertainties and adapt to the non-linear behaviour of the tourism system. However, the transformative impacts of the post-disaster urban recovery process and the spatiotemporal vulnerabilities of the hospitality sector are not acknowledged. The aforementioned gaps in the literature on tourism crisis management suggests the need for hospitality sector-specific empirical study to explore the insights into the phenomenon of spatial-temporal evolution of urban (tourism) spaces in a post-disaster context.

As EEG can facilitate explanations of the spatial development of the tourism economy in urban centres, why, where and when clusters emerge (Brouder & Eriksson, 2013; Porter, 2000), Brouder and Ioannides (2014) suggest that EEG is a useful perspective to comprehend shifts in urban tourism spaces during the aftermath of socio-economic crises. The study presented in this paper therefore offers a unique opportunity to test the applicability of the tenets of EEG in post-disaster urban tourism and hospitality as part of urban renewal. In line with Brouder and Ioannides's (2014) view that the change process needs to be analysed at both the regional and individual business levels, this study includes the views of hospitality entrepreneurs as well as key agents at the regional level as part of its empirical basis.

In EEG, the units of analysis are not the spatial units (e.g. regions) but, as Essletzbichler and Rigby (2010) posit, a population with heterogeneous entities. A tourism sector may thus be conceptualised as a conglomeration of different sub-sectors with interactive development paths. The spatial unit, i.e. the region, is merely the selection environment in the evolutionary process.

Brouder and Ioannides (2014, p. 736) note that basic evolutionary approaches in tourism studies at destination level have been profoundly influenced by the Tourist Area Life Cycle (TALC) of Butler (1980), "while it has drawn much critique for its apparent deterministic view of tourism development as well as its lack of consideration of endogenous change" (Brouder & Ioannides, 2014, p. 376). They refer to the attempts of tourism scholars to advance the concepts of TALC and conclude that the modified models like Martin (2009) conceptually proximate evolutionary path dependent model which reflect that there is further potential of multi-disciplinary endeavour with an evolutionary focus to better understanding the micro-level perspective of spatial economy. Section 3 therefore introduces NCT as an additional instrument to elucidate the environmental conditions of urban tourism and related spatial effects in post-disaster Christchurch.

## 3. NCT as a means to conceptualise post-disaster crisis management: Co-constructing the environmental conditions

Disaster events are characterised by low probability, high consequence, ambiguity, and time pressure with regard to decision-making. Businesses are affected by disasters in various ways; loss of operations, for example through temporal closure of an area; damage to transportation and communication systems (Afedzie & McEntire, 2010); infrastructure breakdown (Boin & McConnell, 2007); psycho-social impacts on the local population (Resilient New Zealand, 2015); dislocation of the customer base (Corey & Deitch, 2011); retail displacement (Amore, 2016b); state intervention with uncertain implications (Brown, 2012; Stalling, 1998); new social structures and norms (Dynes, 1994); and economic hardship for citizens (Runyan, 2006). Once certain, previously unknown, thresholds are crossed, change affecting the overall system of an organisational structure starts to take place (Stonebraker, Goldhar, & Nassos, 2009). While crises affect all industries, the tourism sector is particularly vulnerable due to its multidimensional consumption and production processes (Henderson, 2007; Laws & Prideaux, 2006). The interconnectedness of tourism networks involving businesses, communities and individuals increases this vulnerability (Orchiston et al., 2016; Pforr & Hoise, 2007; Ritchie, 2009).

At the same time, disasters create opportunities for investment and growth, and market shifts in the post-disaster business environment create opportunities for businesses (Faulkner, 2001; Monllor & Altay,

2016). Indeed, the seminal work by Dacy and Kunreuther (1969) on a theory in 'Economics of Natural Disasters' postulates that gross domestic product (GDP) generally increases immediately following a natural disaster. Natural disasters induce government interventions and reconstruction efforts (Brü;ck et al., 2011), and the arrival of disaster aid organisations and recovery/rebuild investments stimulate the regional economy of the affected region, resulting in changes in the local business sector, labour market, demography and accordingly, its economic geography (Brü;ck et al., 2011; (Elliott, Swartz, & Herbane, 2002); Kefalas, 1981). Furthermore, disruptions of traditions and policies, and a weakening of existing organisational structures may even be construed to provide a favourable climate for business enterprises (Monllor & Altay, 2016). A natural disaster can thus decisively alter the trajectory of regional (re)development as it creates gaps in the market whilst eliminating or disrupting established businesses, supply chains and whole industries (Kefalas, 1981; Monllor & Altay, 2016).

From an economic perspective, 'opportunity' is considered as an industry-level phenomenon, a competitive imperfection in the market (Alvarez, Young, & Woolley, 2015). Natural disasters create such market imperfections, and Chang and Falit-Baiamonte (2002) argue that once a business reopens after a disaster, its recovery is strongly influenced by the market situation. Indeed, previous developments are superseded by a disaster, and changes and advances emerge (Kefalas, 1981; Nilakant et al., 2016; Palmer & Hartley, 2006). Business recovery is thus not only a process of short-term resumption, but also long-term restoration (Olshansky & Chang, 2009; Sahebjamnia et al., 2015). Recognition of the opportunities inherent in a post-disaster environment is poorly understood in business research but Ardichvili, Cardozo, and Read (2003) suggest that alertness, prior knowledge, social networks and personality traits of entrepreneurs are among the decisive factors for business survival.

Passive adaptation to environmental conditions is reasonably well understood in evolutionary ecology, however, the concept of 'niche construction' (Lewontin, 1983) has been recently put forward in the contemporary evolutionary studies (Brodie and Futuyma, 2005; Laland, Odling-Smee, & Endler, 2017). In niche construction, "organisms do not passively adapt to conditions in their environment, but actively construct and modify environmental conditions that may influence other environmental sources of selection" (Laland, Mathews, & Feldman, 2016, p. 192). In a seminal paper on NCT applications, Spisak, Nicholson, and Vugt (2015) posit niche construction theory (NCT) as a multidisciplinary movement, providing a framework for understanding the evolutionary nature of organisations. They argue that "in contrast to traditional theories of evolution, in which researchers view organisms as moulded by environmental pressures, NCT provides a second route to the adaptive fit between organism and environment by emphasising the capacity of species to modify environmental states" (Spisak et al., 2015, p. 293). Laland et al. (2017) argue that organisms can change their environment in order to stay alive and maintain a nested series of adaptive boundaries. Niche construction is thus operationalised a fundamental evolutionary process in its own right (Laland et al., 2016).

A key tenet of NCT is the complementarity of organisations and their environments. An organisational evolutionary niche can thus be the lynchpin to understanding entrepreneurial actions of 'creative destructions' as evolutionary processes in a post-disaster business environment. Indeed, some authors within the literature on crisis management agree that the entrepreneurial awareness of selection and survival pressures and quasi-evolutionary responses through innovations significantly modify the environmental conditions (Hall et al., 2018; Kefalas, 1981). Similarly, post-disaster business continuity management tends to influence its own progression (Sahebjamnia et al., 2015), driving modifications of the environmental conditions. While it has recently been shown that enterprises can exert influence over external factors influencing their evolution to achieve adaptation (Hall et al., 2018; Monllor & Altay, 2016), NCT can be used in the identification of the specific organisational modifications to a niche (Spisak et al., 2015). During niche construction, organisms modify their own as well as each other's niches, resulting in distinct adaptations (Laland et al., 2017). NCT can therefore provide a useful additional perspective for understanding the evolutionary ecology of urban tourism and tourism-related businesses post-disaster.

The niche construction perspective opens up a new line of argument to rethink the processes of spatial evolution of enterprises experiencing environmental uncertainty, and to investigate the entrepreneur-mediated modifications to the environment (Odling-Smee, Laland, & Feldman, 2003; Spisak et al., 2015). This study operationalises the socio-political, legal and macroeconomic forces as 'non-modifiable environment conditions' (Zaman et al., 2014) of the urban tourism and hospitality industry. Instead, and in line with the NCT tenets explained above, selection pressures that operate on the businesses are conceptualised as avenues for niche-construction.

## 4. Methodology and methods

This qualitative study employs an interpretive approach to let the phenomenon and processes under investigation and the individuals and groups associated with it speak for themselves (Bryman, 2012). It assumes that any relevant processes unfold naturally (Patton, 2002), rendering the researchers mere instruments of credibility whose responsibility it is to make sense of the phenomenon of interest and to promote its understanding (Patton, 2002; Stenbacka, 2001). A content analysis of policy and planning documents and relevant reports and qualitative semi-structured interviews (held in January–March 2017) form the empirical basis for the investigation. All interviews and written documents were to apply to the Christchurch Central Business District (CBD) as the geographical location of the research fieldwork.

### 4.1. Interviews

'Information-rich' participants were purposively selected (Patton, 2002) based on the researchers' expert judgement. This approach allowed for a multi-perspective, in-depth understanding of the post-disaster business environment and the evolution of hospitality enterprises. Document analysis (discussed in Section 4.2) was the primary instrument to identify the key stakeholders and thus potential research participants (listed in Table 1). The background knowledge of the participants' roles in the post-quake business environment lead to an extent of symmetry in the interview relationship, and "legitimized spending time on the interview" (Brinkmann & Kvale, 2015, p. 171).

Central and local government agencies directly involved in the governance, rebuild, regeneration and economic (re)development of the CBD, regional tourism organisations, business advocacy groups, community leaders and elected political leaders representing the CBD at the regional and national levels have participated in face-to-face semi-structured in-depth interviews (Gibson & Brown, 2009). Research participants were selected based on their degree of involvement with the recovery processes in the Christchurch CBD area. This included government departments, the Crown company, the Christchurch City Council (CCC) and CCC-owned subsidies as well as regional tourism organisations, business associations, advocacy groups and political leaders representing the CBD at the regional and national levels (Table 1).

Owner/operators of individually owned and operated food and beverage and accommodation businesses located within the CBD since before the September 2010 earthquakes are included, any ventures launched after the earthquakes were not. As only a few accommodation businesses from the pre-earthquake era have survived, the majority of business responses reflects the views of food and beverage businesses. It was important to the researchers to exclude the post-earthquake 'start-up' entrepreneurs as these did not experience 'business as usual' before the earthquakes, which meant that they were not in a position to compare and speak to their crisis management and business continuity

**Table 1**
Research participants.

| | Pseudonyms | Official Position | Organisation | Organisation Type | Interview Duration |
|---|---|---|---|---|---|
| Government Agencies/ Business Units | CG1 | GM, Strategy and Property Opportunities | Otakaro Limited | Crown Company | 83 Minutes |
| | CG2 | Confidential | Regenerate Christchurch | Joint Venture of Crown and Christchurch City Council | 76 Minutes |
| | CG3 | Confidential | Greater Christchurch Regeneration | Department of the Prime Minister and Cabinet | 55 Minutes |
| | CG4 | Confidential | Ministry of Business, Innovation and Employment | Department of the Prime Minister and Cabinet | 47 Minutes |
| Local Council and Council-owned Subsidies | LG1 | Chief Executive Officer | Canterbury Development Corporation | Christchurch City Council-Owned entity | 83 Minutes |
| | LG2 | Chief Executive Officer | Development Christchurch Limited | Christchurch City Council-Owned entity | 63 Minutes |
| | LG3 | GM, Strategy and Transformation | Christchurch City Council | City Council | 78 Minutes |
| Regional Tourism Organisation/Bureau | RT1 | Confidential | Christchurch and Canterbury Tourism | Regional Tourism Organisation | 62 Minutes |
| | RT2 | Confidential | Christchurch and Canterbury Convention Bureau | Convention Bureau | 54 Minutes |
| Political Leaders | CL1 | Local Political Leader and Former Councillor | Confidential | – | 93 Minutes |
| | CL2 | Elected Councillor | Christchurch City Council | City Council | 68 Minutes |
| | CL3 | Political Leader Representing Christchurch CBD | Confidential | – | 41 Minutes |
| Business Associations/ Industry Body | AG1 | Confidential | Hospitality New Zealand | Business Advocacy Group | 70 Minutes |
| | AG2 | Confidential | Tourism Industry Aotearoa (TIA) | Business Advocacy Group | 32 Minutes |
| | AG3 | Manager | Central City Business Association (CCBA) | Business Advocacy Group | 74 Minutes |
| | AG4 | Chief Executive Officer | Canterbury Employer's Chamber of Commerce | Business Advocacy Group | 64 Minutes |
| Business Owners-operations | BO1 – BO8 | Business Owner-Operator | Confidential | Christchurch Central Business District-origin Hospitality Businesses | 705 Minutes |

interventions.

The interview focus was adapted to suit the specific context of the interviewee. The semi-structured interviews were guided by an inventory of issues rather than specific questions, so that participants essentially directed the conversation and had the opportunity to express their subjective realities. Representatives of the Crown and CCC-owned agencies, community leaders and business advocacy groups were asked to speak to their experiences with and views on earthquake recovery governance, legislative actions, rebuild blueprints, regulatory changes and their roles in the recovery process insofar it related to the business environment for hospitality businesses in the CBD. The hospitality business owners-operators were asked to share their stories, business models, and the trajectories of their enterprises post-earthquake.

The interviewer made deliberate efforts to keep the conversation on a positive trajectory, focussing on solution strategies employed by the business or government agency, rather than difficulties experienced or damages incurred. The introductory questions mentioned in the previous paragraph were followed by probing questions to prompt in-depth explanations and descriptions. All interviews were audio-recorded and fully transcribed. Table 1 provides an overview of all interviews (the degree of detail reflects the limitations imposed by ethical considerations and the pertinent ethics approval).

The nature of the issue under discussion was an important consideration at all times. All conversations addressed a disaster event that many have experienced not merely as a business disruption but primarily as a personal event, one that has affected their families and private lives. It was therefore a high priority to consider any possible distress for interviewees before an interview took place, to observe carefully any adverse interviewee reactions, and to refrain from any potentially distressing questions.

This study adopts the notion that in qualitative analysis, "coding is a cyclic act" (Saldaña, 2016, p. 9) rather than linear; it is an organic process to interpret data, capture their meaning and generate themes. Inductive and simultaneous coding of the interview transcripts generated 83 codes; axial coding reduced this number to 28. Subsequent analytical coding focused on the interrelationships of the codes within and between the groups of the respondents. The cyclic coding identified both the implicit and explicitly stated ideas within the dataset. The codes generated the "bones of the analysis" and themes assembled those "bones into a working skeleton" (Charmaz & Flick, 2014, p. 113).

Further analysis at the latent level examines the underlying meaning of the dataset and identifies the features of the thematic patterns. At this point, NCT was used as an analytical framework to explain the interconnectedness of some codes as evident in the findings and discussion sections of this paper. The subjective interpretation of the data set through the NCT lens is in line with the interpretive overall approach of this study (Bryman, 2012). The set of candidate themes (Braun & Clarke, 2006) was refined with a view of achieving internal homogeneity and external heterogeneity (Patton, 1990), and confirming the coherent meaning and identifiable distinction between themes. The synthesis of the textual description of the findings presented in Section 5 and 6 was the final step.

### 4.2. Document analysis

Shaw and Gould (2001, p. 154) note that "the main method of developing narrative is through direct interviews, but a rich source of material is also documentary evidence". This study further relies on a content analysis of 64 publically available documents (such as policy and planning documents, government and industry reports, recovery blueprints, press releases, business cases, and local news, published between 2007 and 2017). In order to allow for any dynamics that can explain organisational ecology and evolution to emerge, the content analysis took an inductive approach (Hannan, Polos, & Carroll, 2007) using only the theoretical lenses of EEG and NCT as guidance. The statistical, textual and visual imports obtained through document analysis

enriched the researchers' familiarity and in-depth knowledge of the case under investigation. Another cyclic act of coding of all categorised data (including the interview data) allowed the researchers to merge the data components into the narrative presented here.

### 4.3. Concluding thoughts on the methodology and method

The study presented here is subject to the limitations usually associated with qualitative research including a lack of generalisability of the research results, challenges in the replicability of the study, perceived subjectivity and confirmation error. Calling for "context-bound extrapolations rather than generalizations", Patton (1990, p. 491) puts some of these concerns into perspective. The researchers in this qualitative research were the primary instrument of data collection and subsequent analysis. They selected documents and research participants specifically to collect the necessary data, with the aim to understand the particular phenomenon in depth. Reliability was ensured through in-depth engagement in data collection, an audit trail and employing rich and thick description (Patton, 2015; Saldaña, 2016) with the aim of enabling the readers to authenticate the findings. The frequent use of quotes in the findings sections of this journal article further demonstrates this approach. Different phases of this study are presented in a systematic order and the audit trail is embedded in every section of this paper to ensure "internal validity" (Merriam, 2002, p. 25). Moreover, using rich and thick description of both context and data helps with achieving validity and enabling knowledge transfer to comparable settings.

## 5. 2010/2011 Christchurch earthquakes

### 5.1. Effects in the christchurch CBD

The earthquakes on February 22, 2011 "have caused a ground surface rupture, ground shaking, liquefaction, lateral spread, rock fall, topographic amplification, landslides, regional uplift and subsidence, ground compaction and ground surface renting" (Christchurch City Council, 2011, p. 22). Extensive damage was caused to 1100 buildings in the city centre (Greater Christchurch Group, 2017; New Zealand Trade and Enterprises, 2016), in addition to damage across the whole Canterbury region. City centre businesses were forced to deal with a 'new normal'; the city centre was cordoned off, followed by changes in regulatory policies and customer demography. Furthermore, the CBD population fell by 35.9% to 4,902, business locations plummeted from 5710 to 3,734, and the number of employees dropped from 47,350 to 27,560 (Greater Christchurch Group, 2017; (Statistics New Zealand, 2012)).

Earthquake damage reduced the number of hotel rooms in Christchurch by 78%, which represented a 43% loss in hosting capacity. The national share of Christchurch's tourism capacity dropped from 9.2% pre-earthquake to 6.9% (Christchurch and Canterbury Tourism, 2011). The chief executive of Christchurch and Canterbury Tourism noted that "there is no event since World War II that has disrupted our tourism industry by so much and for so long" (in New Zealand Herald; August 28). Commercial accommodation units available in the central city fell from 5279 in March 2010 to 621 in March 2012 (Wagner in Tourism Ticker, 2017, June 12). The Christchurch CBD was also the historic centre and, as such, of interest as a visitor attraction. More than half of the 250 listed heritage buildings were located there (Amore, 2016a); 113 of these heritage buildings were demolished by the end of 2011 (alongside a large number of more recent buildings, see Fig. 1),

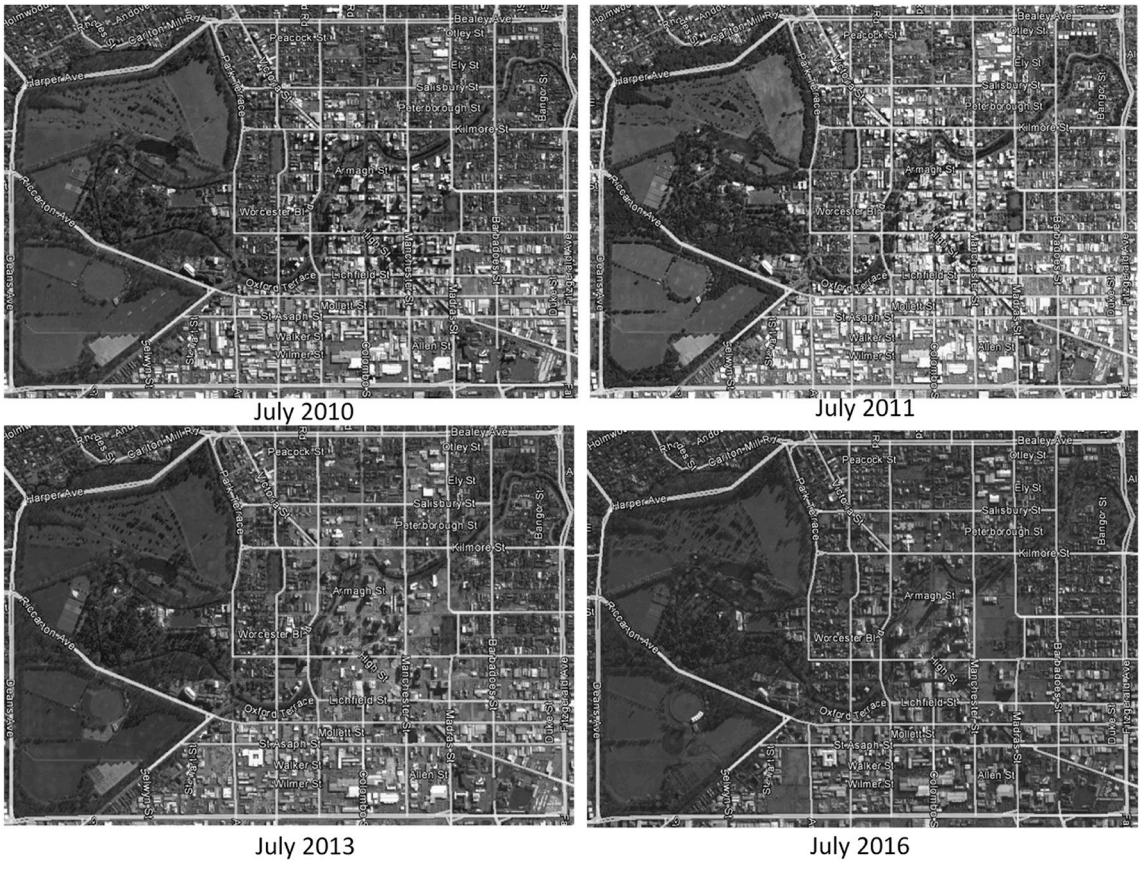


**Fig. 1.** Aerial views of the changes in the christchurch CBD built environment, density, 2010–2016 (source: Google map satellite image).

presenting a significant challenge with regard to retaining the city's links to the past (Amore, 2016a; Ingham & Griffith, 2010).

### 5.2. Recovery and the emergence of a new cityscape

Christchurch's central city had been in gradual decline since the 1990s (Greater Christchurch Group, 2017). The earthquake thus provided a clean slate to redesign the city centre, and government agencies promoted the importance of tourism in the city centre re-build and economic recovery planning. The Canterbury Earthquake Recovery Act 2011 overruled the existing legislation and enabled the government to acquire the designated land for the CBD rebuild in a depoliticised climate. The redevelopment blueprint was driven by tourism considerations while new building code requirements for earthquake strengthening of the remaining historic buildings lead to substantial restoration of part of the tourism resource.

These legislative and regulatory changes in land use and building codes altered the urban landscape and subsequently transformed the local and regional economic geography. As 92 ha (within the Bealey, Fitzerland, Moorhouse and Rolleston Avenues) of the 608 ha Christchurch Central City area (including Hagley Park) were cordoned off until June 2013, residents, workers, students, and visitors were pushed from the centre to the city's outskirts, causing substantial urban sprawl. It was common for CBD-origin businesses to relocate to the city edges and suburban areas. Moreover, closure of the CBD caused a significant disruption in the transport/commuter network (Greater Christchurch Group, 2017). Changes in consumer demography altered the distribution of the workforce as well as consumers. Overall, the centre of economic activity shifted West (Canterbury Development Corporation, 2013). Transitional architecture (like the '*cardboard cathedral*' by Shigeru Ban) and CBD business community-led projects (like the '*Re:Start container mall*') further altered the city.

As the rebuild gathered momentum, the sharp economic decline following the earthquakes reversed, although not to pre-earthquake levels. For example, 2.7 million visitor nights in commercial accommodation were recorded for greater Christchurch for 2016; that is merely 81.8% of the 2010 figure. Numbers for the city centre are less positive. In 2016, the city centre accommodation capacity had reached 2042 units (still 61% less than the available units in March 2010), and visitors spent 753,713 guest nights there, 56% less than the 2010 figure (all data New Zealand Herald, 2017, June 11).

## 6. Findings and discussion

### 6.1. Emergence of a 'new normal'

The Crown took control of the district plan, triggering transformational changes in the cityscape (CL1; CL2; LG2; AG1). The representative from Regenerate Christchurch (CG2) who has been involved in the recovery process since September 2010 and who held key management positions in the Canterbury Earthquake Recovery Authority (CERA) and Christchurch Central Development Unit (CCDU) argues that the Crown and city council's role has become *'much more complex'* in the post-disaster environment. "*Normally there's a relatively steady state, everything is changing slowly but it's not only changing slowly where in post disaster environment there is a lot of different things happening, may happen and uncertainty whether they will happen" (CG2)*. The information emerging from the interviews with Crown agencies (CG1; CG2; CG3; CG4) suggests that the Crown's role within the council was not to de-risk the businesses in terms of their ability to operate but to *"de-risk in terms of some of those externalities like the infrastructure there"* (CG2). Much decision-making around the rebuild of the CBD was driven by a desire to provide certainty for both residents and potential investors; as one interviewee put it: *"What can the Crown and the council do to reduce or mitigate or de-risk it for businesses?"* (CG2). Specifically, the economic recovery framework for the CBD focused on the re-population, tourism development and public space reconstruction (RT1; RT2; CG1; LG2; LG3; AG1). Crown agencies and the city council redistributed urban activities into designated precincts (AG1; CL1; CL2). The redesigned CBD and public investments in anchor projects and critical infrastructure have significantly affected the mobility of residents and visitors, subsequently driving the business relocations and changes in economic hotspots in Christchurch (CL1; CL2; AG1; AG2; LG2; LG3).

Crown agency executive CG1 explained that the government did not want to build back *"what's lost"*. He reiterated the recovery vision when saying *"[o]ur task is to actually make Christchurch an even better destination than it was before"* (CG1). Notably, he said *'destination'*, not city, suggesting that the Crown's focus was on (re)creating city spaces that might support a tourism-based economy. "*For example, the council's investment in [the] convention centre tends to provide certainty that catalyses the growth of the hospitality industry*" (CG1).

There was consensus among the research participants, especially the group of business owners and operators, that the Crown and Council's catalyst investments were instrumental. The content analysis of documents as part of this study confirms that the relevant funds were used in a multitude of ways, supporting planning as well as delivery and facilitation of a large number of rebuild initiatives and projects.

Fig. 2 shows how research participants perceive and narrate the post-earthquake business environment. It illustrates the complex interrelationships of the emerging themes as well as the different timescales (ranging from the immediate to transitional and long-term perspectives). All issues included here were raised by the interviewees during the interviews.

In line with the complexity of issues demonstrated in Fig. 2, interviewee CG2 (a representative of Regenerate Christchurch) has explained how the Crown and City Council's roles have changed: "[N]ormally there's a relatively steady state, everything's changing slowly, but it's not changing slowly […]. We're in a post-disaster environment; there's a lot of different things happening, may happen, and uncertainty whether they will happen".

### 6.2. Transformative impacts on the tourism system

Transformative impacts on the tourism system are a result of key stakeholder action as well as spatial forces. Remarkably, all research participants now spoke about the *visitor economy* whereas in the past the *tourism economy* would have been the common expression. An explanation for this change in terminology lies in the influx of construction workers who, though likely only temporary residents, are forced to engage in the consumption behaviour of visitors (i.e., staying in purpose-built accommodation; eating out). Indeed, due to the non-availability of residential accommodation in the city centre, its whole (daytime) population can be conceptualised as visitors.

Adaptations in destination management and marketing have equally influenced the tourism system. Christchurch and Canterbury Tourism (CCT) has implemented three phases of interventions to manage and direct visitor streams. First, immediately following the earthquakes, Christchurch Airport was promoted as the gateway to the region to sustain the regional visitor economy. A number of interviewees (LG1; LG2; CG2; RT1) have stressed Christchurch's gateway function pre-disaster and emphasised that role should not be relinquished. Interviewee RT1 further explained that the focus on the wider Canterbury region made sense as the city did not have any accommodation anyway. Interviewee CL3 has added that this measure was necessary to keep other Canterbury tourist attractions operating. Once part of the new infrastructure and visitor facilities were operational, CCT rolled out a city re-marketing programme in conjunction with international media outlets focussing on positive stories about the recovery and new attractions of the city (RT1). The third phase is marketing Christchurch as the *"newest city"* in New Zealand (RT1). Whilst a genuine marketing effort, this phrasing has also been chosen to manage and mitigate visitor expectations. While there is much *"visitor traffic"* (LG1) around

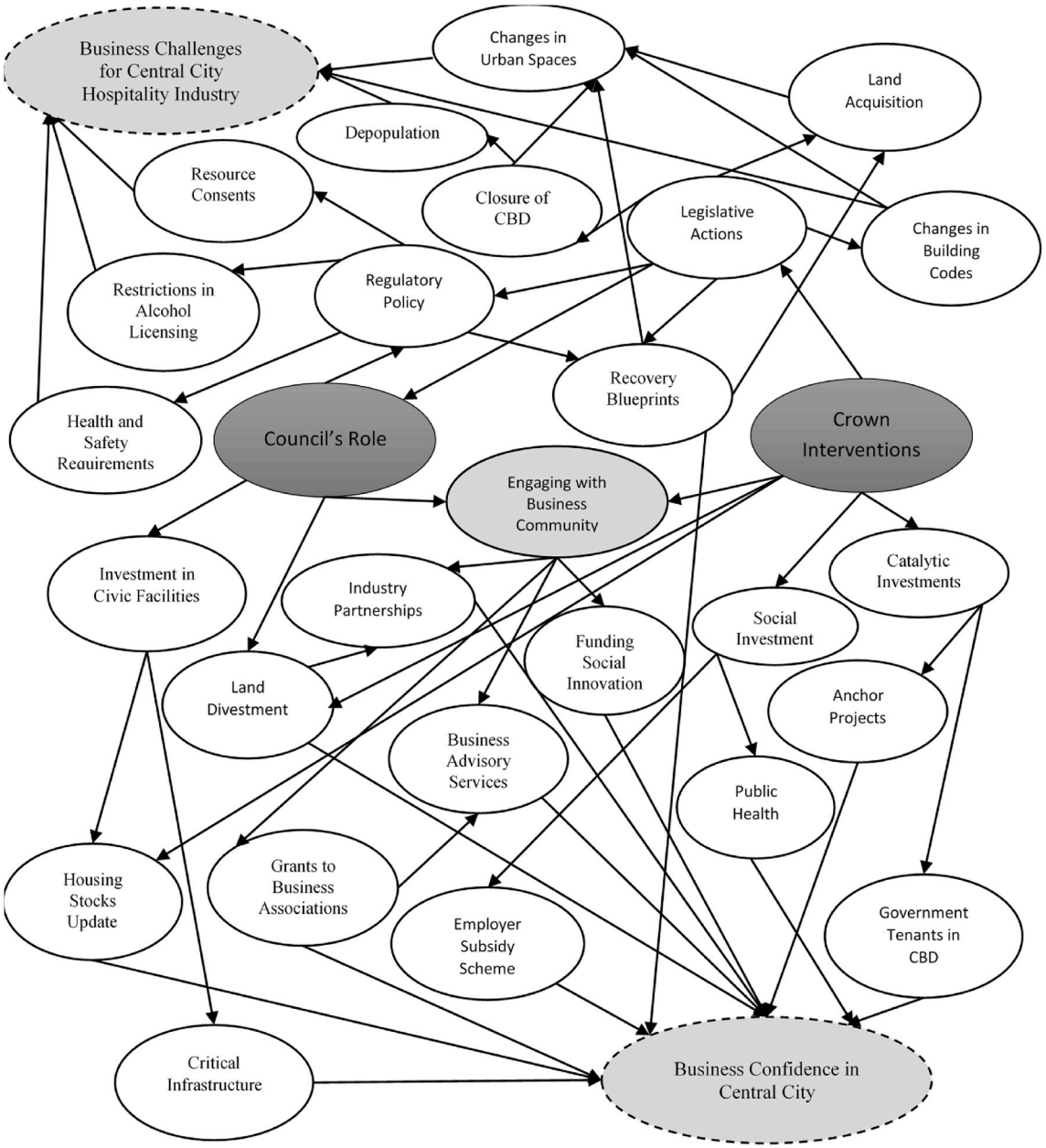


**Fig. 2.** Factors influencing the microeconomic climate post-earthquake: Interrelationships of dominant themes.

Christchurch and its airport, most bypass the city centre (BO2). As interviewee CL3 noted, "[the tourists] had to bypass because there was nothing here. Things like the Art Gallery, and the museum, and the Arts Centre, and all those things that were the drawcard for Christchurch had suddenly gone". Referring to the displacement of hotels and hospitality businesses in the city centre, also illustrated in Fig. 3, two interviewees, central city councillor CL2 and RT1 use the analogy of a *"doughnut city"* to describe the post-earthquake spaces featuring tourist and hospitality facilities in Christchurch (visible in Figs. 2 and 4).

Figs. 2–4 illustrate the post-quake shifts in the relationships of the tourism spaces and economic actors disrupting the tourism system and microeconimic climate of the Christchurch City Centre. The Figures reflect the results of the axial coding of the qualitative interviews (refer Section 4.1 for the related data analysis process).

Fig. 4 illustrates the establishment of the 'new normal' in the tourism system of the Christchurch City Centre. Instrumental factors for the improvement of the situation are those explained in his section, like the changes in user/visitor markets and the effect of marketing/ management initiatives (RT1; LG1; LG2; LG3; CG2; CL1). Fig. 4 is based on interviewee comments as well as the document analysis.

The next section focuses on entrepreneurial responses to the business volatility in the evolving 'new normal'.

### 6.3. Hospitality industry: displacement, relocation and Re-establishment

The closure of the city centre led to relocations of businesses and demographic changes for many parts of the city (BO2; BO3; BO4; BO5; RT1; AG1; AG2; CL1; CG2). Following the earthquakes, commercial lands in the less affected areas of the city fringe emerged as the new business districts and hospitality hubs. As interviewee BO2 described, *"[N]obody could get in there [the CBD]. All of those roads [in Riccarton and Addington] were really busy. But then it took a while […] people like me started opening up new places"*. First, undamaged areas close to CBD became popular retail and hospitality destinations (RT1; CL1; CL2; CG2; LG2; LG2; AG1). Then, there was a period of refinement when new hospitality hubs arose. Some of the hospitality businesses were

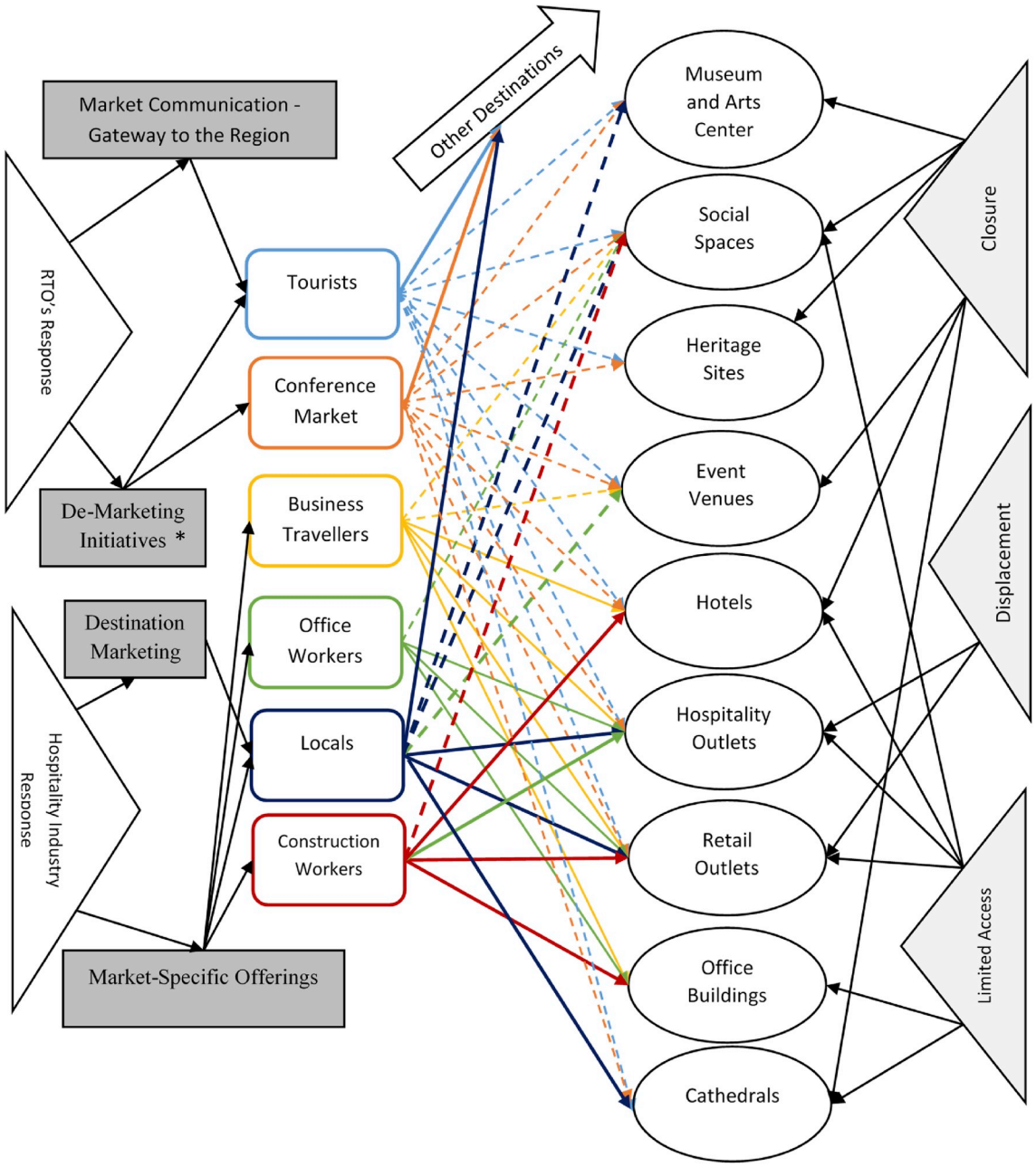


**Fig. 3.** Disrupted tourism sector in the Christchurch CBD *(dotted lines represent disconnects; solid lines reflect interrelationships and interdependencies)*. (*The concept of (recovery) de-marketing has been previously mentioned in the context of Christchurch by Orchiston and Higham (2016). In essence, it refers to a deliberate pause in destination marketing during periods of recovery from a disaster.).

reincarnations of previous CBD businesses; others were completely new. *"[Some] businesses were lost, because they were site-specific, and they called off. […] But most of them popped up somewhere else"* (AG4). Figs. 5 and 6 show that the hospitality hubs (along with many city centre residents) established west of the city centre. As there was relatively little competition, the businesses that survived the shift did well (BO2). The same was true for accommodation businesses in these areas who hosted construction workers, often for long periods.

Interviewees LG2 and RT1 used the analogy of a *"doughnut city"* (as reflected in Figs. 5 and 6) to explain the post-quake economic geography of the city. LG2, CG2, CL1, CL2 and RT1 reported that the empty central city was surrounded by the post-quake commercial hubs which emerged on the edges of the CBD cordoned areas. Hotels, retail, commercial buildings and residential properties in Addington and Riccarton survived the earthquake, and these areas became very popular and busy after the quake (RT1). The then high occupancy of those hotel rooms was primarily generated by post-earthquake business travellers and construction workers. Some of the displaced hospitality businesses from the central city relocated around Addington and Riccarton and started catering to both visitors and locals (CL1, CL2, LG2, AG1, RT1). Within a year of the February 22, 2011 earthquake, the commercial areas in west Christchurch emerged as popular hospitality hubs with a combination of pre-existing, start-up and other hospitality businesses relocated from the CBD (BO1; AG1; BO4; BO5).

It is remarkable that the formerly CBD-based small and medium non-tourism businesses relocated around new hospitality hubs, thus significantly altering the demographics of hospitality customers. *"Lot of the law firms and lot of the accountancy firms relocated around the hospitality hubs [in Addington]"* (RT1). Moreover, the motels, cafés, bars, restaurants, and new offices relocated from the CBD attracted the displaced retail

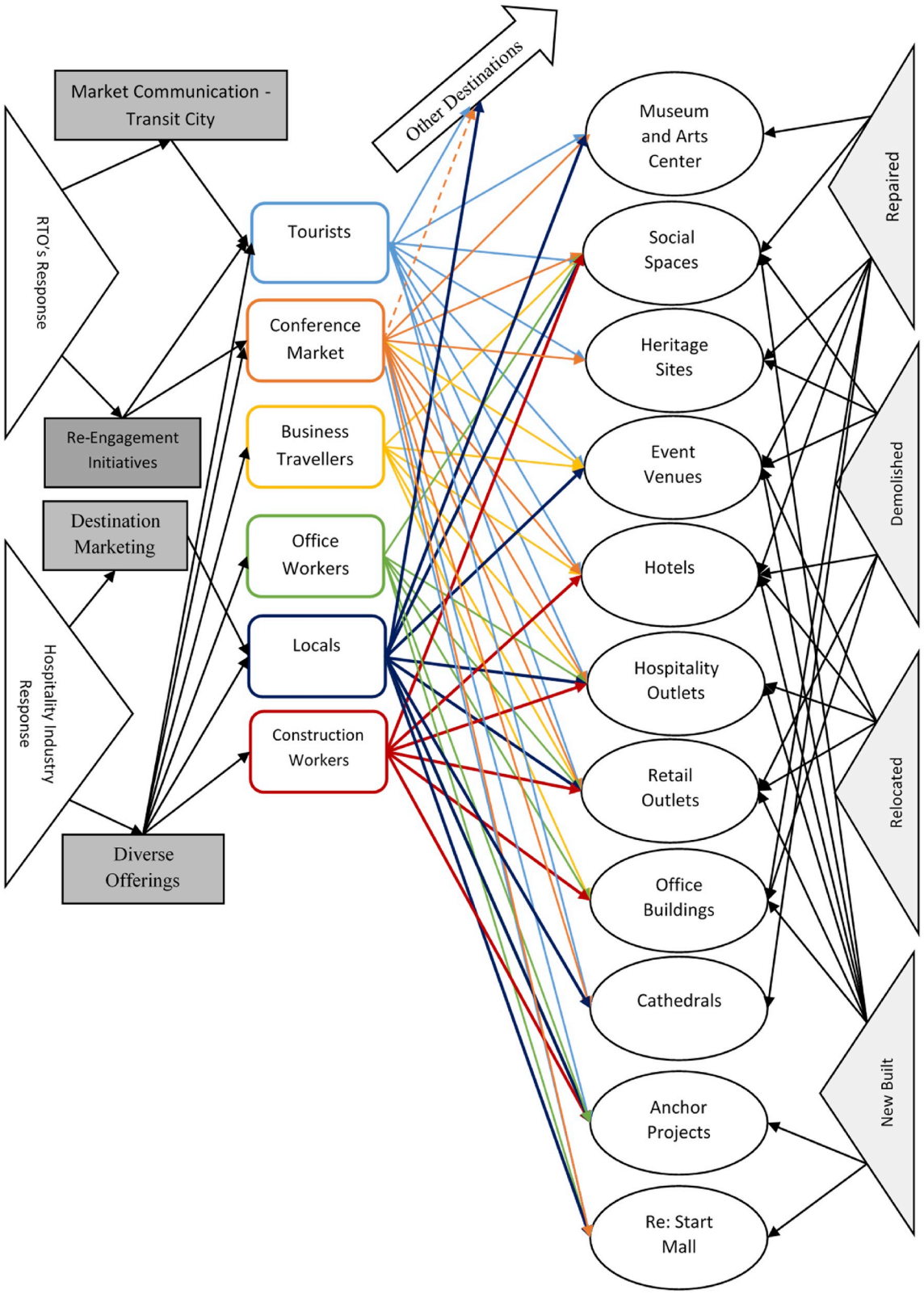


**Fig. 4.** Reactivation of tourism sector after the re-opening of the city centre, the 'new normal' *(dotted lines represent disconnects; solid lines reflect interrelationships and interdependencies)*.

businesses and suppliers which then re-established themselves in the vicinity around them (CL1; RT1; AG1). The almost collective relocation of the displaced CBD businesses led to new business districts and shifted the popular economic hotspots from central locations to the west of the city. *"It was sort of like an organic kind of growth was there. Because it's an event that nobody had seen coming, there was no plan in place. So this was completely unformed which actually worked out to be quite well"* (RT1) (Figs. 5–7).

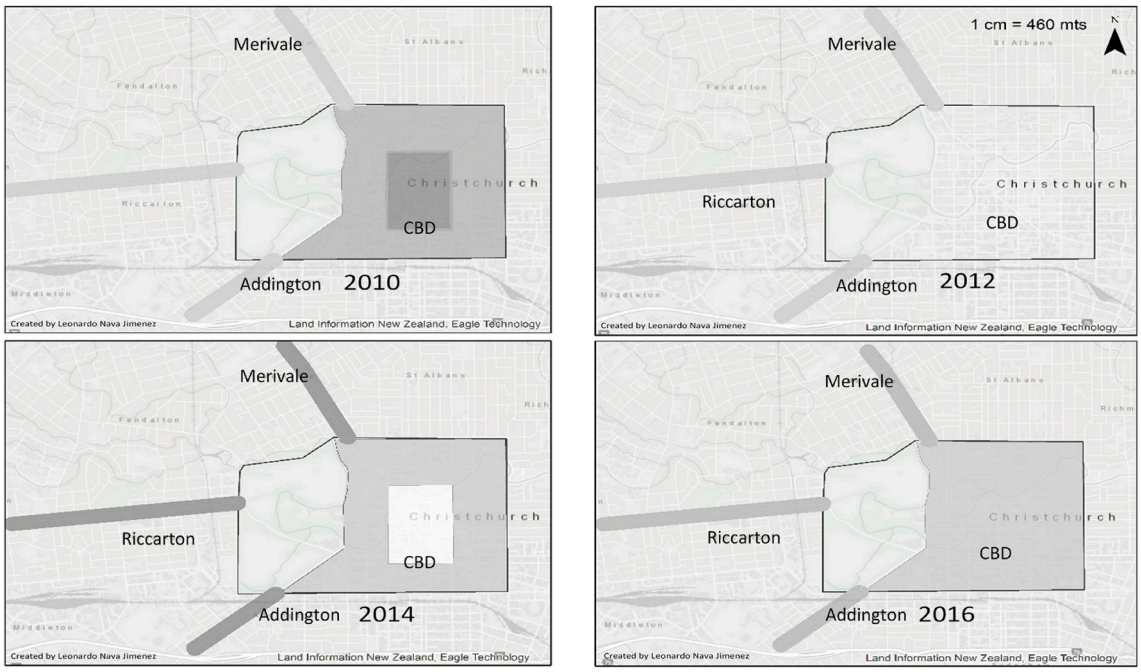


**Fig. 5.** Clusters of hospitality businesses in and around the Christchurch CBD, 2010–2016 (Created based on the interview dataset; darker colours indicate the higher density of the business outlets).

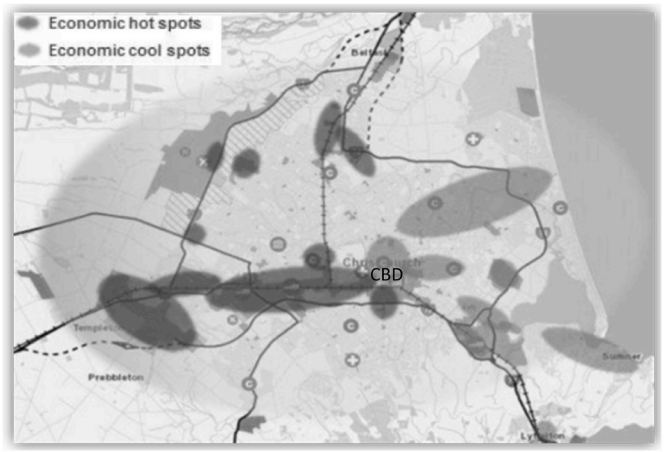


**Fig. 6.** Spatial shifts in economic activity from East to West (Composite Economic Activity Indicator Map, as at November 2012) (Source: CDC, 2013).

LG2, AG1, CL1 and RT1 argued that the hospitality businesses thus re-created the post-quake tourism map of the city. CL1 used the notion of *"organic hub"* to describe how the natural re-growth of the hospitality industry outside of the CBD brought about destinations in their own right (see map in Fig. 5). All interviewed business owner-operators and AG1 agreed that the long-term closure of the central city was the most significant driver of this trend.

Fig. 7 illustrates the dislocation of consumer groups and the spatial evolution of a collective subset of displaced hospitality businesses.

Once the CBD was re-opened, the economic geography of tourism and hospitality was yet again subject to change. Changes in the district plan have prevented some accommodation and hospitality businesses from returning to their previous sites (BO5). Further, interviewee RT1 finds that newly established businesses in the CBD have a smaller capacity, so much so that it has become difficult to accommodate large groups. Interviewee BO5 expressed surprise at the large proportion of new business owners who sought to establish themselves in the Christchurch tourism and hospitality industries. Lastly, mental trauma and a fear of returning to the CBD are mentioned as reasons why some business owners are likely to remain in the suburbs: Interviewee AG1 explains, *"I've got friends [displaced business owners-operators] that will not come back into the city. They don't feel comfortable coming in, and I think they have actually done well in suburban areas"*.

The following phenomenon will influence the economic geography of the businesses discussed here in the near future. As explained above, the hospitality businesses in the hospitality hubs have attracted a wide clientele including corporate employees who now worked in their vicinity (AG1, CL1, CL2, LG2, CG2). Interviewee AG1 believes that since many of the hospitality hub businesses are locked into five to eight year leases, and that they are therefore likely to return to the CBD at the same time. Interviewees BO1 and BO2 foresee far-reaching consequences of this imminent change that will greatly impact the now established parts of the visitor economy in the suburbs, having impacts on, for example, suburban accommodation businesses.

### 6.4. Evolutionary responses, niche construction, and spatial evolution

Fig. 8 illustrates the spatial effects of the earthquakes applying the concept of Evolutionary Economic Geography (EEG). Population demographics, visitor economy, labour market, regulatory environment, and commercial importance of a location underpin the changing dynamics of urban spaces and the connections between the changing environment and emergence of tourism and hospitality business clusters. The entrepreneurial strategies in a post-disaster urban hospitality industry share five key traits: a sense of business confidence, entrepreneurial awareness, innovation, and effective persuasion of changing the business model as a long-term, multi-step process of adapting the changes in the business environment. Dominant themes frame the driving forces of evolutionary responses of the entrepreneurs who survived and thrived in the business environment.

Figs. 5 and 7 illustrate the evolutionary perspective of the spatial organisation (Boschma & Frenken, 2011) of the hospitality businesses across the Christchurch CBD and the city edges. The socio-economic forces and the built environment (as explained in Section 6.1 and illustrated in Figs. 2–4) in the Christchurch business climate emerged as

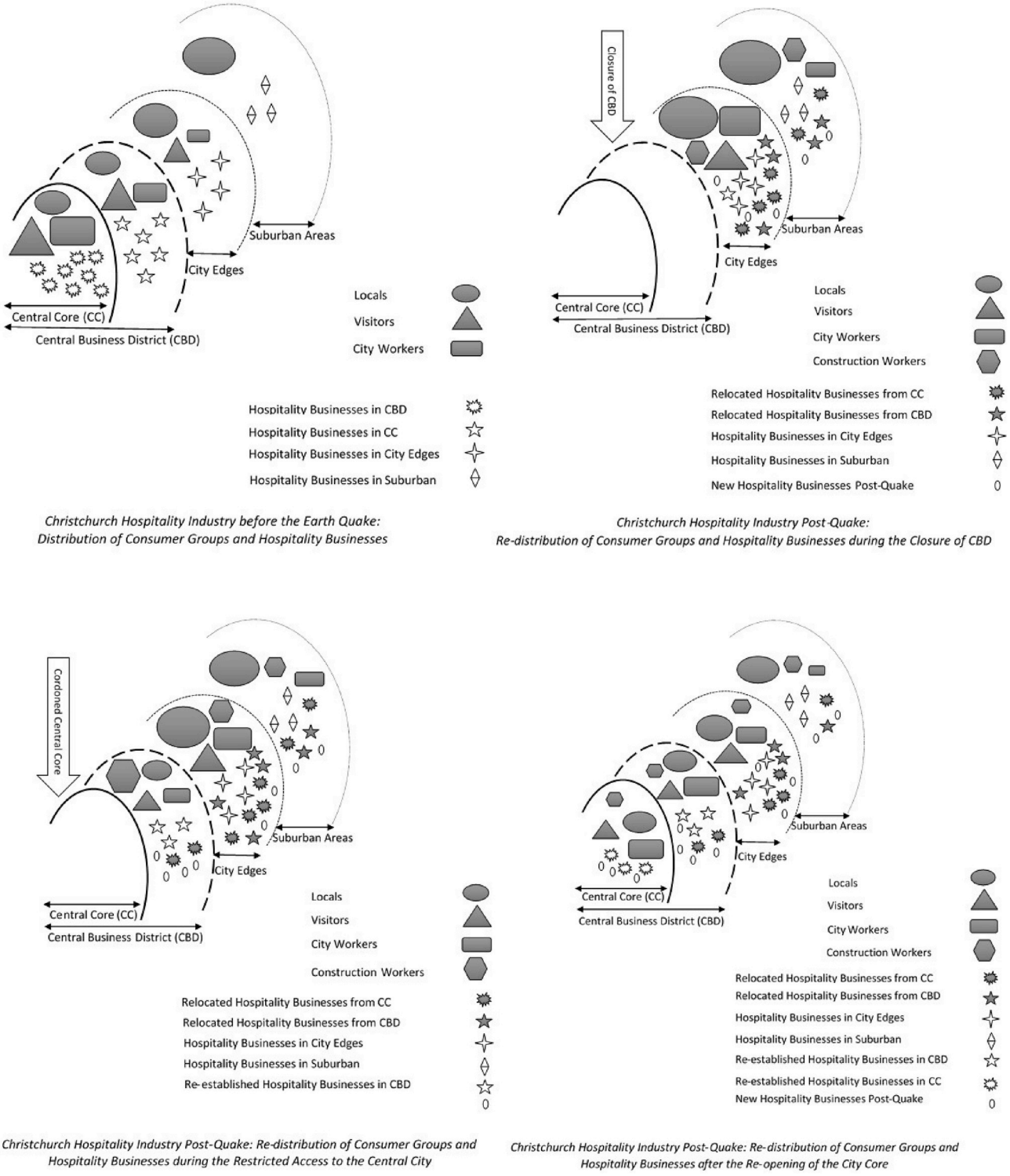


**Fig. 7.** Dislocation of consumer groups and the spatial evolution of hospitality businesses.

the key determinants of the spatial evolution of the post-disaster economic geography. Figs. 3, 4 and 7 re-count the concept of EEG (Brouder & Eriksson, 2013) and illustrate how the spatial economy of the post-earthquake tourism self-transformed through the micro-behaviour of the economic agents.

The micro processes are presented in Figs. 3 and 4 and 8–10 which show that the tourism sector has been one of the diverse socio-economic forces in the city environment (Hayllar et al., 2007; Maitland & Ritchie, 2009) that significantly altered the city spaces post-disaster. Figs. 2–4 show the complexities of the interrelationships and interdependencies of the key economic actors and the tourism components affecting the spatial evolution of the CBD-origin hospitality businesses.

The schemata in Figs. 2–4 and 7 reveal that the complex relationships and the interactions of the economic actors in tourism and hospitality sector are nonlinear (Esperdy, 2002) and high magnitude shocks like a major natural disaster can instigate regime shifts and alter the state of equilibrium of an urban tourism ecosystem. Section 6.3 comprehends the post-disaster shifts in urban tourism spaces and explains

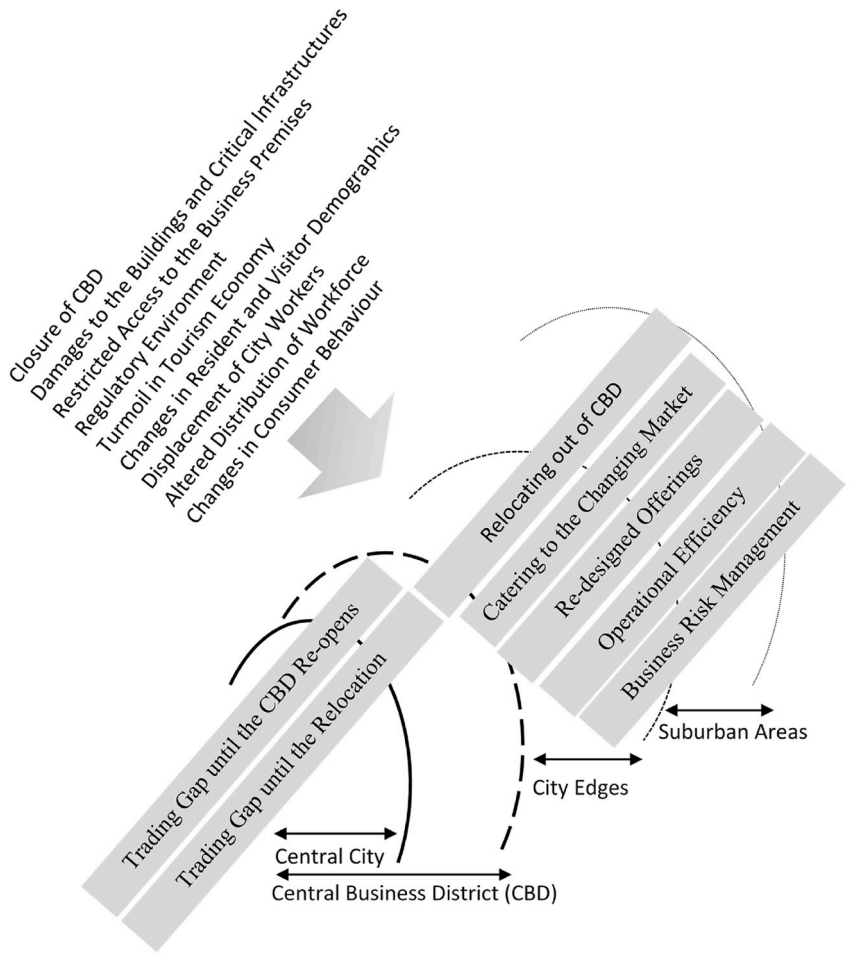


**Fig. 8.** Entrepreneurial responses to the selection pressures, February 2011 to April 2012 (while the city centre was cordoned off, early period).

the economic dynamics of placemaking (Brouder & Eriksson, 2013; Maitland & Ritchie, 2009) in Christchurch; why, where and when the spatial organisations of the hospitality businesses changed during the aftermath of the earthquakes (illustrated in Figs. 5–7). The findings in Sections 6.2 and 6.3 address the lack of empirical engagement in the extant literature of 'EEG and tourism in metropolitan settings' (Brouder & Eriksson, 2013). This paper thus elucidates how hospitality enterprises (as units of a population, refer Section 3) interact with their environment and alter the tourism-relevant economic geography of an urban centre (illustrated in Figs. 7–10).

In conjunction with the previous findings, Figs. 8–10 help illustrating how the hospitality businesses deliberately engaged in niche construction, thus affecting a range of other stakeholders/businesses. The three figures also show spatial implications of hospitality businesses' decision-making. The text at the top of each figure lists the environmental, external factors that influence business owner/operators. The boxes in grey show the resulting decisions that were taken by the businesses in question. The arrows at the bottom demonstrate what areas of Christchurch were concerned/impacted. In so doing, the figures bring together the results of the NCT application and the EEG-informed analysis and interpretations.

The empirical evidence presented in Section 6.3 clarifies the distinct adaptation process of the post-disaster hospitality businesses and echoes the argument of Laland et al. (2016) that the niche construction is a fundamental evolutionary process in its own right, recognising the complementarity of the hospitality businesses and their environment. NCT's strength as an alternative of identifying the organisational modification to a niche (illustrated in Figs. 7–10) is documented in an urban context. The findings presented in Section 6 further advance the concept of applying NCT to understand the micro-behaviour of the economic agents in a post-disaster spatial economy of urban tourism. Specifically, Sections 6.3 and 6.4 show that once a certain threshold is crossed in a sufficient number of constituent subsystems (Stonebraker et al., 2009), hospitality businesses do not passively adapt to the post-disaster conditions in their environment, but actively construct and modify the disaster-ridden environment resulting a remarkable spatial evolution in an urban economic geography.

## 7. Conclusion

By studying narratives and factors related to entrepreneurial survival in a post-earthquake tourism and hospitality business environment, this paper presents the dynamic process of spatial evolution of an urban tourism sector during the aftermath of a major natural disaster. Theoretical implications address the nature of transformational impacts on the hospitality and tourism spatial landscapes, related entrepreneurial resilience, and the application of EEG and NCT in a tourism context.

The empirical findings show that the natural disaster-induced

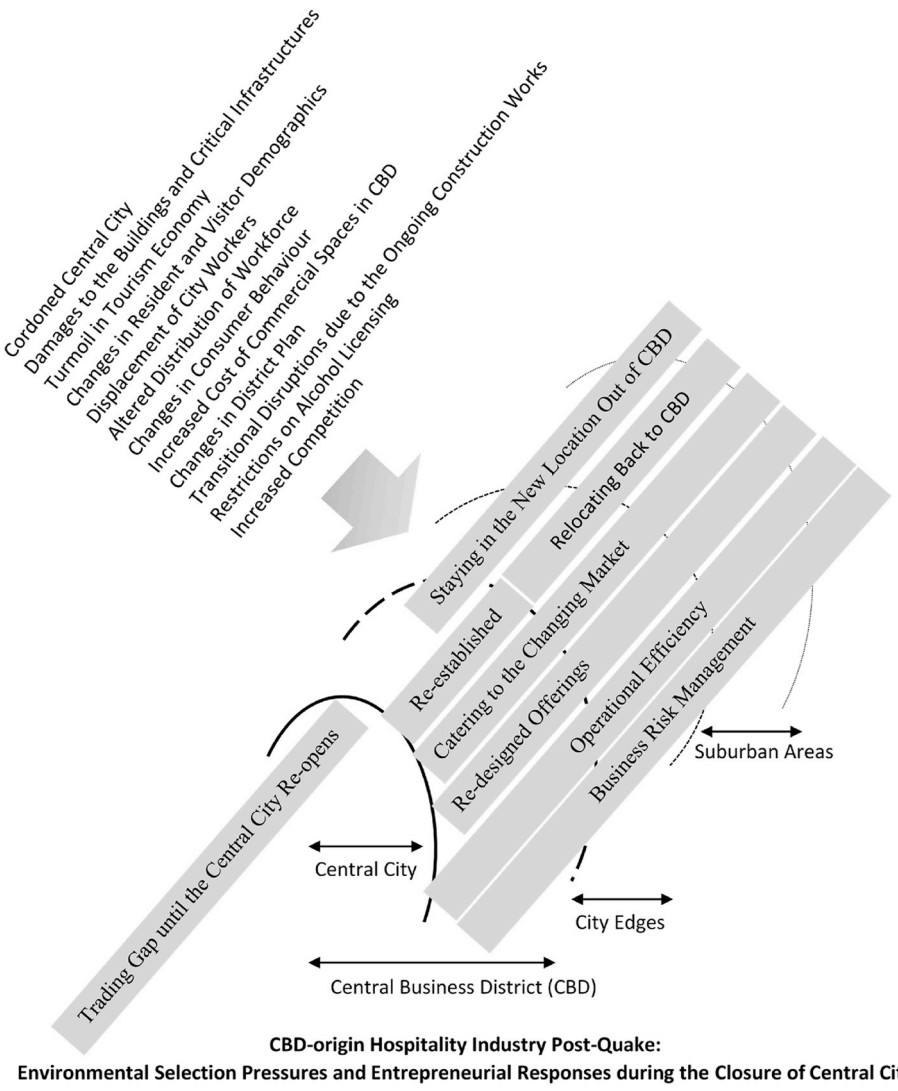


**Fig. 9.** Entrepreneurial responses to the selection pressures, February 2011 to June 2013 (while the city centre was cordoned off, full period).

changes in the built environment and economic landscape of an urban centre significantly disrupt the tourism sector and alter the spatial organisations of the hospitality clusters. The following factors have proven to function as transformational impacts on the spatial evolution of CBD-origin hospitality businesses: government interventions with uncertain outcomes and implications, recovery governance measures, the CBD rebuild and regeneration, long-term closure of city centre areas, adapted destination marketing strategies, changes in resident and visitor demographics, and significant shifts in market demand.

Entrepreneurial resilience was evident in knowledge capital, businesses' adaptability to external shocks, robust business models, procurement and use of market intelligence, and relocation strategies. Business agility displayed in the aforementioned ways has been the driving force of evolutionary responses of the businesses studied here. This paper thus demonstrates that, for a time, the tourism sector had become virtually indistinguishable from other economic activities as it co- and re-evolved with other dominant sectors of the post-earthquake regional economy. Indeed, hospitality entrepreneurs emerged as significant change agents in the spatial-temporal distribution of the overall visitor economy as they, among other things, recreated spaces for tourism.

This paper further illustrates the complexities of relationships and interdependencies of the economic actors in the urban visitor economy. The theoretical approaches of EEG and NCT have been instrumental in framing the narrative of the Christchurch City Centre recovery processes, and they allowed new perspectives on the spatial evolution of urban tourism-related businesses in a post-disaster context. EEG and NCT proved particularly suitable to uncover and illuminate the complexities of post-disaster business volatility over time as well as the entrepreneur-led modifications of their micro and macro environments. In doing so, this is the first paper to introduce NCT into a tourism context.

Applying EEG and NCT has enabled the authors to demonstrate that hospitality entrepreneurs and businesses in post-disaster environments are not merely passively adapting to changes in their commercial and institutional contexts, but that they seek to inform new processes and decisions to future-proof components of their business environment. Future research may seek to determine to what extent fast action and proactiveness are determining traits of successful entrepreneurs in crisis contexts more generally.

The Christchurch case suggests many possible practical implications but it is important to note that these are bounded by their local, regional and national context. The most significant practical recommendations relate to government support, demographic changes, and future urban planning. Government support for businesses and entrepreneurs needs to happen swiftly, bearing in mind that many businesses are not only important for their own sake (and employment opportunities etc.) but also that hospitality businesses in particular provide important services

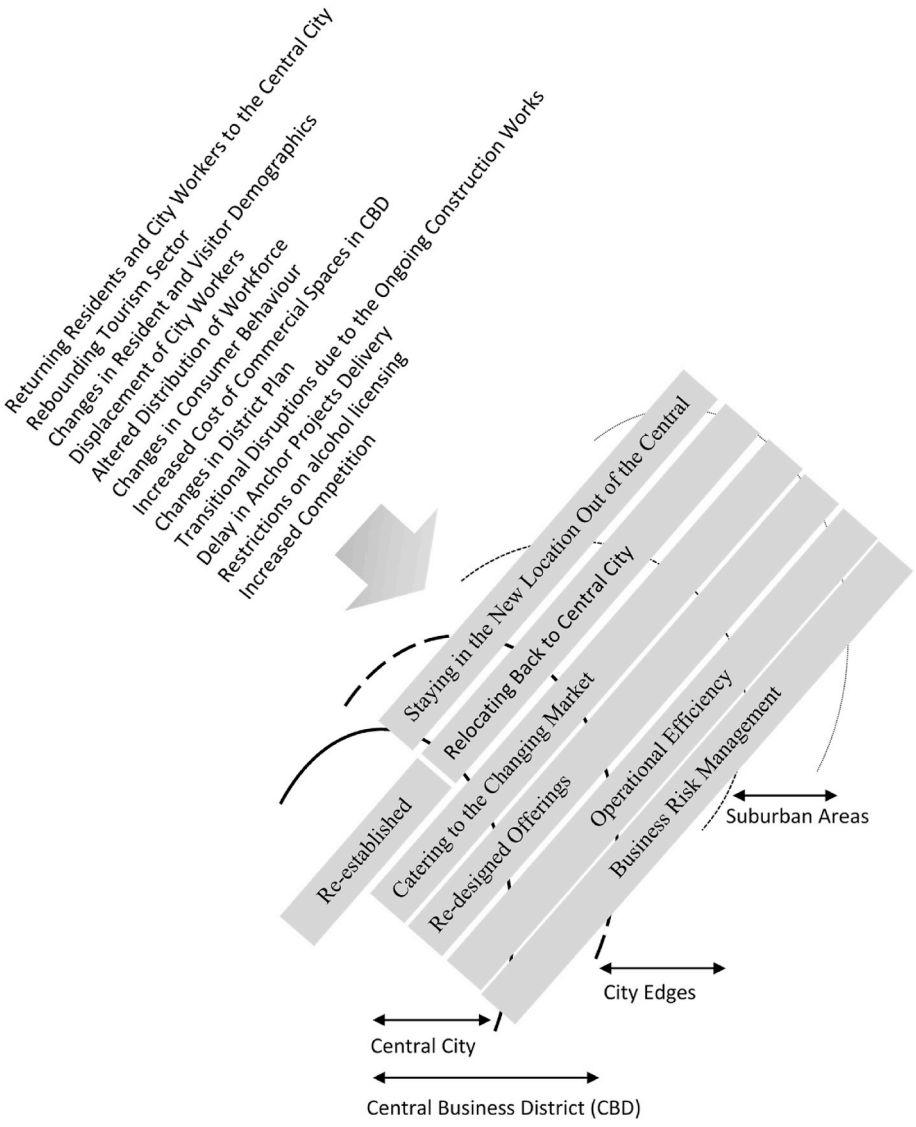


**Fig. 10.** Entrepreneurial responses to the selection pressures, July 2013 to December 2016 (after re-opening of the city centre).

for the general population as well as support workers during a crisis. The Christchurch case presented here demonstrates that a) there were significant changes in population demographics in the city centre, and that b) these changes significantly altered customer demographics and markets for hospitality businesses. Whilst the exact nature of such changes in a post-disaster environment is unpredictable, it is crucial to be aware of the possibility of fundamental changes in a local urban population. The spatial planning and (re-)zoning of urban spaces following a disaster like the one discussed here will impact on urban functionality for locals as well as visitors. It needs to be conducted carefully and, importantly, with the input from local operators, seeking their relevant knowledge (whilst avoiding recommendations based on vested interests).

## Declaration of competing interest

None.

## CRediT authorship contribution statement

**Abrar Faisal:** Conceptualization, Investigation, Methodology, Data curation, Formal analysis, Visualization, Writing - original draft, Writing - review & editing. **Julia N. Albrecht:** Conceptualization, Methodology, Visualization, Validation, Writing - review & editing. **Willem J.L. Coetzee:** Conceptualization, Visualization, Writing - review & editing.

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