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Public perception of heritage buildings in the city-centre of Invercargill, New Zealand

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ABSTRACT

With the global advancement in heritage conservation and sustainable management practices, understanding the public perception of built heritage is crucial. This paper examined the public perception of heritage buildings in the city centre of Invercargill, New Zealand, using an online survey to gather relevant information from over 600 participants.

The results showed significant support (73.8%) for Invercargill City Council (ICC)'s district plan heritage list to be narrowed down as recommended by professional heritage consultants. There was also substantial support (72.6%) for heritage recognition of some recommended 26 buildings to be removed from ICC's district plan so that ICC can focus more on conserving fewer heritage buildings with significant values in the city centre. Many participants (66.1%) believed that a well-maintained heritage building and access to local government incentives should be the critical determinants for a heritage building to stay on ICC's heritage list. In addition, open-ended responses mainly emphasised the safety concerns of earthquake-prone heritage buildings and the expensive costs of seismic upgrades, suggesting the 'demolition and rebuild' of irrelevant heritage buildings as a feasible solution to redeveloping Invercargill's declining city centre.

This study's findings revealed the significance of local knowledge of relevant built heritage parameters in Invercargill and its role in enhancing the usefulness of macro-level heritage projections and local built heritage conservation initiatives. These insights could serve as a starting point towards formulating a sustainable management plan for cities worldwide with 'fast disappearing' inner-city heritage buildings – a topic of interest for relevant built heritage conservation enthusiasts.

1. Introduction

Heritage conservation and management practices are currently developing globally, and an important aspect is a quest to understand the public perception of built heritage (Bakri, Ibrahim, Ahmad, & Zaman, 2015). Although pragmatic efforts have been made to understand the views of the public regarding conservation ecology (Seabrook-Davidson & Brunton, 2014) and tourism management (Becken, Lama, & Espiner, 2013; Su & Wall, 2014), there is not enough research on the public perception of heritage buildings in the New Zealand context. An improved understanding of how the people who use and interact with heritage buildings perceive these buildings would enhance the formulation of long-term management plans and conservation programs for the sustainable development of the built heritage in their society (Said & Borg, 2017, pp. 151–166). While past research highlights the strong correlation between people's perception and their behaviour (Silverman, Waterton, & Watson, 2017), the public's interactions with heritage buildings and their overt behaviour towards the buildings will depend on how they perceive built heritage.

Heritage buildings could be perceived as public goods because of the significant economic and socio-cultural values they present to society (Robertson, 2016). In circumstances where the private benefits to owners of heritage buildings are enormous, such owners would be motivated to invest in conserving their buildings for both private and public benefits (Carmona, 2019). Also, since the public are the primary users of heritage buildings (Aigwi, Phipps, Ingham, & Filippova, 2020), they should be the key contributors towards creating conservation programs and sustainable management plans for the buildings (Olivier,

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2017). In so doing, the benefits and interests of the public will not be marginalised (Su & Wall, 2014). Considering the existing situation of heritage buildings being placed in the spotlight for demolition in New Zealand as a result of the amended earthquake-prone building legislation (Aigwi, Filippova, Ingham, & Phipps, 2020), studying the perception of the public regarding heritage buildings would facilitate achieving a more profound and improved knowledge of the motivations supporting the consistent demolition wave that has been 'plaguing' New Zealand's built heritage, and perhaps promote the prevention of further demolitions.

This paper, therefore, focuses on examining the public perception of heritage buildings in the city-centre of Invercargill, New Zealand. An online survey is used to gather information from the public to address policy-related issues regarding the demolition of a significant number of heritage buildings in Invercargill's city-centre. Findings from this study can offer insights into the public 'perception' of built heritage that might help in the development of more sustainable heritage management in Invercargill.

2. Literature review

The public is acknowledged as an active supporter and contributor to successful built heritage conservation endeavours (Li, Krishnamurthy, Roders, & Van Wesemael, 2020). Hence, the public's perception regarding built heritage is currently trending in the domain of city planning research and practice due to its involvement as a broader stakeholder group beyond opinions from professional heritage experts (Mirzakhani, Turró, & Jalilisadrabad, 2021). Understanding the perception of the public concerning heritage buildings is essential for strategic promotional city planning. The UNESCO policy document on 'Historic Urban Landscape' recognises public involvement as a significant factor in heritage conservation planning and management (UNESCO, 2022). Nonetheless, in most cases, professional heritage experts such as archaeologists, historians, and architects are the ones who typically decide the heritage listings in an area, with not much holistic understanding of the perception of the public (Den, 2014).

Along with a rational assessment of the values provided by heritage buildings, understanding public opinions would foster the right choices for effective city planning at many levels. Also, there is an ongoing debate regarding the perception of cultural heritage as a 'public good', to promote the protection of heritage buildings as the responsibility of the public (Lazaro Ortiz & Jimenez de Madariaga, 2022). This 'public good' vision of cultural heritage further justifies UNESCO's action of involving the public in decision-making strategies regarding 'its' heritage to increase participation in defending and promoting cultural heritage (UNESCO, 2022).

Accordingly, a narrative literature review is presented in the following sections to explore existing studies on the factors influencing public perception of heritage buildings and heritage buildings as 'public good'.

2.1. Factors influencing the public perception of heritage buildings

Public perception is quite challenging to define because of its broad application within different contexts (Silverman et al., 2017). Logically, 'public perception' could be described as an aggregate of personal views of random people or groups on a specific topic within a certain timeframe, usually acquired from public opinion surveys (Dowler, Green, Bauer, & Gasperoni, 2006) or interviews (Parkinson, Scott, & Redmond, 2016a). Public perception is either influenced by some factors which could directly or indirectly affect the perceiver (such as the perceiver's current social or economic status, previous experiences, expectations, etc.) or other factors pertaining to the perceived object (Bamert, Ströbele, & Buchecker, 2016; Said & Borg, 2017, pp. 151–166), which is the conservation of heritage buildings in the context of this paper. While Rasoolimanesh, Jaafar, Kock, and Ramayah (2015) highlighted certain external factors (e.g., local cultural context, environmental impacts, economic climate, regulatory, political situations, etc.) which could influence a perceiver's public perception of heritage buildings, the classification of the kind of interactions (e.g., passive and active interactions) between the perceiver and perceived object as influential factors have also been considered (Zube, Sell, & Taylor, 1982).

The formation and recognition of heritage are based on the perception of the public regarding their mutual experiences, shared past, and appraised traditions, hence, promoting a 'sense of place' (Graham & Howard, 2008). 'Sense of place' refers to the perceptions and beliefs the public holds about a particular location, which are usually socially and politically constructed (Berg & Kearns, 1996; Sumartojo, 2013). For example, in the United States, there was overwhelming support by the public to convert the Oklahoma bombsite into a significant public memorial place (Bender, 1993; Foote, 2003). Also, the ecomuseum in northern Piedmont, Italy, evolved from a project involving the local people's perceptions of a 'sense of place', including their perceived need to conserve local cultural landscape features that interested them the most (Corsane et al., 2007; Graham & Howard, 2008).

Heritage and identity are two important but interconnected concepts in the domain of historic built environment (Graham & Howard, 2008; Moore & Whelan, 2016; Waterton, 2005; Waterton & Smith, 2010). To understand the interconnections that exist between heritage and identity, a study was conducted by Harvey (2008) in an effort to sketch a historical narrative of the heritage deployment, articulation and consumption processes in Britain over the past years. Harvey (2008) argued that there are some essential transitions in how official heritage is borne, starting from public obsessions over sites or the integrity of artefacts to perceiving emotions and embodied conservation practices as legitimate and valuable means through which historic cultures may be promoted. Another study by Kean (2008) examined the limitations of exploring the connection between 'public' and 'personal' heritage, and 'unofficial' and 'official' heritage. The study argued for a higher acknowledgement of the significance of personal experiences and the opportunities for using them to probe past histories and create new perceptions of the past (Kean, 2008).

Furthermore, McDowell (2008) provides clearer insights into the vital conceptual issues and debates concerning the links between heritage, memory and identity within cultural landscapes. Discussions on the importance of cultural landscapes as instruments for unravelling and exploring functions and values of heritage illustrate the potential of cultural landscapes to express how the public currently perceives them and the public's shifting relationships with the past (McDowell, 2008). An improved understanding of the various memory typologies presented by McDowell (2008) strengthens the argument that linking the study of memory to heritage and identity is essential in acquiring past narratives for existing purposes. Some lay discussions regarding Irish conservation planning with links to the built heritage environment and identity (Parkinson et al., 2016a) demonstrate that collected memories manifested in the form of stories told by relevant stakeholders would greatly promote the construction of 'place identity' (Dixon & Durrheim, 2000). 'Local character' can also help the public to shape their identity (Devine-Wright & Lyons, 1997). Understanding the connections between social values as a form of heritage significance and the public's participation in heritage conservation is also essential. Accordingly, failure to recognise that people have dynamic, iterative and embodied relationships with heritage places, would pose a potential challenge to how they would perceive such heritage places (Jones, 2017).

There are different classifications of cultural heritage values that historical buildings can be evaluated against. For example, while the Burra Charter classifies the cultural significance of heritage into historic, aesthetic, scientific, spiritual, and social values for past, current and future generations (ICOMOS, 2013), the New Zealand Charter classifies culturally significant heritage into historical, architectural, archaeological, aesthetic, commemorative, scientific, monumental, social, scientific, landscape, symbolic, technological, functional, traditional, or

other intangible or tangible values related with human activities (ICOMOS, 2010). Cultural heritage value was also classified by Throsby (2006, pp. 25–26) into six components (i.e., aesthetic, spiritual, social, historical, symbolic and authenticity values), to explore its connection to economics.

Olivier (2017) provides an exceptional summary of the increasing shifts in European heritage management approaches from exclusive interests in expert-based opinions to incorporating public opinions over the years. The public's attitudes regarding the Council of Europe's new legislation were examined in four different conventions between 1969 and 2005 (i.e., the Granada convention – in 1969, the Valetta convention – in 1992, the Florence convention – in 2000, and the Faro convention – in 2005). The 1969 Granada convention on the protection of archaeological heritage recognised and agreed that the artistic and historical value of monuments and their existing social uses should be respected (Olivier, 2017). The Granada agreement was revised in the 1992 Valetta convention, where experts were required to guide the public on the value of heritage through their expert understanding of the cultural value of archaeological heritage was emphasised and acknowledged (Olivier, 2017). Nevertheless, the Granada and Valetta conventions applied a top-down approach despite their positive focus on the public.

In contrast to these two earlier conventions, the Florence convention on European landscape in the year 2000 represented the start of a bottom-up approach, where the public, regional and local authorities, were encouraged to actively participate in issues relating to the cultural landscape, its policies and implementation (Olivier, 2017). Moreover, the 2005 Faro convention recognised and emphasised that everybody has the right to participate in any cultural heritage of their choice, as their individual and mutual responsibility to conserve cultural heritage. Based on agreements from the four conventions, Olivier (2017) argued that society would have greater opportunities of building more practical public support for cultural heritage if public opinions were respected. Also, building a significant two-way engagement system with the public and local communities would promote well-informed public opinions.

While most developed societies are keen to conserve their heritage buildings as assets due to the significant values such buildings present to their communities, the fundamental purpose for the conservation of heritage buildings in developing societies, on the other hand, is usually the income generated from tourism (Greffe, 2004). Heritage conservation in provincial communities could sometimes be perceived as a hindrance to modernisation and development processes (Aigwi, Filippova, Ingham, & Phipps, 2021), as other conservation purposes are usually of little importance to such public or the government (Timothy & Nyaupane, 2009). According to Greffe (2004), changes in a place's economic and cultural environment largely control the public's awareness and perception of heritage preservation. The tensions that arise during discussions to redevelop city centres with heritage assets require new planning strategies that emphasise the critical economic and cultural values for sustainable development (Amit-Cohen, 2005). Accordingly, unique heritage assets with economic and cultural values should be considered in city-centre redevelopment processes. The development of decision-making tools to prioritise significant heritage buildings for redevelopment purposes should also capture cultural and economic values (Aigwi et al., 2022).

Following the 2010/2011 Canterbury seismic events in New Zealand, which caused significant damage to heritage buildings (Ingham & Griffith, 2010; Potter, Becker, Johnston, & Rossiter, 2015), the earthquake-prone building legislation was amended, and all pre-1976 buildings with three storeys or more were categorised as potentially earthquake-prone buildings. Consequently, most heritage buildings in New Zealand were classified as earthquake-prone buildings, whose building owners were mandated by legislation to strengthen up to 67% or at least 34% new building standard (NBS) rating within a given timeframe to reduce the number of deaths and damage to buildings during future seismic events (MBIE, 2016). Owners of earthquake-prone buildings who fail to comply with these regulatory requirements after the specified timeframe would have their buildings demolished by the government (Aigwi, Egbelakin, et al., 2019; Aigwi, Filippova, et al., 2020; Aigwi, Ingham, Phipps, & Filippova, 2020).

Consequently, some heritage building owners who are not sure of the return on investment from seismically retrofitting their buildings usually abandon their buildings for demolition (Aigwi, Phipps, Ingham, & Filippova, 2019). Most of these abandoned buildings generally in the central business districts of New Zealand cities, were left derelict for so long that they started becoming an eyesore to the public (Yakubu et al., 2017), hence, reducing their socio-economic value and increasing the negative perception of the public regarding heritage buildings. Accordingly, it has become very challenging for owners of heritage buildings to rent out or sell their buildings for profit in New Zealand's current property market. Under these socio-economic stresses, most heritage building owners would instead perceive their buildings as liabilities than as assets (Greffe, 2004) and would prefer them to be demolished and replaced with newer buildings.

The adaptive reuse approach is a proven sustainable intervention for conserving cultural heritage within the existing built environment, by ensuring that cultural heritage is conserved in a manner that best contributes to sustainable development (Aigwi, Ingham, et al., 2020; Pintossi, Kaya, & Roders, 2023), and circular city planning (Gravagnuolo, Girard, Kourtit, & Nijkamp, 2021). However, the adaptive reuse potentials of heritage buildings in New Zealand may not have been fully realised due to slow adoption by investors and lack of incentives from the government (Aigwi, 2020). Hence, most of these buildings are often abandoned till they start revealing pronounced structural damage and decay up to the point where demolition becomes a more logical solution (Aigwi, Duberia, & Nwadike, 2023).

Education plays a significant role in shaping the public's perception, value, and character, hence, controlling the future interactions of the public with their surroundings (Delors, 1998). It could be deduced that the importance attached to heritage buildings by the public could be shaped by their judgment and perception of several tangible manifestations of history through education (Dowler et al., 2006) and shared memories told as stories (Moore & Whelan, 2016). In New Zealand, heritage education has influenced prioritising the protection of the architectural facets of built heritage amid current challenging regulatory pressures regarding compliance with the earthquake-prone building legislation (Aigwi, Phipps, et al., 2019). Also, New Zealand's existing environmental education curriculums relating to culture and heritage have promoted the learning of specific historical eras and their respective tangible remains (Chapman, 2011), thereby endowing the legacy of cultural heritage values in the forming minds of future generations.

Furthermore, public participation facilitates urban planning processes intertwined with built heritage management (Oevermann, Degenkolb, Dießler, Karge, & Peltz, 2016) and has significant potential to address complex built heritage issues. Accordingly, public participation plays a vital role in heritage conservation activities and must be included in stakeholder decision-making processes to achieve sustainable communities (UNESCO, 2021). Therefore, understanding the public's perception of their historic landscape and urban heritage is essential to implement strategies that are more aligned with contextual reality (García-Fernández, Rey-Pérez, & González, 2023).

2.2. *The heritage building as a 'public good'*

The public good component of heritage buildings is the external benefit of the buildings which cannot be gained by the owners of the buildings, such as benefits to other commercial and residential property owners in the precinct, to tourist visitors from other areas, to non-tourist visitors (i.e., visiting the area for work, shopping, leisure, etc.), and, the general public who are non-owners and non-visitors of heritage buildings with a passion for heritage value (Abelson, 2000). Although most owners of heritage buildings would retain their buildings (or the

essential features, at least) in situations where the private benefits are great, public benefits usually provide the primary justification for most heritage listings (Abelson, 2000). Moreover, heritage buildings as public goods are significant due to the benefits gained by both their purchasers and the entire society once provided.

The significance of the public good component has been emphasised through arguments of their contributions towards enhancing local and national pride and identity, international prestige, providing continuing education for adults and younger generations, critiquing social policy, fostering personal development, integrating people into society, and encouraging entrepreneurship aimed at driving economic growth (Snowball, 2020). If the benefits of heritage preservation extend beyond those that accrue to the investor, then the individual's investment in such activities will not be optimal from public's perspective (Ryberg--Webster & Kinahan, 2014). These benefits may include the positive impact on the economic well-being of non-investors, such as the revitalisation of urban areas, the ability to visit and appreciate tangible cultural heritage, and the preservation of these resources for future generations (Ryberg-Webster & Kinahan, 2017). While tax incentives have been used by the government to encourage the preservation of built heritage, they were introduced at the national level to offset tax code biases that favour new construction over existing ones (Feigenbaum & Jenkinson, 1984).

Several studies have identified the socio-economic, cultural and political significance of heritage buildings to the public through their contributions as public anchors to enhance community resilience following external threats to the community (Borzaga & Galera, 2012; County, 2009; Ingold, 2011; Robertson, 2016), during post-disaster recovery (Jain, Murty, Chandak, Seeber, & Jain, 1994; Jigyasu et al., 2013; Lee, Li, & Kim, 2007), in the retention of visual heritage features and sustenance of architectural history of the place (Aigwi, Egbelakin, & Ingham, 2018; Gospodini, 2004; McCarthy, 2012; Throsby & Petetskaya, 2021), in the conservation of the history and narration of place (Aigwi, Phipps, et al., 2019; Nasser, 2003), in reinforcing culture, shared identity, and sense of place (Allen Consulting Group, 2005; Graham, Ashworth, & Tunbridge, 2016; Milne, 2011), in the educational transfer of knowledge from the past to future generations (Bakri et al., 2015; Kajda et al., 2018), and in political empowerment (Abercrombie, Hill, & Turner, 1990; Bourdieu, 1977; Habermas, 2015). Such contributions support heritage buildings as public goods. However, other works of literature have acknowledged the competing narratives and rationalities that frame conservation policies focusing on cultural values (While, 2007), nostalgia (Carmona, 2014), place identity (Graham & Howard, 2008), or urban regeneration (Aigwi, Phipps, et al., 2019; Alpopi & Manole, 2013; Pendlebury, 2002; Seo, 2020). Accordingly, although the perception of the public regarding the value of conserving heritage buildings tends more towards recognising the significance of the buildings for the extensive and futuristic public good, answers to questions regarding 'what should be protected?', 'why?', and 'in what form?' remains unclear (Jones, 2017; Parkinson, Scott, & Redmond, 2016b).

Before heritage buildings can be considered as pure public goods, the buildings will have to be both non-excludible and non-rivalry in consumption (Navrud & Ready, 2002). This implies that an individual's consumption of the public goods of heritage buildings will not lessen the benefits available to others (Towse & Hernández, 2020). However, the extent of the characteristics of the public good of heritage buildings may vary. For instance, whereas a visit to a heritage building used as a museum or theatre would have a private value to the visitor who would be willing to pay and exclusion for those who are unwilling to pay, visiting a city to have a view of its heritage precinct would provide private value to the visitor who cannot be charged for an entry ticket (Towse & Hernández, 2020). Also, heritage buildings would have spillover social benefits when the payment from their consumption benefits the public by fortifying a sense of local or national identity. Some contingent valuation studies (Arrow et al., 1993; Mitchell & Carson, 2013; Smith, 2004) have reported people's willingness to pay for the protection of heritage buildings even though they will not get any special benefits from the buildings, the reason being, either they want the buildings to remain in existence for others or their future private consumption (Cuccia, 2020). Accordingly, the demand for the public goods components of heritage buildings does not fully reflect the value of the buildings from varying consumer experiences and tastes (Towse & Hernández, 2020).

While most individuals will believe that heritage buildings provide significant value to society, not all would accept that such values can be measured or should be measured. A potential drawback of measuring the composition of the public good of heritage buildings is that those benefits are usually centred around the random utility theory, which requires the perceptions of value by the public (Snowball, 2020). Those perceptions of value can be changed since the random utility theory also considers intrinsic values, creating an envisioned market for the public to signify their value through their eagerness to pay (Klamer, 2003). In Addition, the public good component of heritage buildings is a compelling justification for using government funds to support built heritage (Snowball, 2020). Policymakers and regulators are often obliged to make heritage-related funding decisions with existing information sourced through either qualitative or quantitative techniques. Whereas quantitative valuation techniques such as opinion surveys are more beneficial in providing attitudinal evidence in public policy, it is challenging to distinguish those benefits using qualitative valuation techniques even though they may be applied to measure longer-term values that have been socially constructed (Snowball, 2020). Hence, when tough decisions about public funding allocations to support the retention of heritage buildings arise, the perception of the public regarding the public good component of heritage buildings would have useful policy implications.

3. Research approach

3.1. Overview of the study area and research problem

This paper's geographical study area is Invercargill, a provincial city located in the southernmost part of New Zealand's South Island and has a current population of 54,204 residents (Statistics New Zealand, 2018). Just like other New Zealand districts, Invercargill has a district plan (Invercargill City Council, 2019). Invercargill's district plan is a council document prepared under the Resource Management Act 1991; RMA, 1991) to manage all development activities relating to land use within the Invercargill, including where the activities can occur, what land can be developed, and what cultural and natural features can be safeguarded. The focus of Invercargill's district plan is to support the district council in fulfilling its legal obligations of promoting the sustainable use of the resources within the district and supporting the implementation of the public's vision for Invercargill into the future (Invercargill City Council, 2019).

Invercargill's district plan has a heritage section that describes the Council's legal obligations of protecting heritage buildings in the city from inappropriate developments. Accordingly, there are currently 169 heritage buildings protected under Invercargill's district plan (Invercargill City Council, 2019) and 73 heritage buildings listed in the national register under the Heritage New Zealand Pouhere Taonga Act 2014; Heritage New Zealand, 2019). In a quest for city-centre regeneration, the Council contracted professional heritage consultants to reassess all heritage buildings in Invercargill's city-centre, focusing on the significance of their heritage character from a streetscape perspective. As part of the recommendations from the assessment, 26 heritage buildings were suggested to be removed from the protected list in the district plan, which triggered discussions among members of the public on the significance of the heritage buildings in Invercargill. Consequently, the Council was keen to understand the perception of Invercargill's public regarding the importance of heritage buildings in Invercargill to help the Council decide if any variation to the district plan regarding the protection of heritage buildings is worthwhile.

3.2. Data collection method

This study focuses on the public perception of the heritage buildings in Invercargill's city-centre. Since public perception trends incorporate the aggregation of individual opinions on a given topic within a specified timeframe, data are usually gathered from either public opinion surveys (Dowler et al., 2006) or interviews (Parkinson et al., 2016a). For this study, the online survey methodological approach was selected over interviews as the data collection instrument because surveys allow respondents greater control to input their data transparently into the online system without bias, present better opportunities for researchers to use an automated system to solicit a broader range of public opinions regarding the research topic (Wright, 2005). Also, the online survey technique is a faster, cheaper and more convenient method of gathering public opinions from a higher number of respondents within a shorter timeframe (Bethlehem & Biffignandi, 2012). Although online surveys can easily incorporate technological innovations to gather data from a larger sample of 'hard-to-involve' respondents, issues regarding the sampling of the respondents are often prevalent (Andrews, Nonnecke, & Preece, 2003). In addition, some respondents may also lack the technological expertise to take the surveys (Evans & Mathur, 2005). To alleviate this issue, according to Gunn (2002), a straightforward instruction through a URL link with a unique identifier was embedded on Invercargill City Council's official website for each respondent to click on and answer the survey questions.

The simple random sampling technique (Starnes, Yates, & Moore, 2010) through self-selected participation was adopted for this research to eliminate bias in gathering participants for the online survey, such that all the respondents had equal chances of being selected to take the survey at any stage of the sampling process. Accordingly, an online survey link was available to all members of Invercargill's public who visited the Invercargill City Council's website between 17th - 24th March 2018. At the end of the sampling timeframe, a total of 649 people responded to the online survey. The questionnaire had 14 sections with both closed and open-ended questions (see Appendix 1). Additionally, a five-point Likert scale was used to measure the attitudes (i.e. 1 = positive attitude; 5 = negative attitude) of the respondents regarding the extent to which they agreed or disagreed with some of the survey items (Likert, 1932).

3.2.1. Survey reliability check

For the reliability check, the Cronbach's alpha technique (Pallant, 2013; Tavakol & Dennick, 2011) was used to estimate the internal consistency levels of items across the three scaled questions of the online survey. Besides, a non-parametric statistical test by Friedman (1937) was employed to check for the significant variations in the impact that each perceived online survey question would have across multiple responses, regarding the public perception of heritage buildings in Invercargill, New Zealand.

Using the Cronbach's alpha technique for reliability check, the α coefficient can be evaluated using the given equation (Tavakol & Dennick, 2011):

$$\propto = \frac{k \times \bar{c}}{\bar{v} + (k-1)\bar{c}} \geq 0.7 < 1.0 \quad (1)$$

where.

k = total number of questions
$\bar{c}$ = average of the covariance that exists between all items
$\bar{v}$ = average of the variance of items

For all survey items, the reliability statistics estimated the Cronbach's α coefficient as 0.967 > 0.7; and inter-item correlations mean as 0.547 > 0.5, implying an excellent internal consistency level among all measured items in the online survey.

3.2.2. Hypothesis and decision rule

Null hypothesis: There would be no significant variations in the impact that each perceived online survey question would have across multiple responses, regarding heritage buildings in Invercargill, New Zealand.

Decision rule: Reject the null hypothesis if the level of significance (p) is less than 0.05.

4. Results and discussion

Findings from an analysis of the online survey are summarised in the following sections.

4.1. Characteristics of respondents

The results from Fig. 1 show that 73.5% of the online survey respondents were existing ICC ratepayers. Also, while the Invercargill residential ratepayers were significantly represented in the online survey (68.4%), other public actors such as owners of heritage buildings in the city-centre (2.3%), owners of non-heritage buildings in the city-centre (2%), commercial tenants in the city-centre (4%), residential tenants living in the city-centre (3.2%), and others (21.3%) were poorly represented. Nevertheless, the high proportion of ICC ratepayers and Invercargill residential ratepayers who participated in the online survey implies that the financial commitment of the respondents to Invercargill greatly influences how they perceive issues pertaining to the administration of social policies regarding the heritage buildings in Invercargill's city-centre (McCord, 2018).

There was a good balance in the gender representation of the respondents that took part in the online survey, with *304* females (46.8%) and *311* males (47.9%). Also, the respondents between the ages of *25-34* were the most represented age group (23.9%) that took the online survey, closely followed by those between the ages *35–44* (22.3%) and *45–54* (19.3%), respectively. On the other hand, the respondents who were 75 years or older were the least represented age group (2.1%) in the survey, followed by those whose ages fell between *18-24* (7.1%), *65–74* (7.6%), and *55–64* (13.9%). The low participation of the older age groups in the online survey could be attributed to the inadequacy of technological expertise for this category of respondents (Evans & Mathur, 2005). Refer to Figs. 2 and 3 for a graphical representation of these findings.

4.2. Public perception of the significance of heritage buildings in invercargill

Of the 649 respondents that completed the online survey, 77.2% believe that members of the Invercargill public should have their say on what happens with heritage buildings regarding potential alterations or demolition. Local community participation in issues relating to the conservation of built heritage usually allows the public to exercise their influence over investment choices, management, design alternatives, policy formulation, and monitoring of development interventions (Yung & Chan, 2011). The Burra and New Zealand Charters also emphasise the importance of public participation by involving residents of urban areas and historic towns in the conservation planning of their built heritage (ICOMOS, 2010, 2013).

When the respondents were asked if the heritage features and historic character of heritage buildings prompted those who owned heritage buildings in Invercargill's city-centre to purchase their property, 0.9% agreed, 8.3% disagreed, and 86.1% indicated that the question did not apply to them. The high proportion of respondents who found the question not applicable suggests that they are most likely Invercargill residential ratepayers (68.4%) who do not have any commitment to the heritage buildings in the city-centre.

Furthermore, regarding the public perception of the significance of heritage buildings in Invercargill, the survey respondents agree that

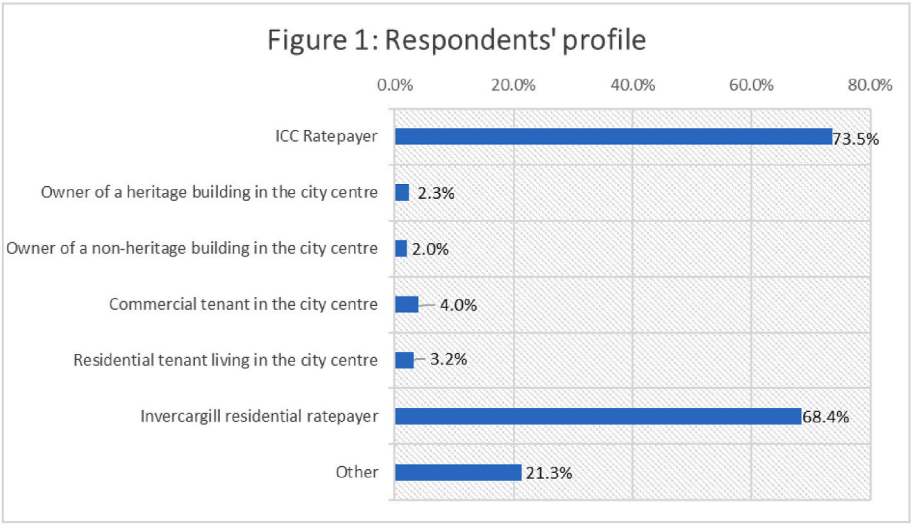

Fig. 1. Respondents' profile.

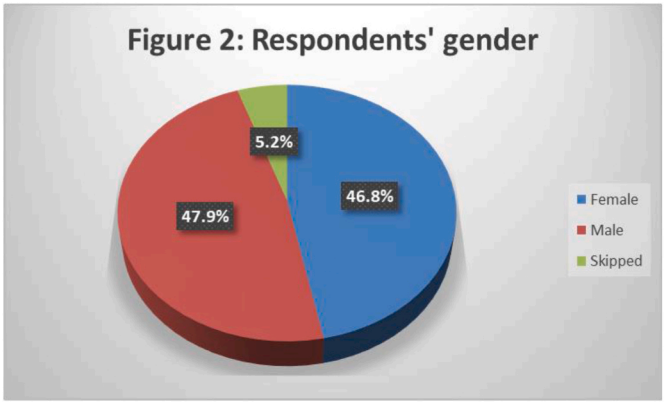

Fig. 2. Respondents' gender.

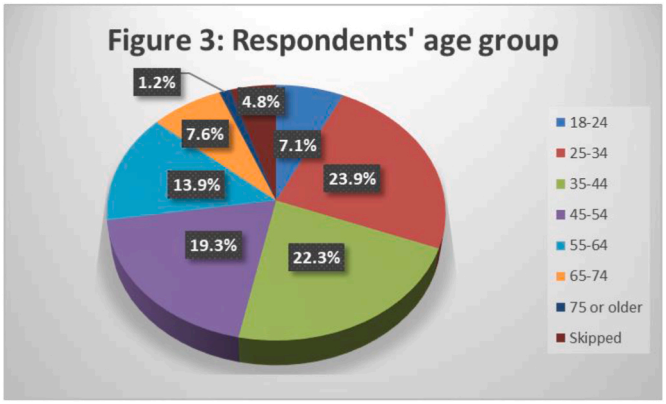

Fig. 3. Respondents' age group.

Invercargill's heritage buildings contribute "a sense of character" (33.6%), "scale and streetscape quality" (26.2%), "valuable resource and narration of Invercargill's past" (32.8%), and, "tourists attraction" (26.2%). However, they disagree that "all heritage buildings in Invercargill's city-centre should be demolished and replaced with modern structures" (34.7%). These findings align with a similar New Zealand study that explored the benefits of built heritage preservation to promote city-centre regeneration (Aigwi et al., 2018).

Additionally, results from Friedman's statistical analysis ($p = 0.001 < 0.05$) imply that the null hypothesis should be rejected (See Table 1). Therefore, there would be significant variations in the impact that each perceived question in Fig. 4 would have across multiple responses, regarding heritage buildings in Invercargill, New Zealand.

4.3. *Public perception of the retention of heritage buildings in ICC's district plan*

As shown in Fig. 5, about 74% of the respondents agree that the list of heritage buildings on ICC's district plan should be narrowed down as recommended by professional heritage consultants. However, whereas 72.6% of those who agree to the narrowing down of the list want ICC to strip the 26 recommended buildings of their heritage recognition in the district plan, 18% disagree (See Fig. 6). Also, the following factors were prioritised from the survey responses when the participants were asked about the factors they would consider as crucial in determining whether a heritage building should stay on ICC's district plan list or not (see Fig. 7): (i) "the building is well-maintained" with 66.1%; (ii) "the building is an example of a particular style of architecture" with 64.6%; (iii) "the building has cultural significance" with 39.4%; (iv) "the building has been used by a person or an organisation instrumental in the history of Invercargill" with 31%; (v) "the building has community use" with 29.1%; (vi) "the building was used for an event that was instrumental in the history of Invercargill" with 28.5%; (vii) "the building is part of a group of other heritage buildings" with 25.7%; (viii) "the building is old" with 11.9%; (ix) others with 11.2%.

Well-maintained heritage buildings would contribute to safeguarding the cultural values of the historic fabrics of heritage buildings by minimising larger and costlier repairs through minimal cosmetic interventions (Eken, Taşcı, & Gustafsson, 2019; Jenkins, 2018), hence, reducing the likely deteriorations that may occur from obsolescence factors (Yakubu et al., 2017). The importance of well-maintained heritage buildings has been acknowledged by heritage charters as a fundamental procedure for conservation (ICOMOS, 1931, 1964, 2010, 2013, 2019). Moreover, when heritage buildings are well-maintained, the

Table 1
Friedman's test statistics.[a].

N	649
Chi-Square	1887.156
Degree of freedom	6
Asymptotic Significance	0.001

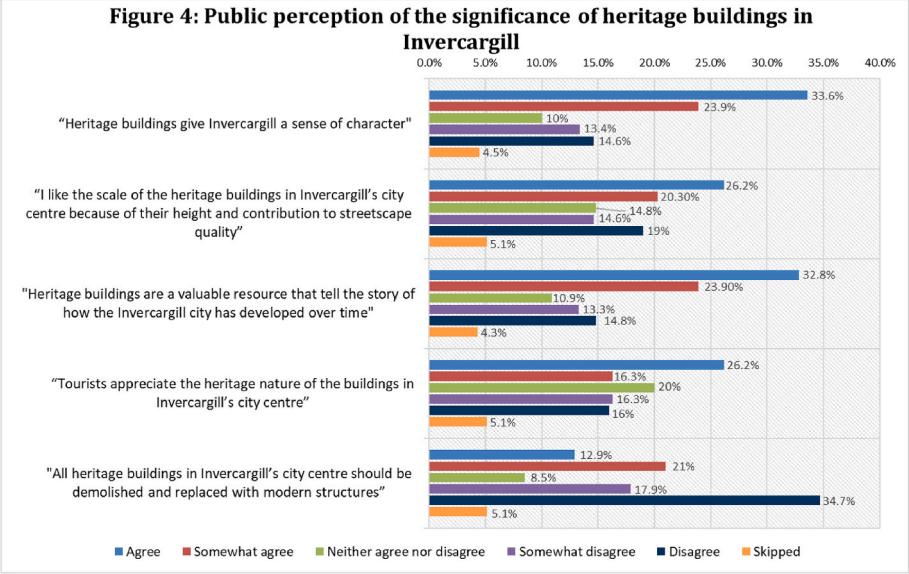

Fig. 4. Public perception of the significance of heritage buildings in Invercargill.

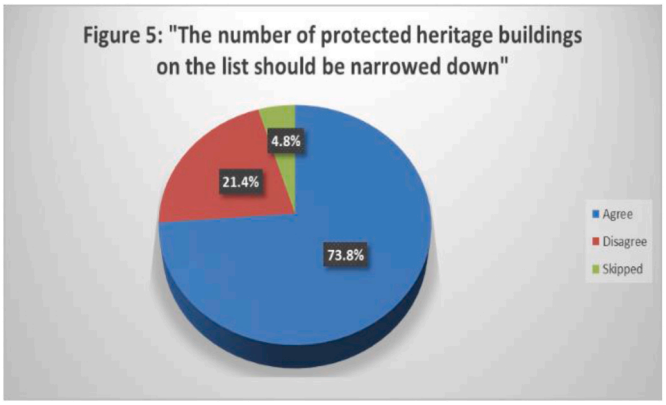

Fig. 5. "The number of protected heritage buildings on the list should be narrowed down".

Fig. 6. "The recommended 26 buildings should be stripped of their heritage recognition in the district plan".

public tends to perceive these buildings as monuments that need to be retained, rather than being eyesores due to their old and dilapidated conditions from lack of maintenance (Aigwi, Filippova, et al., 2020).

Furthermore, results from Friedman's statistical analysis ($p = 0.001 < 0.05$) imply that the null hypothesis should be rejected (See Table 2). Therefore, there would be significant variations in the impact that each perceived question in Fig. 7 would have across multiple responses, regarding heritage buildings in Invercargill, New Zealand.

4.4. Public perception regarding council incentives to protect heritage buildings in ICC's district plan

The public's attitude is distinct regarding whether the local Council should provide some assistance or incentives to the owners of heritage buildings in Invercargill's city-centre, to enhance the protection of such buildings. As shown in Fig. 8, about 62% of the respondents agree, while 33% disagree. These findings are in line with other studies that have identified how government incentives significantly stimulate the preservation activities of built heritage (Ryberg-Webster & Kinahan, 2017; Wojno, 1991).

When questioned on which council incentives would make a meaningful contribution towards the retention of the heritage features of the heritage buildings in Invercargill's city-centre, the survey respondents who agreed that ICC should provide incentives ranked the following incentives accordingly (see Fig. 9): (i) "rates relief when maintaining or developing the site while retaining the heritage features" with 49.5%; (ii) "reduce Council building consent fees" with 44.5%; (iii) "provide education, guidance and advice" with 37.1%; (iv) "awards and public recognition for good examples" with 35.4%; (v) "provide low-interest loans" with 32.5%; (vi) "provide grants" with 26.8%; (vii) "nothing, the building owners have sole responsibility for their buildings" with 24.5%; (viii) "contribute towards repainting costs" with 19.9%; (ix) "one-off payment to owners of each heritage building" with 8%; and (x) others with 6%. Accordingly, government incentives in the form of rate relief have been successfully applied by local councils to encourage owners of heritage buildings to embrace preservation activities since rate relief is primarily independent of heritage restoration expenditures (Revelli, 2013).

Also, results from Friedman's statistical analysis ($p = 0.001 < 0.05$) imply that the null hypothesis should be rejected (See Table 3). Therefore, there would be significant variations in the impact that each perceived question in Fig. 9 would have across multiple responses, regarding heritage buildings in Invercargill, New Zealand.

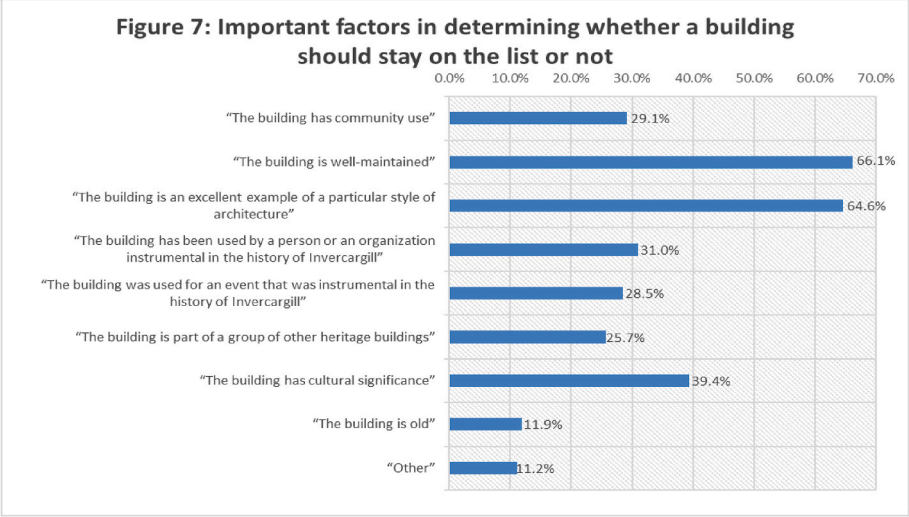

Fig. 7. Important factors in determining whether a building should stay on the list or not.

Table 2
Friedman's test statistics.[a].

N	649
Chi-Square	2084.584
Degree of freedom	10
Asymptotic Significance	0.001

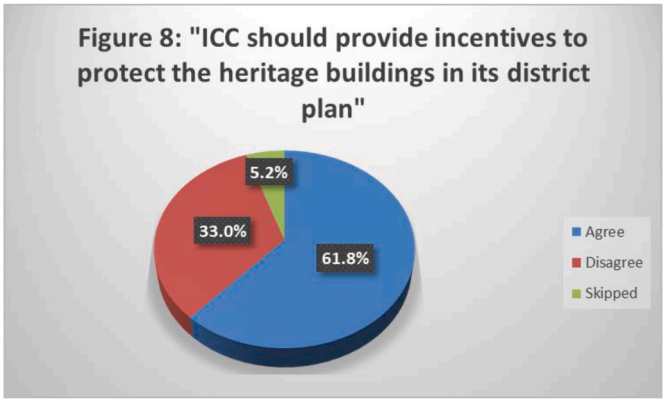

Fig. 8. "ICC should provide incentives to protect the heritage buildings in its district plan".

4.5. Public perception of the preferred heritage buildings to be protected in Invercargill's city-centre

Open-ended responses from the online survey identified opinions of the public relating to the following themes (see Fig. 10): (i) "demolish all the historical buildings in Invercargill's city-centre and replace them with modern structures" (51%); (ii) "retain all the historical buildings in Invercargill's city-centre" (20%); and (iii) "retain only historical buildings and façades in the city-centre with significant heritage values and demolish the rest" (29%). Accordingly, about 7% of the respondents who were in favour of replacing the inner-city historical buildings with modern structures (i.e., mostly in the 25–44 age group) were also concerned about their safety from earthquake hazards that the older buildings would pose to them. Meanwhile, the themes depicted in Fig. 10 are quite contrary to the responses from the aspect of Fig. 4 regarding the demolition of heritage buildings in Invercargill's city-centre. This could be attributed to the varied aspects of the online survey. While the themes in Fig. 10 concentrated on the protection of heritage buildings in Invercargill's city-centre alone, the focus of the questions in Fig. 4 was on the significance of heritage buildings in the whole of Invercargill.

In addition, when the respondents were asked about what heritage buildings they preferred to be protected in Invercargill's city-centre, the top 10 buildings that emerged were (see Fig. 11): (i) Former Bank of New South Wales; (ii) Bethel New Life; (iii) Grand Hotel; (iv) Former National Bank; (v) Town Hall; (vi) Southland Times; (vii) Alexandra building; (viii) Water Tower; (ix) First Church; and (x) Dee Street Streetscape. Several observations emerge about the buildings prioritised by the public. Majority of them occupy prominent locations (corner sites), represent significant communal assets (Town Hall and First Church), have symbolic value (Water Tower) and few remaining exemplars of the architectural style of the early settlement period. Evaluating the most popular reasons for promoting heritage protection in Invercargill's city-centre being the level of maintenance, architectural style, and communal use, the identified set of buildings is a visual representation of these choices.

5. Conclusions and policy implications

Although a relatively young city established in the late 1850s, Invercargill has over 160 buildings that the local Council has recognised to have heritage significance, of which 73 buildings are listed on New Zealand's Heritage Places list. While Invercargill's public agrees that heritage buildings give the town its sense of identity, and are a rich source of history for the future generation, a significant portion of the central city heritage buildings have come under threat as a result of poor maintenance/neglect and increased rate of new developments in the city fringe. The local Council is, therefore, developing a strategy for the city-centre heritage and is attempting to achieve a balance between what is protected and where the heritage protection can be relaxed. However, if public perception is not considered when making decisions about conservation, it would be challenging to get the buy-in from the locals.

This paper examined the public perception of heritage buildings in the city-centre of Invercargill. An online survey was used to gather information from over 600 respondents to address policy-related issues regarding the retention of a significant number of heritage buildings in Invercargill's city-centre. The parameters of the online survey were analysed to explore the interrelationship between those parameters, and the following conclusions were drawn. About 477 respondents who completed the online survey were ICC ratepayers, of which about 69% were Invercargill residential ratepayers. These findings imply that the financial commitment of Invercargill taxpayers

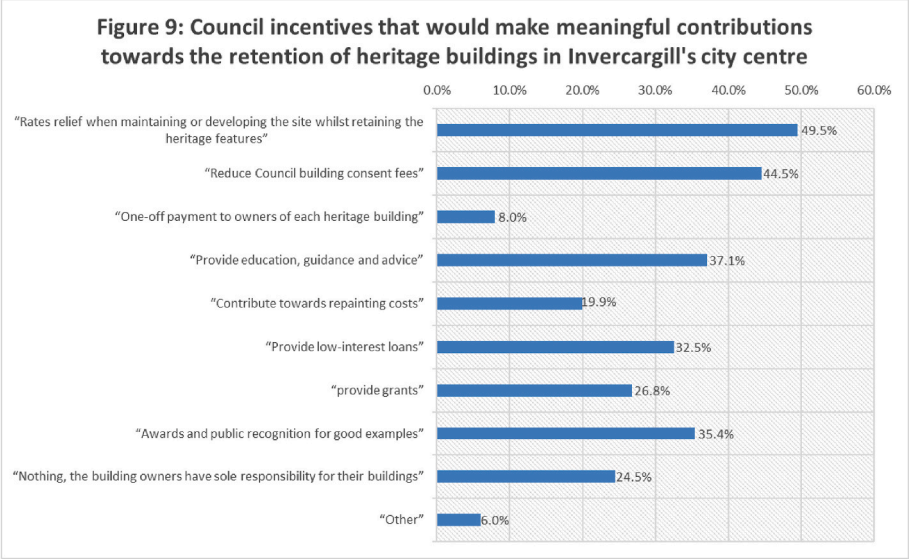

Fig. 9. Council incentives that would make meaningful contributions towards the retention of heritage buildings in Invercargill's city centre.

Table 3
Friedman's test statistics.[a].

N	649
Chi-Square	1586.784
Degree of freedom	10
Asymptotic Significance	0.001

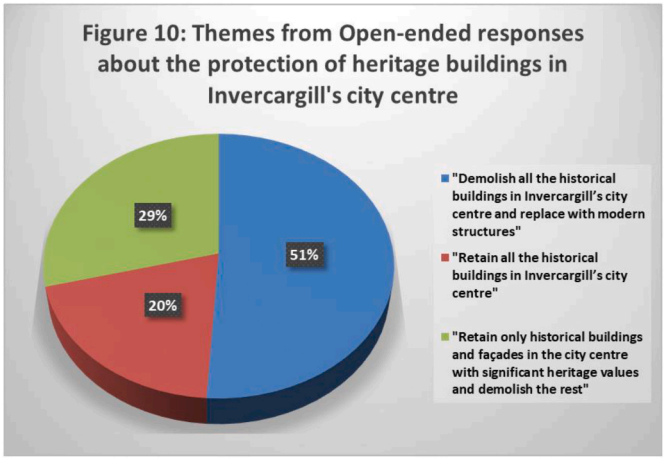

Fig. 10. Themes from Open-ended responses about the protection of heritage buildings in Invercargill's city centre.

greatly influences their willingness to pay and how they perceive issues about the administration of socio-cultural policies regarding the conservation of heritage buildings in Invercargill's city-centre (McCord, 2018). There was higher participation in the online survey by the younger age groups compared to the older age groups, which could be attributed to the inadequacy of technological expertise of the older age groups (Evans & Mathur, 2005). Also, the gender representation was marginally balanced, with 46.8% of females and 47.9% of males who took part in the survey. The Invercargill public believes they should have their say on what happens with heritage buildings in the city-centre in terms of potential alterations or demolition (77.2%), and disagree that all heritage buildings in Invercargill's city-centre should be demolished and replaced with modern structures (34.7%).

Substantial responses were found for respondents who agree (73.8%) that the number of heritage buildings on ICC's district plan list should be narrowed down as recommended by professional heritage consultants so that the Council can focus on protecting fewer heritage buildings in the city-centre. The respondents who agreed (72.6%) that the recommended 26 buildings should be stripped of their heritage recognition in Invercargill City Council's (ICC's) district plan were significantly more than those who disagreed (18%). The survey respondents also think that a well-maintained heritage building should be the most crucial factor in determining whether a heritage building should stay on ICC's district plan list. Out of 62% of the respondents who agree that the local Council should provide some form of assistance or incentives to the owners of heritage buildings in Invercargill's city-centre to enhance the protection of such buildings, about 50% think that incentives in the form of rates relief followed by reduced council building consent fees (44.5%) should be considered the most by the local Council.

The open-ended responses from the online survey identified a higher perception of the public (mainly in the 25–44 age group) regarding demolishing all the historical buildings in Invercargill's city-centre and replacing them with modern structures (51%). About 7% of the respondents who were in favour of replacing the inner-city historical buildings with modern structures were also concerned about their safety from the earthquake hazards that the older buildings would pose. The top 10 heritage buildings in the city-centre that Invercargill's public would like the local Council to protect are (i) Former Bank of New South Wales; (ii) Bethel New Life; (iii) Grand Hotel; (iv) Former National Bank; (v) Town Hall; (vi) Southland Times; (vii) Alexandra building; (viii) Water Tower; (ix) First Church; and (x) Dee Street Streetscape. All ten preferred heritage buildings currently have statements of significance in ICC's district heritage plan.

Based on the above conclusions, some policy implications for Invercargill City Council should include increasing their publicity on the preservation of heritage buildings to raise public awareness, especially for non-ICC ratepayers and the younger age groups, to improve the overall public responses to heritage-related issues. The online survey results demonstrated the concerns of older age groups who agreed to the importance of retaining most of the inner-city heritage buildings and are more willing to take individual actions. Also, policymakers can use taxpayers' willingness to pay for the conservation of heritage buildings as an indicator of how taxpayers perceive issues about the administration of social policies regarding their cultural heritage (McCord, 2018). This study's findings revealed the significance of local knowledge on relevant built heritage parameters in Invercargill, and its

Fig. 11. Top 10 public preferences of heritage buildings in Invercargill's city-centre to be protected.

role in enhancing the usefulness of macro-level heritage projections and local built heritage conservation initiatives. These insights could serve as a starting point towards formulating a sustainable management plan for Invercargill's "fast disappearing" inner-city heritage buildings. A limitation of this study could be linked to using surveys as the only data collection instrument. Further studies may explore introducing a qualitative research approach, such as using interviews, to address the drawbacks of using only surveys to elicit information about complex technical issues.

CRediT authorship contribution statement

Itohan Esther Aigwi: Writing – original draft, Writing – review & editing, Visualization, Formal analysis, Data curation, ConceptualizationConceptualisation, Methodology, Investigation, Funding acquisition. **Olga Filippova:** ConceptualizationConceptualisation, Methodology, Investigation, Funding acquisition. **Bridgette Sullivan-Taylor:** ConceptualizationConceptualisation, Methodology, Investigation, Funding acquisition.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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Appendix A. Supplementary data

Supplementary data related to this article can be found at https://doi.org/10.1016/j.ccs.2023.100538.

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