Article

Identifying the Social, Urban, and Environmental Co-Benefits of Coworking Spaces in Irish Towns

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Abstract: Coworking spaces are shared workplaces in which desk space is available to remote workers, freelancers, and small enterprises. They offer the social, technological, and networking advantages of an office while allowing workers the freedom to reside in a location of their choice. Remote working has become a common work practice in recent years, accelerated by restrictions introduced during the COVID-19 pandemic, and Irish Government policy strongly supports coworking spaces across the island to support employment diversity and retain populations in towns and villages. Along with the provision of viable workplaces, coworking spaces can provide a range of co-benefits to their localities, such as stimulating local economies and reducing commuting-related emissions. This paper describes a mixed-method study seeking to identify this range of co-benefits through a survey of coworking space users and semi-structured interviews with coworking space founders, managers, and coordinators. The study uses an integrative process to categorise the findings into social, urban, and environmental co-benefits. The research finds that locating a coworking space in a central rather than peripheral urban area can support and optimise many of these co-benefits.

Keywords: remote working; coworking; urban rehabilitation; mobility; environment

1. Introduction

Coworking spaces (hereafter CWSs) have become a common feature of the contemporary work landscape. While providing a valuable service to freelancers, entrepreneurs, and remote workers, they also have the potential to contribute positively to their communities through the generation of benign co-benefits. Research to date has explored some of these co-benefits, notably the urban impacts of CWSs. This paper seeks to build on this literature by identifying as broad a range as possible of co-benefits associated with CWSs, through an examination of the lived experience of users and operators of CWSs located in Ireland.

CWSs are shared workplaces facilitating both freelance/self-employed and remote workers. The Irish government’s Remote Work in Ireland policy document from 2022 refers to coworking as regular attendance at a shared workplace where collaboration and networking outside of one’s team or organisation is encouraged [1]. CWSs differ in size, role, and patronage, with both private and not-for-profit business models. Yu et al. [2] identify CWSs as offering a mixture of physical space, beneficial characteristics (community, flexibility, social ties), and shared workplace facilities (Wi-Fi, IT security, hardware such as printers). The Irish Government’s national online reservation portal for CWSs, Connectedhubs.ie, uses a broad definition of CWS, with coworking and collaborative spaces, hot desks, meeting facilities, and virtual office facilities all listed [3]. This paper adopts this broad definition.

Co-benefits are additional benefits accruing to communities, users, economies, and environments from the operation of CWSs, in addition to the primary benefit of the provision of a viable workplace. The term co-benefit often appears in the context of climate action, referring to advantages gained from lowering GHG emissions that are not directly related to the primary purpose of the activity.
to climate, such as energy security through renewables development [4]. For this study, the term similarly relates to additional beneficial impacts from the operation of a CWS that were not the primary intention in its creation.

Modern information and communication technologies facilitate flexibility in worker location, with increasing numbers working remotely from the employer’s office, either at home or in satellite workplaces known as telecentres or coworking spaces [5]. Initially, remote working was promoted for social benefits, as shorter commuting times could facilitate family life and leisure activities [5]. In recent decades, environmental concerns such as traffic congestion, air quality, and climate change have increased interest in remote working [6]. COVID-19 travel restrictions normalised remote work for a large sector of the working population [6].

Several potential drawbacks of remote working from home have been identified, such as a lack of networking opportunities, limited access to office infrastructure, and difficulty in maintaining a balance between work and personal life [7]. CWSs can address these drawbacks by offering technology sharing, social and professional interaction, and an environment conducive to productive working [8]. Studies from Australia have found that remote workers are favourably disposed to working in neighbourhood CWSs rather than at home [9] and a high level of satisfaction among civil servants operating from a CWS relating to personal productivity, reduced traffic and commuting times, and familial and community benefits [10].

The development of CWSs since the 2000s has been driven by several factors, including the rise in the number of entrepreneurs and freelancers in that period along with advances in digital and mobile technologies [11]. The concept of CWSs as communities of co-workers was developed by Brad Neuberg in San Francisco in 2005, with the opening of the “Hat Factory”—a CWS for professionals and freelancers who sought networking and collaborative opportunities [12]. CWSs have been categorised by several studies, including one by Orel et al. [13], which describes four distinct types of contemporary CWSs: those catering to individual workers or groups, spaces with physical manufacturing capabilities, and start-up-oriented CWSs. CWSs have been identified as a key ingredient in the success of the 15 min city concept [14]. Travel from home to work is recognised as the greatest barrier to the 15 min city concept, with CWSs helping to reduce travel distances [14].

CWSs can be considered to reflect increased levels of precarious work practices resulting from employers outsourcing to workers on non-permanent contracts and offsite environments [15]. Predictions concerning the future of work include employers turning to CWSs as an alternative to investing in CWSs [16]. In the Global South, CWSs are seen as an aspirational working environment; however, the cost of attending a CWS can be prohibitive for local online freelancers [17].

Irish Government policy strongly supports CWSs as a means to increase participation in the labour force, improve productivity, attract and retain talent, balance regional development, and assist the transition to a low-carbon economy [18]. This policy support extends to the Government’s Town Centre First: A Policy Approach for Irish Towns document, which aims to revitalise Irish town centres [19], and the Our Rural Future: Rural Development Policy 2021–2025 document, which focuses on developing rural Ireland [20].

This paper contributes to the literature by identifying a range of co-benefits generated by CWSs. These are categorised in the study as social, urban, and environmental co-benefits. Section 2 contains a literature review of research into remote working and CWSs, and their social, urban, and environmental impacts. Section 3 describes the research method (a survey of CWS users and semi-structured interviews with CWS founders, managers, and coordinators). Section 4 describes the results of the research and Section 5 discusses the significance of the findings.
2. Literature Review

Much research has been carried out into the social, urban, and environmental impacts of remote working. CWSs are a more recent phenomenon, and so research into their impact is more limited. Academic literature relating to CWSs has grown considerably in recent years [21]. Much of the literature views CWSs through a business and management/innovation/productivity/economic geography lens. Urban issues relating to CWSs, such as trends in their choice of location, design, community impact, and urban regenerative potential are now being studied. This literature review combines research into remote working and CWSs to examine the impacts of CWSs on users and neighbourhoods and their economic impact on urban areas.


CWSs allow workers greater options in residential self-selection, as remote work by its nature can be carried out in any geographic location. This characteristic of CWSs has led the Irish Government to actively promote CWSs in rural locations as a means of allowing citizens to remain in, and relocate to, areas suffering population decline [20]. Similarly, the Chinese government views CWSs as a method of addressing social issues, including unemployment and social mobility [22]. Yu et al. [2] found that flexible work models and CWSs promote the allocation of workers to less congested regional areas. Research into residential self-selection explores how people choose where to live based on their travel needs and preferences [23]. The capacity for CWSs to allow increased choice of residential self-selection can be affected by the availability of transit options, with higher levels of satisfaction evident amongst those who choose to live adjacent to a preferred transit mode [24]. Different demographic groups have been shown to exhibit general patterns in preferences for residential self-selection. For example, millennial workers can have less defined boundaries between work and leisure and therefore are more attracted to CWSs in town and city centre locations [25]. CWSs can overcome several challenges facing rural areas, such as lack of services and scarcity of social contact [26,27]. The social and collaborative potential of CWSs, including when located in public libraries, can allow fellow CWS users to become assets and resources for other users [28].

2.2. Urban Impacts: Local, After-Hours, and Culture-Led Economies

CWSs represent a new urban typology, which can have positive impacts on neighbourhood economies. Buksh and Murat [29] calculate economic gains based on a 120-member digital work hub (a collaborative workspace including co-workers and teleworkers) with each member working an average of 3.5 days per week, equating to AUD 19.2 m per annum for the local economy. CWSs facilitate new enterprises and community-based organisations, allowing them affordable office space in central areas [30]. CWS users provide extra economic activity to neighbouring businesses and retailers [31]. CWSs offer an alternative to retail in storefront locations, contributing vitality to retail-dominated areas and alternative uses for vacant retail premises [32]. CWSs can provide new uses for historic and vacant buildings, even in the absence of state supports, in locations such as Beirut, Lebanon [33].

In Milan, CWSs were found to initiate and contribute to evening/night/weekend activities in areas traditionally deprived of such events, while also contributing to the spontaneous agglomeration of innovative workplaces, reduction in vacancy rates, and strengthening of community ties in the areas in which they are located [12]. These positive urban impacts can be encouraged by public policy through the encouragement of bottom-up CWSs and facilitating interaction between CWSs and other initiatives in the fields of culture, creativity, and social innovation [12].

Bednár et al. [34] found that CWSs can be an effective tool for maintaining a dialogue between creative communities and local authorities with the mutual goal of attracting creative workers to the local creative ecosystem. Culture-led economic development occurs in urban centres capable of attracting design and other creative workers, who contribute to
town and city centre rehabilitation by occupying buildings in brownfield sites, supporting the local service economy, and interacting with the local area’s arts and culture scene [34].

2.3. Environmental Impacts: Commuting and Operational Energy

CWSs offer an alternative to commuting to an employer’s office. Emissions savings from commuting can occur when CWSs are located closer to an employee’s home than the employer’s main office [35]. Where energy savings from commuting are made due to a reduction in commuting distance, these can be undermined by rebound effects such as extra leisure time gained being spent in energy-intensive activities, including non-work-related travel [5]; part-time remote workers choosing to live further from their employer’s office, resulting in net increases in travel given longer commutes on non-remote working days [5]; and remote workers who normally commute by train choosing to commute by car to the CWS, particularly when travelling against the flow of traffic [36]. CWSs located close to employees’ housing promote active and public transport options [37], while co-workers based in suburban locations and rural areas are more car-dependent than those in medium-sized towns [38]. Mobility benefits to smaller communities were evidenced by Buksh et al. [29], who found that digital work hubs in Australia offered significant opportunities to improve local transport infrastructure by altering commuting habits and dispersing populations. The pattern of settlement resulting from a shift from urban to rural living enabled by CWSs influences environmental outcomes, as the built environment and travel behaviour are interrelated [24]. In Ireland, Kelly et al. [39] created a Working from Anywhere Index (WFAI), a transferable spatial methodology to identify the potential for working remotely, which can be used to identify locations for CWSs that can best benefit sustainable mobility and planning aims.

Operational energy impacts of CWSs are usually assessed in contrast to working from home or at an employer’s office. Hook et al. [5] examined the methodology and rigour of papers in this area and found that 26 of the 39 papers reviewed concluded that remote working reduced energy use, with 8 finding that remote working led to higher, or had a negligible impact on, energy use. The most rigorous studies in the sample generally found small, if any, energy savings, as these papers addressed rebound effects such as space heating of workers’ homes and the expansion of information and communications technology (ICT) in homes and CWSs. These rebound effects are an increasingly important aspect of energy impact calculation studies. Vaddadi et al. [40] examined if claims of remote working sustainability are undermined by the energy costs of establishing and operating CWSs, finding that the energy requirements of the CWSs themselves need to be compensated for by a reduction in energy consumption at the employer’s office, which could be achieved by desk sharing and/or reducing the floorplate.

This literature review describes the current state of knowledge around the impacts and co-benefits of CWSs in social, urban, and environmental terms. The current study examines all three strands simultaneously, expanding our understanding of what co-benefits occur and how they are generated, by investigating the activities of CWS users and the experience of operators of CWSs in an Irish context. The paper forms a holistic assessment of these co-benefits and identifies generating factors.

3. Materials and Methods

The research design set out to gain quantitative insights into the impact co-workers have on the environment and local economies, and a qualitative understanding of the experience of hub operators in an Irish context through both a survey and semi-structured interviews.

The survey focuses on three areas: the facilities available to the user of a CWS, their travel habits to and from the CWS, and their economic activity associated with the use of the CWS. The survey was distributed to identified CWSs, shared on social media, and emailed by co-workers to their colleagues. The sample size was 41. The data were inputted to the SPSS Statistics Version 27 software system for analysis and graph generation.
The semi-structured interviews were designed to gain a broad understanding of the character of the CWS as a workplace, its employees, its environmental policies, and any interaction existing between the CWS and the community. The interview transcripts were analysed by employing a coding process to identify themes and trends, including recurring motivations, issues, and opinions on the experience of operating CWSs. The trustworthiness of this thematic analysis was ensured by several measures, including employing consistent methods of data collection and storage, records of data analysis processes, supervision by a second researcher, and pilot testing of interview questions. A total of 30 CWSs listed on the website coworking.ie [41] were approached by telephone and email, with 16 agreeing to be interviewed. The CWSs are located in urban and rural locations of various scales. The sample contains 7 publicly funded CWSs and 9 private CWSs.

4. Results

4.1. Survey

The survey collected demographic information on age, gender, and nationality (Table 1).

<table>
<thead>
<tr>
<th>Variable</th>
<th>Response</th>
<th>No. (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>Female</td>
<td>13 (31.7)</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>28 (68.3)</td>
</tr>
<tr>
<td></td>
<td>Other/not stated</td>
<td>0 (0)</td>
</tr>
<tr>
<td>Age</td>
<td>18–30</td>
<td>12 (29.3)</td>
</tr>
<tr>
<td></td>
<td>31–40</td>
<td>11 (26.8)</td>
</tr>
<tr>
<td></td>
<td>41–50</td>
<td>9 (22)</td>
</tr>
<tr>
<td></td>
<td>51–60</td>
<td>6 (14.6)</td>
</tr>
<tr>
<td></td>
<td>61–70</td>
<td>3 (7.3)</td>
</tr>
<tr>
<td>Nationality</td>
<td>Irish</td>
<td>35 (85.4)</td>
</tr>
<tr>
<td></td>
<td>Non-Irish EU citizen</td>
<td>5 (12.2)</td>
</tr>
<tr>
<td></td>
<td>Non-EU citizen</td>
<td>1 (2.4)</td>
</tr>
</tbody>
</table>

Respondents were asked to self-identify whether the CWS is located centrally in their town/village, or peripherally (in an industrial estate, at the edge of town, or in a non-urban area). A total of 63.4% of respondents selected central, while 36.6% selected peripheral. This question was used to test the hypothesis that centrally located CWSs generate more co-benefits than those located peripherally (see below). The findings of the survey are summarised according to their social, urban, and environmental significance.

4.1.1. Social Impacts: Activities and Residential Location

Respondents were asked about the nature of their work at the CWSs. A total of 34.1% of the respondents are self-employed, 7.3% are freelancers, 34.1% are owners or employees of a business operating out of the CWS, 22% are remote workers, with 2.5% identifying as ‘other’. Asked what activities occurred at the CWS (before COVID-19 restrictions were introduced), 34.1% confirmed that arts events accessible to the public are/were available; 65.9% lectures and seminars; 51.2% training programmes; 14.6% yoga and fitness events; 24.4% weekend events for CWS users; and 7.3% weekend events for the public. Several other uses were submitted, including book clubs, drawing classes, networking events, tech meetups and business, and promotional events. Only one respondent (3% of the total) reported no public access to the CWS. Respondents were asked to identify any way in which the availability of a CWS has affected their residential location. A total of 12.2% of the respondents reported that the availability of a CWS allowed them to relocate to their current place of residence. A total of 9.8% of the respondents reported that they would feel
pressure to leave their current place of residence for employment opportunities were it not for the availability of the CWS. A total of 9.8% of the respondents would like to relocate closer to their CWS. A total of 14.6% would consider moving to another location provided a CWS was available. A total of 63.4% reported that the CWS has not affected their place of residence.

4.1.2. Urban Impacts: Supporting Local Economies

Respondents were asked about their economic habits relating to attending the CWS, including their frequency of patronising neighbouring businesses, and their frequency of engaging in various recreational and economic activities after work. The results were compared for central and peripheral CWS locations.

Users of centrally located CWSs engage more frequently in five of the six recreational activities (Figures 1 and 2). There is a particularly large difference between the numbers of users engaging in cultural and educational events in both categories. Differences were also seen in the number of times per week respondents reported buying lunch or coffee in neighbouring premises. For central CWSs, the mean number of lunch purchases per week was 2.88, while peripheral CWS users reported a mean of 1.6 purchases. Coffee purchases per week for central CWS users were 2.57, with 1.93 for peripheral CWS users. The average expenditure on lunch purchases for all co-workers was EUR 7.62 per purchase, with the average spend on coffee purchases being EUR 3.29.

Figure 1. Frequency of engaging in after-work activities: ‘Central’ CWS locations.

Figure 2. Frequency of engaging in after-work activities: ‘Peripheral’ CWS locations.
4.1.3. Environmental Impacts: Commuting and Active Travel

The mean distance to the CWS from respondents’ homes was 13.73 km, with a mean commute time of 25.61 min. Active travel and public transport were more common among CWS users than the public, when compared with census data [42] (Figure 3). In 2016, 61.4% of census respondents indicated they drove a car to work, compared with 48.8% of survey respondents. A total of 17.7% of the survey respondents travelled on foot (9.3% in the census); 17.1% of survey respondents travelled by bicycle (3% in the census); and 9.8% of survey respondents travelled by bus, minibus, or coach (5.9% in the census). Only the train/DART/Luas category showed a decrease between the survey respondents and the census (2.4% and 3.4%, respectively), reflecting the geographic locations of the CWSs, remote from urban public transport arteries. The DART is the Greater Dublin Region’s commuter rail system, while the LUAS is Dublin’s tramway system.

A significant difference was identified between modes of travel adopted by users of self-identified ‘central’ CWSs and ‘peripheral’ CWSs. For central CWSs, 26.9% travelled on foot, 19.2% by bicycle, 11.5% by bus, minibus, or coach, with 34.6% driving to work. For the peripherally located CWSs, these figures are 0% on foot; 13.3% by bicycle; 6.7% by bus, minibus, or coach; and 73.3% driving. Figure 1 illustrates these mobility patterns.

Respondents were asked to what extent they agreed or disagreed with a series of statements relating to active travel and public transport. The results indicate that a proportion of CWS users are interested in choosing active travel and/or public transport, but face obstacles in doing so (Figure 4).

A total of 19.5% of the respondents would like to choose public transport but feel the quality/availability of services prevents them from doing so (combining strongly agree and agree, Figure 2); 19.5% of respondents also expressed an interest in choosing active travel, but do not feel safe in doing so. A total of 36.6% of respondents are interested in active travel but live too far from their CWS to choose this option. Respondents were invited to
offer opinions on public transport and active travel, with a range of contributions from hostile to supportive (Table 2).

![Survey responses relating to public transport and active travel.](image)

**Figure 4. Preferences and attitudes to active travel and public transport.**

**Table 2.** Survey responses relating to public transport and active travel.

<table>
<thead>
<tr>
<th>Question/Topic</th>
<th>Sample Responses (Quotes)</th>
</tr>
</thead>
</table>
| If you have any comments on public transport availability at your home and/or CWS, please give details. | - Buses are driven too violently to read/work whilst in transit; car is a mobile office.  
- My preferred method of transport is my own car that I pay for.  
- Cars dominate [my area]- car parks, wide roads, narrow pavements.  
- There is a bus route from the CWS to my home, but it is infrequent and disappointing, as it does not always operate. It’s uncomfortable as because every day I bring my heavy laptop, lunch box and umbrella with me.  
- Public transport does not bring you to your destination. It is unreliable. The routes just go to the city centre. |
| If you have any comments on active travel to/from your CWS, please give details. | - No. 1 reason for not cycling is bike will be stolen. No. 2 reason is car offers privacy for calls and meetings not available in CWS.  
- Cycling is only dangerous because not enough people do it.  
- I like to travel by bike and keep my carbon footprint to a minimum.  
- Cycling should be encouraged way more!  
- I’m scared of bus lanes and crazy drivers who use them even when they are not allowed to. I have seen lots of accidents with cyclists when cars are turning left.  
- I cycle with my son to his primary school and then cycle from there to my CWS.  
- Some cyclists are more dangerous than cars, especially those who put their head down without looking where they are going.  
- Bicycle parking is uncovered and not secure. |

### 4.2. Semi-Structured Interviews

The semi-structured interviews were carried out with founders, managers, and coordinators of CWSs. The 16 interviews included participants from urban and rural as well as private and public CWSs. Table 3 gives a breakdown of the demographics and general information about the participants and their CWSs. Table 4 summarises the key themes of the questioning and the main findings, with sample quotations relevant to the study.
Table 3. Summary of interview participants (N = 16).

<table>
<thead>
<tr>
<th>Variable</th>
<th>Detail</th>
<th>No. (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>Female</td>
<td>3 (18.75)</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>13 (81.25)</td>
</tr>
<tr>
<td>Position</td>
<td>Founder</td>
<td>9 (56.25)</td>
</tr>
<tr>
<td></td>
<td>Manager *</td>
<td>4 (25)</td>
</tr>
<tr>
<td></td>
<td>Coordinator **</td>
<td>3 (18.75)</td>
</tr>
<tr>
<td>Category of CWS</td>
<td>Private</td>
<td>9 (56.25)</td>
</tr>
<tr>
<td></td>
<td>Public—standalone CWS</td>
<td>2 (12.5)</td>
</tr>
<tr>
<td></td>
<td>Public—enterprise centre</td>
<td>5 (31.25)</td>
</tr>
<tr>
<td>Location of CWS</td>
<td>Village (&lt;1.5k pop)</td>
<td>3 (18.75)</td>
</tr>
<tr>
<td></td>
<td>Small town (1.5–5k pop)</td>
<td>7 (43.75)</td>
</tr>
<tr>
<td></td>
<td>Medium town (5–10k pop)</td>
<td>1 (6.25)</td>
</tr>
<tr>
<td></td>
<td>Large town (10–50k pop)</td>
<td>3 (18.75)</td>
</tr>
<tr>
<td></td>
<td>City (50k+)</td>
<td>2 (12.5)</td>
</tr>
</tbody>
</table>

* The manager category does not include the founder. ** Coordinator includes administrative/promotional roles such as Business Development Manager. *** Settlement size categories based on Des McCafferty’s study Fifty Years of Urbanisation in Ireland [43].

Table 4. Summary of interview data.

<table>
<thead>
<tr>
<th>Main Question</th>
<th>Key Themes and No. (%) Responses</th>
<th>Examples (Quotes)</th>
</tr>
</thead>
</table>
| What was the main original purpose/motivation for establishing the CWS?      | Community/public initiative: 7 (43.75) Private enterprise: 9 (56.25)                                | ● I was running a business from my kitchen table, I was feeling isolated, and I thought I have an empty building... I invested my funds into the town's first coworking hub.  
● We are a small community group whose overall vision is to create viable, well-paid jobs in the area.  
● Coworking wasn’t something we intended to do but funding became available to renovate an unused area of the premises. |
| How was the CWS building/premises chosen?                                    | Building was in the ownership of operator: 5 (31.25) Building was available to buy: 2 (12.5) Building was available to rent: 6 (37.5) Building was purpose-built: 3 (18.75) | ● The building had been pretty much abandoned for 10 years prior. To brand it we gave it a rather exceptional paint job; something the town was not used to.  
● We are an enterprise centre, so were built with own-door units in mind, with a small area set aside for hot-desking. We watch our pricing and keep our units small so that as businesses expand, they move to other premises. We don’t want to displace businesses who would otherwise be on the main street. |
| What range of services/facilities does the CWS provide?                     | Open plan CWS: 16 (100) Private offices: 11 (68.75) Podcast/broadcast studio: 3 (18.75)           | ● We have three start-up units, a business centre with two trading rooms, the boardroom with visual aids, teleconferencing, several serviced offices, and a coworking space with hot desks. |
| Has the CWS received any public funding?                                     | In receipt of public funding at foundation/at foundation and thereafter: 7 (43.75) In receipt of public funding since foundation: 7 (43.75) No public funding: 2 (12.5) | ● If you’re state-sponsored, then a CWS will work for a period of time, it’ll only work as long as the sponsorship comes in—so unless you have a solid business model for it to work without sponsorship, it would eventually shut up shop. |
| Does the CWS facilitate active travel for co-workers?                        | Facilities (bicycle parking and/or shower facilities) available on-site: 4 (25) Facilities on-site in planning/development: 2 (12.5) Facilities locally: 5 (31.25) No active travel facilities: 5 (31.25) | ● We have secure bicycle parking, and showers are part of our next phase.  
● We are looking to put in bicycle racks. What we would really like is a public bikes scheme as we are close to the train station. I don’t have showers because of the insurance risk. |
| Does the CWS have strategies for reducing operational energy use?           | Low-energy strategy in operation: 6 (37.5) Low-energy strategy in development: 5 (31.25) No low-energy strategy: 5 (31.25) | ● It wasn’t something we thought of initially but certainly it’s on the agenda now.  
We’d be an ideal candidate for solar energy as the hours of business are the hours of sunlight. |
| Is the CWS available for community uses/events?                              | Yes, free, or nominal fee, for community events: 11 (68.75) Yes, mostly revenue-raising: 4 (25) No: 1 (6.25) | ● We’re a good resource for community groups who want to discuss issues about the village privately without tongues wagging.  
● We had a gig with a young musician from the States; we passed around a hat for him and each user came with a couple of new people who we hadn’t met before. |
4.2.1. Interview Results: Motivation and Outcomes

The participants were asked what factors motivated the creation of each CWS, and what outcomes in relation to these motivations had been realised since the CWS became operational.

Motivation

The sample includes nine private CWSs, operated as for-profit businesses. Seven CWSs are publicly funded spaces arising from community/institutional or Local Authority initiatives. The private operations ranged in intention. Some entrepreneurs were keen to bring the CWS phenomenon they had witnessed internationally to their hometown or city, along with an urban lifestyle not commonly found in Ireland. Others had buildings that were available, and selected coworking as an appropriate venture for these buildings, having examined various commercial options. Some smaller private CWSs began as a means to share office costs for start-up businesses, or to create a conducive environment for the owners themselves to work. Public CWSs originate in community groups, Local Authority initiatives, or regional development agencies. A common motivation is the desire to retain young populations in rural areas and to diversify employment opportunities in an area. Often, publicly operated CWSs are co-located with enterprise centres, offering a wider range of facilities than are generally found in stand-alone CWSs, including own-door office suites, mentoring, and training.

Outcomes

The goals of CWSs in improving employment opportunities and diversity in their geographic areas were considered by participants to have been achieved. Examples were given of CWS users working as freelancers or remote workers who were able to remain in their location due to the presence of the CWS. Workers changing jobs are taking advantage of the opportunity of working remotely for the first time. Participants reported CWS users relocating to the area from larger cities, particularly Dublin, and from abroad. Interviewees noted that relocating workers can save money through reduced costs of living including accommodation costs, often while retaining their salary at the same rate. In tourist areas, tourists are now using CWSs during their holidays and can extend their stays, sometimes by several weeks, due to the availability of CWSs. One operator described how families can take a three-week holiday, with both parents on leave in week one, one in week two, and the other in week three, with each parent spending one week in the CWS.

4.2.2. Location and Origin of Premises

The participants were asked what factors determined the location of the CWS. Where a CWS is located can impact its range of co-benefits, as centrally located CWSs stimulate more economic and cultural activity than peripheral CWSs (see Section 4.1.2., above). Interviewees detailed four scenarios in which the premises were either (i) purchased, (ii) rented, (iii) purpose-built, or (iv) already in the ownership of the operator.

Two premises had been purchased for use by the CWS. Both premises were vacant office buildings dating from the 1990s to the 2000s. Both are town centre properties, and both owners were enthusiastic about providing an urban lifestyle to their users. The buildings’ HVAC systems were upgraded, and the offices fitted out in a contemporary style, with exposed ceilings and services characteristic of fit-outs by major technology companies. This style was found to be both fashionable and inexpensive by CWS operators.

Rented spaces can be problematic for housing CWSs. Operators reported being frustrated by the control of building services and fabric remaining with the landlord. Flexibility in terms of energy retrofit and building access can be lacking. Where the premises were rented, interviewees reported that their location and built form may not be ideal for the CWS.

Three of the CWSs are housed in purpose-built accommodation. Each of these consists of a CWS as part of an enterprise centre, with other business incubation facilities on site.
None of the purpose-built CWSs are in a town centre, with car parking and room for expansion cited as advantages of their peripheral location.

Where the premises are owned by the operator, choice of location was not a factor in the creation of the CWS. The creation of a CWS often followed a business model investigation of possible uses for empty or underused buildings. Owners of premises appreciated being in control over how the space is accessed, used, decorated, and operated.

When asked what their ideal premises would consist of, participants fell into two groups. The first (mostly private sector) group sought charismatic buildings (old mills/industrial units) in a central location close to cafes, restaurants, and services. The second (mostly public sector, enterprise-focused) group prioritised flexibility and space for expansion, along with car parking. This group was reluctant to locate in town centre sites as they envisaged constraints in expansion due to lack of space.

4.2.3. Social, Urban, and Environmental Impacts

Participants were asked to outline the impacts the CWS has had on its social, urban, and environmental context. This series of questions aimed to identify the co-benefits accruing from the CWSs.

Social

Both public and private CWSs make their premises available to community groups and cultural initiatives, with only one of the spaces reporting no community uses. Often, the spaces are rented at nominal fees to cover lighting and heating costs, or free of charge at the operator’s discretion. Four CWSs reported community uses as an important revenue-generating function. Some spaces are made available to school students who cannot study at home due to a lack of Wi-Fi or other issues. The various community uses CWSs have been put to are listed in Table 5.

<table>
<thead>
<tr>
<th>Networking</th>
<th>Cultural</th>
<th>Community</th>
<th>Sport</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>Founders Friday</td>
<td>Art exhibitions</td>
<td>Christmas fair</td>
<td>Sports clubs’ AGM</td>
<td>Charity coffee mornings</td>
</tr>
<tr>
<td>Lunch &amp; learn</td>
<td>Guest lectures</td>
<td>Political Q&amp;A</td>
<td>Slimming World</td>
<td>CoderDojo</td>
</tr>
<tr>
<td>Tech meetup</td>
<td>Music gigs</td>
<td>Community education</td>
<td>Sports clubs’ meetings</td>
<td>Student study sessions</td>
</tr>
<tr>
<td>Tax advice clinic</td>
<td>Arts &amp; literature festivals</td>
<td>Counselling services</td>
<td>Yoga classes</td>
<td>Chamber of Commerce</td>
</tr>
</tbody>
</table>

Operators reported high levels of social interaction between users, often engendered by management strategies, leading to collaborations and new business ventures. These interactions are encouraged by some CWSs with simple interventions such as having a single water cooler or photocopier for all users, generating random encounters among users. While most CWSs are not sufficiently profitable to have a full-time manager on the premises, several CWSs nominated a user to act as a social/community liaison, often in exchange for discounted or waived fees for the use of the CWS.

CWSs were also used as locations for professional networking events, both for in-house networking and within the broader community. These events included guest lectures, seminars, and talks. Connections between the CWS and local suppliers were developed through these events, with local caterers and other providers being employed for social events in several CWSs.

Urban

Several CWSs reported an increase in economic activity among neighbouring commercial units. Some vacant units became operational following the opening of the CWS. Some CWSs are in historic or heritage buildings, including legally protected structures.
CWS operators using old premises encountered management and operational challenges due to the maintenance demands of ageing buildings. However, they also report that these buildings are highly popular with users due to their architectural character.

Many coworking spaces have installed or plan to install AV facilities, Zoom rooms, broadcasting suites, and smart communications technologies that allow the facilities to be used for a variety of uses including conferences and TV studios. Some operators hoped these facilities would allow the CWS to be used for decentralised conferences.

Environmental

Most interview participants have a low-operational-energy policy either in operation or in development. In terms of building fabric, owners of spaces are keen to reduce energy use for heat and light for both economic and environmental purposes. LED lighting with responsive controls is in place in several CWSs, with one CWS employing a strategy to conserve power overnight by shutting down all electricity at 8 pm, unless a waiver has been secured by a specific workstation. The investment in major capital items such as solar panels is under consideration by several of the CWSs contacted. However, lack of expertise and funding is preventing some plans from being realised, with a fear that partial advice might result in the installation of a system that becomes obsolete or fails to deliver the economic and energy advantages desired.

Active travel is provided for, by way of secure bicycle parking and/or shower facilities, in 25% of the CWSs, and is under development in a further 12.5%. Some rural CWSs are in low-density areas where travel distances are too great for walking. Some rural CWS operators expressed concerns that their location and the local climate made accessing the CWS by active travel effectively impossible.

Some CWSs had developed relationships with local food producers/farmers markets to supply food or engage in promotional activities through the CWS. CWSs were also found to participate in or aspire to participate in community district heating schemes, community recycling and composting initiatives, and community power generation.

Table 6 lists the research findings in the areas of social, urban, and environmental co-benefits of CWSs, with explanatory notes on the evidence revealed by the survey and interviews.

Table 6. Summary of findings: co-benefits of coworking spaces.

<table>
<thead>
<tr>
<th>Category</th>
<th>Co-Benefit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social</td>
<td>CWS as a hub for community events</td>
</tr>
<tr>
<td></td>
<td>CWSs facilitate on-site cultural, community, and educational events for the</td>
</tr>
<tr>
<td></td>
<td>public and users of CWSs. Operators use this as a revenue-raising and/or</td>
</tr>
<tr>
<td></td>
<td>promotional strategy.</td>
</tr>
<tr>
<td></td>
<td>CWS as a generator of collaborations and networking</td>
</tr>
<tr>
<td></td>
<td>The interior layout of the CWS can encourage chance encounters and social</td>
</tr>
<tr>
<td></td>
<td>interaction of users in a convivial setting. Some CWSs assign a user or</td>
</tr>
<tr>
<td></td>
<td>employ a person to be a “catalyst” to coordinate suitable events, such as</td>
</tr>
<tr>
<td></td>
<td>Pecha Kucha evenings.</td>
</tr>
<tr>
<td></td>
<td>CWS as reinforcer of rural/small town populations</td>
</tr>
<tr>
<td></td>
<td>The presence of a CWS allows users to remain in a locality/relocate to a</td>
</tr>
<tr>
<td></td>
<td>locality that would otherwise be uneconomic.</td>
</tr>
<tr>
<td>Urban</td>
<td>CWS as a generator of economic activity</td>
</tr>
<tr>
<td></td>
<td>CWSs located centrally in their towns or villages maximise the economic</td>
</tr>
<tr>
<td></td>
<td>activity of users, who frequent more businesses and cultural activities</td>
</tr>
<tr>
<td></td>
<td>during and after their working day.</td>
</tr>
<tr>
<td></td>
<td>CWS as a use for vacant/historic structures</td>
</tr>
<tr>
<td></td>
<td>CWSs have been found to be suitable uses for vacant buildings and historic</td>
</tr>
<tr>
<td></td>
<td>properties. Many CWS users are attracted to buildings with historical and/or</td>
</tr>
<tr>
<td></td>
<td>architectural character. CWSs operating in historic buildings experience</td>
</tr>
<tr>
<td></td>
<td>high maintenance costs and occasional limitations arising from a building’s</td>
</tr>
<tr>
<td></td>
<td>protected status.</td>
</tr>
<tr>
<td></td>
<td>CWS as a hub for the Local Economy</td>
</tr>
<tr>
<td></td>
<td>Some CWSs employ a range of technologies enabling them to facilitate</td>
</tr>
<tr>
<td></td>
<td>distributed events, including AV/broadcast/comms facilities. Fabrication</td>
</tr>
<tr>
<td></td>
<td>labs and audio studios allow a broad range of enterprises to use the</td>
</tr>
<tr>
<td></td>
<td>CWS. Some CWSs consciously source local food produce and services at on-site</td>
</tr>
</tbody>
</table>
Table 6. Cont.

<table>
<thead>
<tr>
<th>Category</th>
<th>Co-Benefit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environmental</td>
<td>CWS as a low-operational-energy workplace</td>
</tr>
<tr>
<td></td>
<td>LED lighting, temperature-controlled HVAC systems, automatic and movement-sensitive lighting and electricity controls, high-spec insulation, and solar PV arrays have all been employed by CWSs to reduce energy use and expenditure. CWSs can be connected to community renewable energy district heating systems, community recycling and composting initiatives, and community power generation.</td>
</tr>
<tr>
<td></td>
<td>CWS as a reducer of commuting-related GHG emissions</td>
</tr>
<tr>
<td></td>
<td>Centrally located CWSs increase opportunities for active travel, as do facilities for active travel, including bicycle stands and showers.</td>
</tr>
<tr>
<td></td>
<td>CWS as a hub of the Circular Economy</td>
</tr>
<tr>
<td></td>
<td>CWSs can assist the operation of local food hubs/farmers markets/trade networks, through online and in-person promotional and digital organisation.</td>
</tr>
</tbody>
</table>

5. Discussion

This study identifies the co-benefits accruing to communities from the establishment and operation of coworking spaces, focusing on the three areas of social, urban, and environmental impacts. The co-benefits identified by the study are summarised graphically in Figure 5.

![Figure 5. Diagram of the co-benefits identified in the research.](image-url)
5.1. Social Co-Benefits of CWSs

Interactions between CWS users, and between users and the community, expand the networking and collaboration opportunities of users. There is evidence of CWSs playing formal and informal roles in community building, and facilitating events for groups involved in cultural, charitable, community, and sporting activities. The research found multiple interview participants, from both public and private sector CWSs, using the CWSs for a broad range of community purposes, often at minimal or no charge to the groups. These results reflect findings in the literature relating to CWSs acting as community and cultural hubs [12]. Proactive event management and networking strategies have been adopted to facilitate these encounters. From the reported experience of CWS operators, social outcomes are dependent on the level of effort on the part of operators in engendering interactions and synergies, through management strategies or the appointment of a designated CWS user as a facilitator of events. Best practice guidelines and advice on the benefits and means to achieve these outcomes might form part of the supports made available to support government policy.

The literature around residential self-selection [23,24] addresses common considerations in residential location decision-making. The Irish government sees CWSs as a means to sustain rural communities by encouraging people to either remain in or relocate to these communities [18]. This research supports these ideas, finding that CWSs enable users to locate in a wider variety of residential locations, with several survey respondents indicating that the CWS has allowed them to live in their current location. Other respondents would feel pressure to leave their place of residence if the CWS was not in operation. CWSs located centrally and along public transport corridors facilitate people prioritising smart and active travel modes.

5.2. Urban Co-Benefits of CWSs

This research found evidence that CWSs help to revitalise built fabric, create communities of knowledge workers, and support service economies in towns, consistent with the literature in relation to economic vitality [29–32]. The research found increased levels of economic activity among users of centrally located CWSs over peripherally located spaces. This reflects similar findings in Germany [29] and Australia [29], while adding evidence that centrally located CWS users have an increased frequency of patronising neighbouring restaurants, cafes, and other businesses during the working day and after work. They also have a higher frequency of engaging in cultural and educational events after work.

Some CWSs are in protected structures/heritage buildings. Revitalising these often charismatic buildings is an important part of rehabilitating towns, as activating historic properties improves the town’s self-image, retains the embodied carbon in the structure, contributes to street life and economic activity, and broadcasts a positive image of renewal [33,44]. The maintenance of these properties can be a significant drain on the resources of the CWS. This research examined the tenure arrangements of the studied CWSs. The type of tenure affects its management flexibility, with higher control of access and usage in owner-occupied premises. This flexibility can be important in developing the community-focused co-benefits identified in the research. CWSs can play a role in the development of local economies, stimulating economic activity among users in local service providers. A technically resourced CWS can facilitate distributed events, stimulate small-scale economic enterprises, and network local producers, increasing community economic resilience.

5.3. Environmental Co-Benefits of CWSs

The operation of CWSs involves energy use for space heating, cooling, ICT operations, lighting, and kitchen facilities. For this energy expenditure to represent a net reduction in energy over working from home or the employer’s office, reductions in energy use are required in those locations [40]. A majority of the CWSs studied have plans for low-energy management and retrofit of their premises. Lowering the operational energy profile of
CWSs helps offset rebound effects evidenced in the literature relating to net emissions arising from remote working and CWS use [5].

Survey data revealed that CWSs can result in positive environmental outcomes in relation to transport and energy use. GHG emissions savings from shorter commutes for CWS users are possible through active travel and public transport. Almost half of CWS users surveyed travelled to the CWS by car. The survey reveals a preparedness among some co-workers to engage in active travel or use public transport, but reservations about service provision and cycling and walking infrastructure prevent them from doing so. Ideally, CWS users will live within an appropriate distance of the CWS to walk or cycle to work. The provision of a conveniently located CWS can generate conditions conducive to the 15 min city model. These research findings add to the literature relating to emissions savings from remote work and CW [5,36,37]. It is not a given that the existence of a CWS will reduce commuting emissions, as the location of the CWS has an impact. This study finds that more car-dependent, peripherally located CWSs produce considerably more energy-intensive travel patterns than centrally located CWSs.

Participants noted the potential for CWSs to integrate into community power generation, district heating, recycling, and composting schemes to further contribute to communal sustainability, resilience, and the circular economy.

5.4. Government-Level Policy Implications

As outlined in Section 1, Irish government policy is strongly supportive of CWSs as a means of strengthening rural communities. This research found evidence that this policy support is appropriate, as the CWSs studied have contributed a range of co-benefits to their communities. The research found that these co-benefits are more likely to occur if the CWS is located in a central location in the town or village, rather than in a peripheral area. Centrally located CWSs encourage more sustainable transport patterns, increased levels of economic activity in neighbouring premises by CWS users, and have the potential to reuse vacant or historic properties. Planning policy and government supports should encourage CWSs to locate centrally, in order to optimise the potential benefits to a community of the establishment of a CWS. CWS operators who are located in historic or protected structures report financial difficulties in maintaining these premises. Government supports could be directed towards these CWSs, as they contribute to the physical rehabilitation of townscapes.

5.5. Limitations and Further Research

The study participants were selected through voluntary sampling, in which participation is optional. This method can result in unrepresentative samples of respondents, and in this case has resulted in a small sample size. This may limit the generalisability of the results. The interview participant demographics demonstrate a gender imbalance that may result in gender-specific implications of the research being unexplored. Future studies may benefit from alternative sampling measures to minimise bias and ensure generalisable results.

This research identifies a range of co-benefits associated with CWSs in the context of Irish towns. Further research could identify legislative, planning, and public policy strategies that would promote these co-benefits, and ensure that CWSs are optimally located and managed to bring about these benefits. Research into mobility, housing, energy, and CWS funding could identify suitable strategies. Further research into CWS users could examine the impact of relocations associated with CWSs on carbon emissions from work commuting in the Irish context. This research focussed on the external, community impacts of CWSs, and so did not address the precarious employment practices CWSs can facilitate.
6. Conclusions

This paper identifies the co-benefits of coworking spaces, as revealed by users of CWSs via a survey and operators and managers of CWSs through semi-structured interviews. These co-benefits extend the impact of CWSs beyond their primary remit to provide a viable workspace. The co-benefits can be divided into three categories: social, urban, and environmental. Social benefits include the use of the CWS as a location for community events, the capacity of the CWS to allow people to remain in or relocate to a geographical location of their choice, and enhanced opportunities for users to engage in professional learning and networking. Urban benefits include the stimulation of the urban economy in the vicinity of the CWS, the potential for the reuse of vacant/derelict or historic properties, and the reinforcement of the local small business ecosystem. Environmental benefits include the provision of low-energy workplaces, the promotion of low-carbon transport patterns, and the potential involvement of CWSs with local circular economy networks. This research found that many of these co-benefits can be affected by the geographical location of the CWS. Users reported higher levels of economic activity (such as purchases of lunch and coffee in neighbouring premises) where CWSs are located in the centre of their urban area, rather than at the periphery (for example in an industrial estate). Users of centrally located CWSs also engage in recreational activities such as visits to a cinema or cultural and educational events after work more frequently than users of peripheral CWSs. This finding indicates that the location of a CWS can impact the range and quality of the co-benefits that accrue from the CWS.

This research found evidence that public policy promoting CWSs as a means to reinforce rural and town communities is well founded, as CWS users reported increased residential location options through the existence of CWSs. Users of CWSs are also more likely than the general population to commute by active travel, with evidence of increased potential for active travel should facilities improve. With low-energy operational strategies either in place or under development in almost all the CWSs studied, the working model of the CWS can play a part in the low-carbon transition and revitalisation of Irish towns and villages.

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Informed Consent Statement: Informed consent was obtained from all subjects involved in this study.

Data Availability Statement: Under the terms of the research ethics approval noted above, the survey and interview data are subject to storage restrictions. Data can be viewed by arrangement with the corresponding author.

Conflicts of Interest: The authors declare no conflict of interest.

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