Research project Fieldlab Evenementen phase II: clubs & nightlife

Data collection and monitoring of group dynamics between visitors of the Fieldlab Evenementen pilot events

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Contents

1. Introduction

The focus in this report is on event type Clubs & Nightlife which can be described as an indoor active event Specifically, this report discusses the research results of the club night in club Shelter, Amsterdam.

2. The event

Some parts of the definition for event type 'Clubs & Nightlife' are similar to that of type II, indoor active. Meaning an event that is characterised as an event that takes place inside and has an active character. Visitors are enthusiastic, sociable, and exuberant and have no 'assigned' place to sit/stand.

On Saturday May 29th 2021 at 22.00 hours to Sunday morning 06.00 hours, the first type Club Night event, initiated by Fieldlab events, took place in the Club Shelter in Amsterdam. The event was a dance event with several supporting DJ's.

3. Risk Profile

The building block, visitor dynamics, focuses on minimising the risk of infection at events. In order to map the profile of the event, a distinction is made between factors that normally play a role when analysing the risks at events in a non-covid situation. A distinction is made between the activity profile, the spatial profile and the public profile (van den Brand & Abbing, 2003).

3.1. Activity profile

The activity profile presented in Table 1 came about through a brainstorming session with various stakeholders (Kamphorst, Donders, Coolen, Rijn, & Pas, 2020). It concerns the processes at the event where visitors come together and where there is a possible risk of contamination. This involves visitors coming into contact with each other at a certain location, for a certain length of time and at a certain risk. By localising, describing and analysing the risks, processes can be optimised, and the spread of risks minimised.

A distinction is made between the activity profile, the space profile and the public profile (van den Brand & Abbing, 2003).

Table 1. Activity profile

Touchpoints (Ingress)	Club Night
Parking	Nearby car park
Entrance	Ticket, negative test result and after receiving tag
Placing	not applicable
Visitation	Applicable
Touchpoints (Circulation)	
Beverage	Bars
Food	not applicable
Toilets	At location
Entrance process	Through entrance gate manned by steward(s)
Exit process	Via exit gate manned by steward(s)
Routes	Via signage
Touchpoints (Egress)	
Parking	Nearby car park
Exit	Accompanied by stewards and after return of tags

3.2. Spatial Profile

Not one event is like another. It is therefore useful to use general characteristics when classifying events describe a number of general characteristics related to events in addition to the characteristics mentioned by Fieldlab. These general characteristics (Table 2) give direction to the expectations with regard to the dynamics of visitors to events (van Rijn & van Damme, 2011).

Table 2. Spatial profile

Event name	Shelter / Club Night
Spatial Profile	
Event location	Club Shelter
Event type	Club & Night live
Sort event	Public event
Event specification	Dance
Attractiveness	Local
Duration	Night time
Location (indoor/outdoor)	Indoor
Accessibility	Fixed location - existing
Size	Small < 500
Access	Tickets sales

Club Shelter can accommodate 1.000 visitors in a regular situation. For this occasion, based on the ventilation guidelines as proposed by the research as conducted by Fieldlab, 550 tickets have been made available, which represents an occupancy rate of 55%. Prior to the event, clear and strict guidelines have been drawn up for all those directly involved. The main condition for participating in the event is the submission of a negative rapid test result at the entrance to the event site. This test must be taken at one of the affiliated test locations within 24 hours before the end of the event. Apart from this condition, additional conditions have been communicated through a developed app. For example, outside the event site, the RIVM guidelines apply to everyone involved and no specific measures or restrictions apply on the event site.

3.3. Public profile

It is essential to know the characteristics of the audience of a specific event in order to anticipate on their behaviour. Audience is inextricably linked to behaviour. Before zooming in on behaviour and mood, the type of audience is mentioned. In addition to the distinction in audiences, social characteristics of audiences are indicated. Audiences display specific behaviour, but they are difficult to define and cannot easily be classified (Still, 2014).
The following characteristics of behaviour apply, to a greater or lesser extent, to visitors to the events in the different phases of the event:

Expressive	Crowd gathered for a common purpose; Under loose leadership or following a specific motive; Not aggressive, but parts of the crowd become slightly antisocial; May require active involvement of authorities.

To the participant in the event setting, passive behaviour applies during ingress and egress. During the movement phase and the show phase, expressive applies.

4. Safety measures

The events took place in a protected and controlled environment. In order to realise this environment, different safety measures were taken, such as the requirement for a negative COVID-19 test for entrance, direct communication with the visitors and ventilation requirements. This report will focus on the measures regarding visitor dynamics, such as time slots. The use of time slots aims to achieve a gradual and controlled ingress. Table 3 shows the time slots for the event in Club Shelter.

Table 3. Time slots

Timeslots	visitors
22.00h - 22.20h	100
22.20h - 22.40h	100
22.40h - 23.00h	100
23.00h - 23.20h	100
23:20h - 23.40h	100

The QR code in CoronaCheck app has been checked outside the parking facilities. Per time slot 25 people were allowed to enter the parking facilities. In the parking a buffer zone has been created to allow for safe queues which may result due to the visitation process. After the visitation in the parking, visitors will enter the locker area and from there on there is a one-way entrance to the club.

Sanitary facilities were accessible through a one-way route. The one-way policy has been kept by stewards. The regular entrance for Shelter has been used as an entrance to the smoking area (outside), which outside was dedicated for smokers only and secluded from passers-by. See Figure 1 for the floor plan of the nightclub, including camera positions.

For the ingress process, process calculations were made to determine the capacity of the ingress process per entrance lane, in order to ensure a safe and regulated ingress with minimum contact moments). The findings and recommendations regarding the ingress process can be found hereafter.

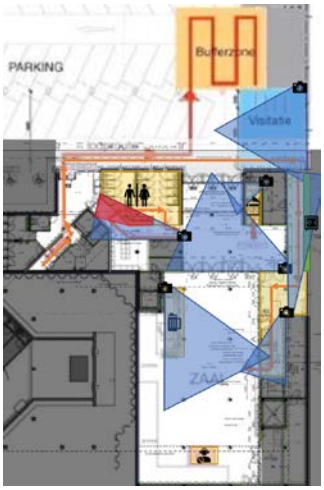


Figure 1. Floor plan including camera positions

5. Results

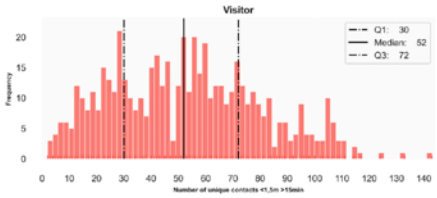
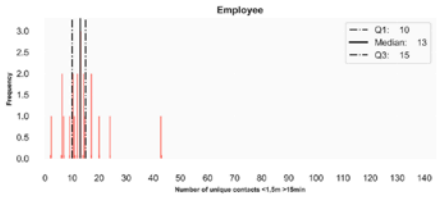
The pilot event for Clubs & Nightlife was organised using the Fieldlab methodology. Data for these studies were collected using the same research instruments as those of phase 1 of the research program. The following section will present the findings for the Clubs & Nightlife pilot in Club Shelter, Amsterdam.

The surface of the club itself (excluding hall, toilets, locker area, etc.) is 331 m^2. As the industry standard for the previous type II pilot events in phase 1 was set at 3 persons per m^2, the capacity would be 993 persons. Based on ticket scan data, the pilot event had 566 visitors, of which 541 have been provided with a contact tracking device. The actual number of visitors was higher than the anticipated number of visitors, resulting in 25 visitors without a contact tracking device. Nevertheless, 96% of the visitors were provided with a contact tracking device. Based

on the floor capacity, the occupancy rate was $\frac{566}{993} \approx 57\%$. This is close to the occupancy rate of bubble 2 (63%) for the type II pilot dance event in the Ziggo Dome.

Table 4 presents the general statistics of the event. On average a visitor had 52.9 unique contacts (IQR= 30-72) lasting more than 15 minutes cumulative within 1.5 meters.

Table 4. Number of participants (with CTD) and resulting critical contacts (<1,5 m, >15 min)

Event	Bubble	N	Average participation time	Average amount of contacts (IQR)	Distribution
Clubnight	Visitors	541	06:40:05	52.9 (30-72)	
	Employees	23	07:42:47	13.7 (10-15)	

Interestingly enough, the average number of critical contacts in the phase 1 dance event is 51, despite the fact that the bubble consisted of 222 persons; which is only 42% of the number of persons in the current pilot event. While the total number of contacts in the phase 1 dance event increased over time, the total number of contacts show a decreasing trend for the club night, as can be seen in Figure 2. This can (partially) be explained by gradual egress.

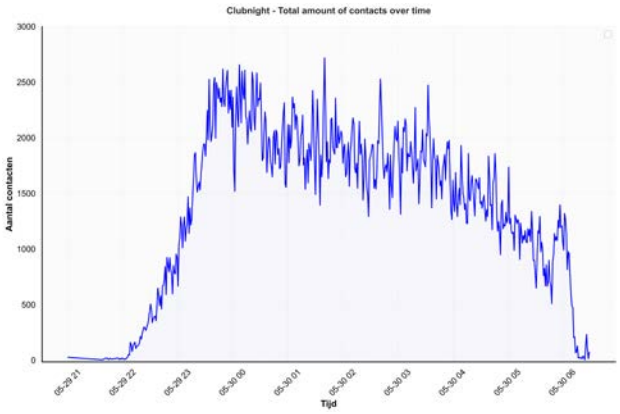


Figure 2. Total number of contacts over time

Interactions	Visitor	Employees
Visitor	52	1
Employees	6	7

Table 5 Interactions between visitors and employees

Table 5 present a breakdown of the interactions and observed critical contacts between them. It is apparent from this table that very few visitors have a long-lasting contact with an employee. Employees on the other hand obtain more contacts between themselves than with visitors.

Looking at the entrance process in Figure 3, it can be stated that the walk-through area (club entrance) does not cause any significant level of contacts. However, a reasonable number of contacts arise in the locker area. The locker area is quite narrow, so this result is not unexpected.

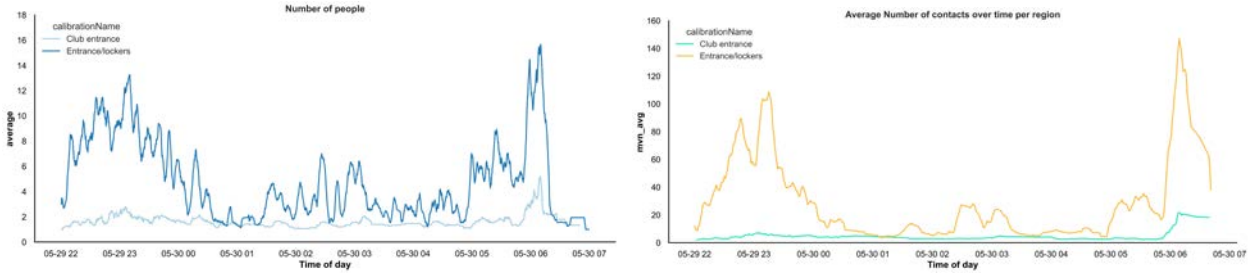


Figure 3. Video analysis entrance/exit areas

All three dynamic areas – the hall, smoking area and toilets – have a reasonably steady number of contacts over time, as can be seen in Figure 4. There are no significant peaks or drops; the usage of the areas is evenly distributed. Nevertheless, the visitors just after 05.00 AM, the smoking area was closed, explaining the drop in number of people.

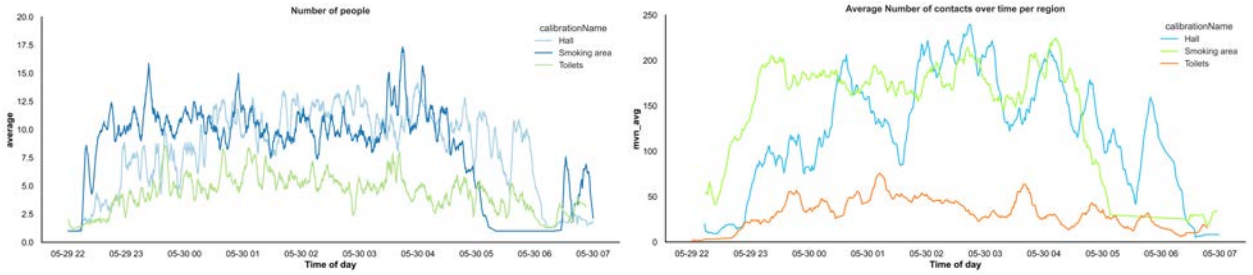


Figure 4. Video analysis circulation areas

5.1. Visitation

Before entering the nightclub, visitors have undergone a visitation. As this process has a significant impact on the entrance throughput, an additional video analysis has been executed regarding the visitation process times. The visitation process time depends heavily on whether visitors have a bag (small/large) or no bag. A sample of 180 visitations has been taken. Of this sample, 59% of the visitors carried no bag, 26% carried a small bag and 15% carried a large bag. The results are presented in Figure 6.

Based on these results and the distribution of no bag, small bag or large bag, the average process time for visitation is 25 seconds. This process time is significantly longer than the process time observed for the execution of the CoronaCheck including ID-card check as observed during other pilot events (6-13 seconds) and hence it should be used for the entrance capacity calculations.

Furthermore, female visitors will only be visited by a female steward. It has been observed that this has caused some delay at certain points in time. However, male stewards were able to support the female stewards by checking the bags of female visitors, reducing the time the female steward required to visitate a female visitor.

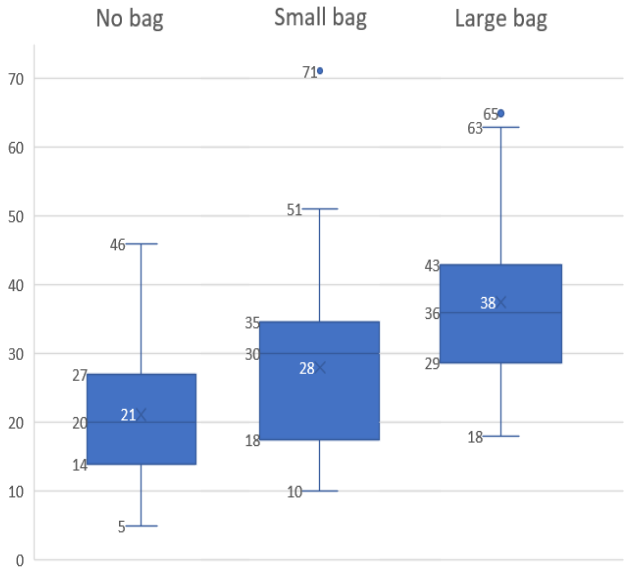


Figure 5. Visitation process times (in seconds)

6. Discussion

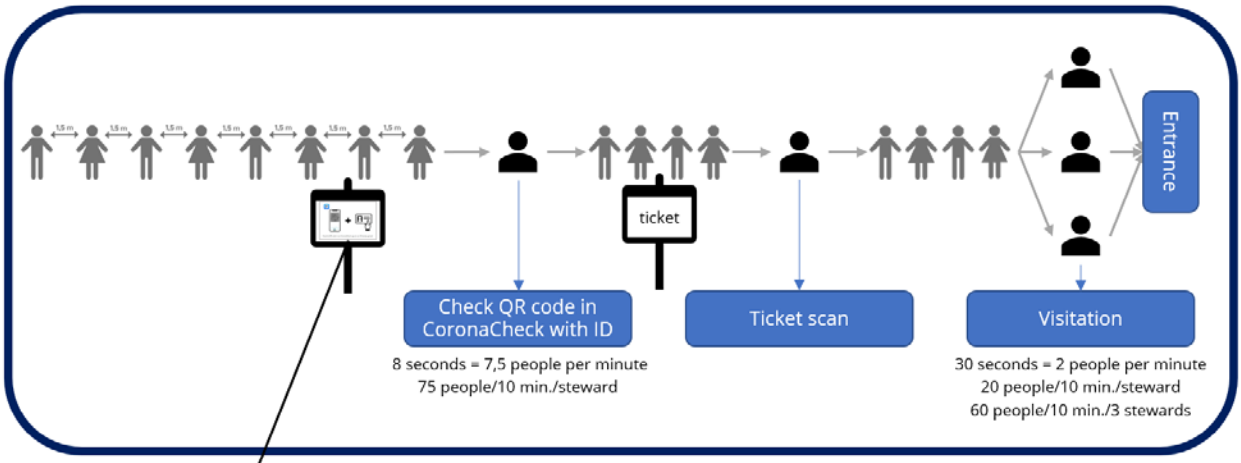
A visitor of a club night pilot event has on average 53 contacts within 1,5 meter for a cumulative duration for 15 minutes or more. Compared to the dance event pilot with a similar occupancy rate, the number of critical contacts has not increased despite the fact that the bubble size has increased by 2,4 times and the average participation time has also been increased with an hour. Therefore, it can be concluded that bubble size has little to no effect on the number of critical contacts. The dynamic areas are in constant evenly use, which can be interpret as that visitors are distributed amongst available areas.

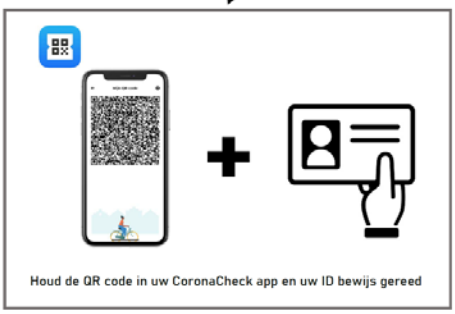
The results in the current report are applicable to clubs & nightlife in a setting with risk-reducing measures. Further implications of the results will be discussed in the main report.

7. Recommendations

To ensure a smooth ingress, some recommendations are made with regard to the entrance processes. The entrance process will consist of three processes: ticket scan, CoronaCheck app with ID check and visitation. Of these processes, the visitation is the most time-consuming with an average process time of 25 seconds.

A process time of 25 seconds translates into a maximum throughput of 36 people per stewards per 15 minutes. To allow for some error, it is advised to calculate with 30 visitors per 15 minutes per steward, which is equal to 120 visitors per hour per steward. The required entrance process is as shown below. Capacity calculations for different scenarios, with corresponding bottlenecks (in **bold**, either step 1 *CoronaCheck + ID check* or step 3 *visitation*) are presented as well.





The visualized process has a capacity of 60 people per 10 minutes, which is equal to 360 people per hour. See table below for scale-up.

Number of stewards			Capacity	
CoronaCheck + ID check	Ticket scan	Visitation	Per 10 minutes	Per hour
1	1	**1**	20	120
1	1	**3**	60	360
1	2	4	75	450
2	2	**7**	140	840
2	2	8	150	900

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