



ASSESSING THE RELATIONSHIP BETWEEN COMMUNITY INCLUSION AND SPACE THROUGH VALLETTA 2018 CULTURAL INFRASTRUCTURE PROJECTS

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ABSTRACT

The report outlines the salient work carried out throughout 2016. Building up on the first year of the research, which focused mostly on the gathering of data from primary sources, this year saw further empirical work being carried out as well as consolidation of data and data analysis. The latter covered both the physical and social/behavioural aspects of the research. Two sets of results emanating from deductive physical analyses were compared in order to assess current (2015/6) state of urban quality of the four Valletta neighbourhoods under study. Patterns emanating from inductive behavioural analysis and broader social phenomena emanating from NSO Census Data (specific for the four neighbourhoods) were in turn compared to the physical results in order to test for preliminary correlation. A current physical land-use analysis, carried out in 2015, was this year supplemented with an additional exercise of development planning applications submitted (and permits issued, as relevant), development notifications submitted (and approved) and enforcements issued in the four neighbourhoods, with a focus on change of uses. The latter was analysed to a greater depth in order to understand the nature of change that the physical fabric is undergoing. The above analyses all contributed to a richer and deeper understanding of the four neighbourhoods, which towards the end of 2016 was supplemented by a pilot for a Public Participatory Geographic Information Systems (PPGIS) in order to understand local community needs, concerns and aspirations using an accessible online platform.

Keywords: Socio-spatial impact, social inclusion, cultural infrastructure, urban regeneration

INTRODUCTION

The study seeks to understand the spatial (physical) and social (behavioural) impact of cultural infrastructure, primarily architectural and urban design interventions, in terms of broader culture-led urban regeneration objectives for the various community and stakeholder groups over the research period. The interface between socio-cultural considerations and physical (on the ground) manifestation of interventions is the social dimension of urban design, and the research focuses on this delicate interface in order to understand the correlation between the two and frame this discussion within broader quality of life considerations, focusing on four case study areas – MUŻA, Old Covered Market, Strait Street and Biċċerija (chosen since it is the venue of the forthcoming Valletta Design Cluster) and their immediate neighbourhoods.

Much has been written about this crucial dimension of urban design, as the understanding of the latter has progressed from visual and functional considerations (and a concern with 'product') to deeper issues dealing with perception and social implications (with a resulting deeper concern with 'process'). Authors such as William H. Whyte (1980) and Jane Jacobs (1962) provide an important backbone to the understanding of this subject matter and this research has proceeded with the work of the Project for Public Spaces (PPS, 2008) that have addressed the central question "what makes a good place?". This has provided the theoretical background that has in turn translated into an analytical framework used in the initial part of this study, through the on-the-ground analysis of both physical qualities and behavioural patterns. Using this data, it has been possible to establish an initial potential correlation between physical phenomena and socio-cultural constructs, providing an initial understanding of the issues surrounding the four neighbourhoods in question, and enabling an informed approach to the development of the PPGIS, piloted towards the end of 2016.

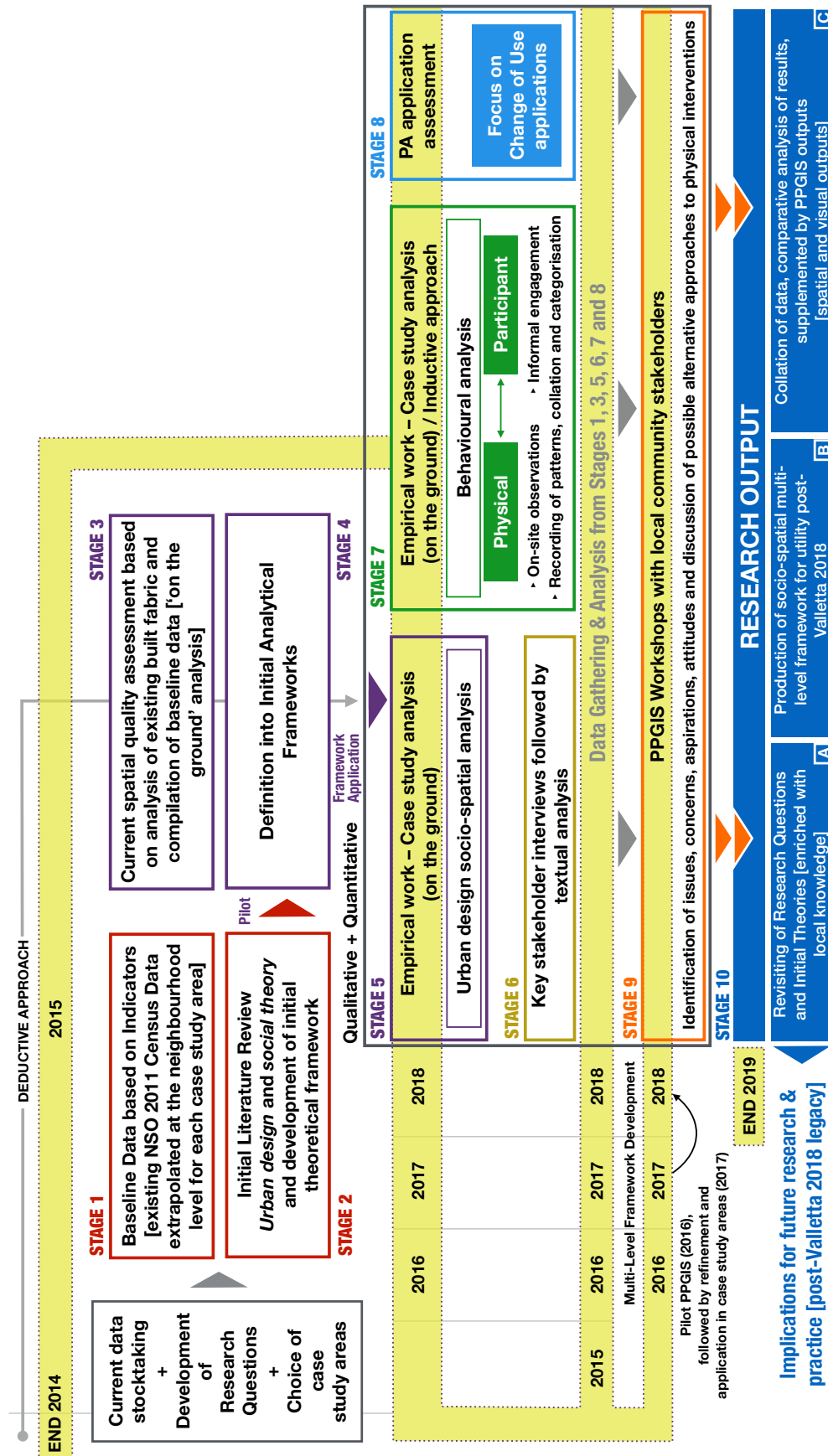
METHODOLOGY

This is a mixed methods approach comprising both deductive and inductive avenues and qualitative and quantitative methods that support each other, together with data triangulation to bring both sets of data together. Throughout 2016, the research methodology was further refined and reorganised so as to now comprise ten stages, with the consolidation of the initial research stages, the inclusion of a new stage (Stage 8) in order to address the objectives in a more holistic manner, and the refinement of intermediate and final research outputs, as per the updated Research Methodology diagram (Figure 1).

Current baseline NSO Census data was collated for the four case study areas and their neighbourhoods as defined originally (Stage 1) in tandem with an initial literature review (Stage 2) that in turn led to the development of a theoretical framework that was piloted on the ground to become a refined analytical framework (Stage 4); in tandem, a physical analysis on the basis of the built fabric was also carried out in detail from first principles (Stage 3). The framework was then applied to the four case study areas in order to assess their physical urban design quality (Stage 5). This was followed up by key stakeholder interviews in order to enable a deeper understanding of the broader, non-physical phenomena that are influencing the urban spaces and that are leading the projects into very specific directions (Stage 6). An in-depth textual analysis and collation of patterns/categorisation of themes deriving from these interviews will be subsequently carried out in 2017. A behavioural analysis (structured observations), carried out in four predominant urban spaces (each located in the four neighbourhoods under study – the streets surrounding the Biččerija, the urban space located right in front of the Old Covered Market, Pjazza Jean De Valette for the MUŽA area and the entire stretch of Strait Street), in an inductive manner, enabled the establishment of specific behavioural patterns that were categorised into principal themes (Stage 7). In tandem with the above stages, a new stage (Stage 8) was added midway through 2016, in order to better understand the physical phenomena that were happening on the ground. This stage comprised an assessment of planning applications, development notifications and enforcements as occurring between 1993 and summer 2016 (taken as the cut-off date to date), with an added focus for the period 2012 (when the ECoC was announced) – 2016. In particular, the focus of this study centred on analysis of impact due to change of uses (current and potential future impact) on the surrounding neighbourhoods, in both positive and negative terms.

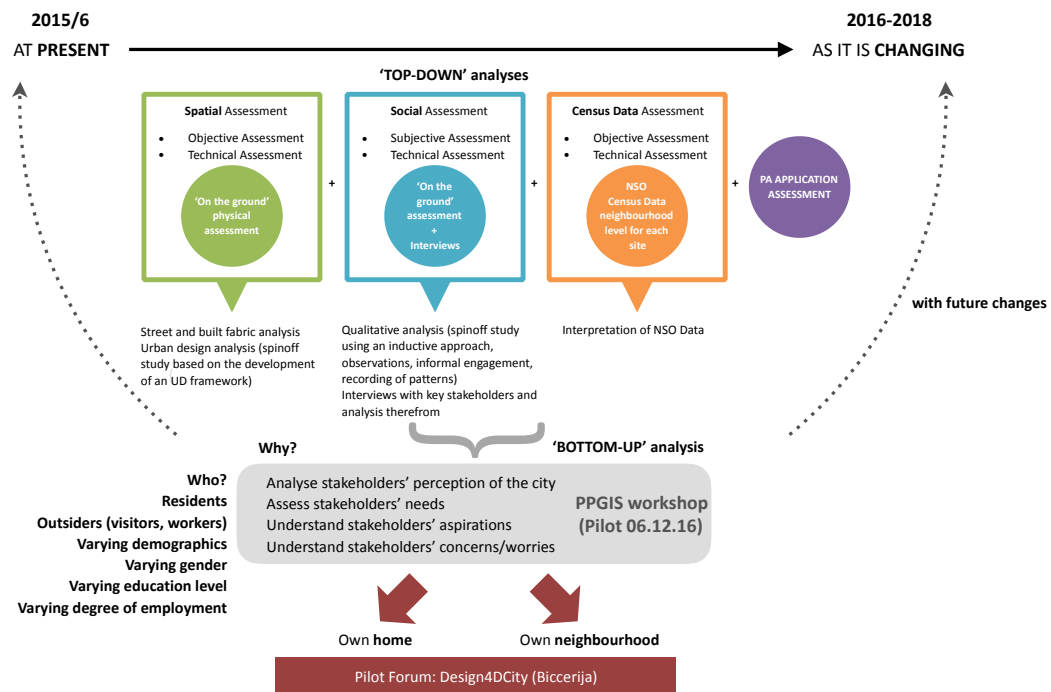
The data gathering stages led to a data analysis period wherein we started to collate and consolidate the primary data emanating from Research Stages 1, 3, 5, 6, 7, and 8, and results of which are discussed in the next section of this report. The knowledge from the above stages fed into the pilot PPGIS workshop (Stage 9) for the Biččerija neighbourhood in order to provide the study with a bottom-up perspective that is matched up with the results emanating from the other research stages. This will be followed up by its application to the four case study areas throughout the coming year.

Figure 1: Research Methodology diagram, as refined throughout 2016
 (Source: Author)



The research team having conducted top-down research on many of the issues, PPGIS gives residents an opportunity to submit their own views on the issues in a bottom-up manner, both in collaboration with other members of the community, or otherwise (Figure 2).

Figure 2: PPGIS utility
(Source: Author)



The PPGIS pilot workshop was held on the 6 December 2016 at San Ġorġ Preca Primary School in Valletta. The session was organised by the University of Malta in collaboration with the Valletta 2018 Foundation and centred on the key themes emanating from the Design4DCity workshop held some months earlier. The purpose of the PPGIS session was to test the 'communitymaps' interface, which was adapted for use in the Maltese Islands by Mapping for Change – a social enterprise within University College London. Local researchers collaborated with Mapping for Change in order to streamline the system to the specific project themes of Design4DCity, these being:

1. The surrounding area;
2. Services and public spaces;
3. The future of the site;
4. Cleanliness and quality of life;
5. Accessibility; and
6. Heritage

A group of ten people gathered to participate in the PPGIS session, composed of Valletta residents who answered to a call for participation and representatives of the organising bodies. Following a short introduction to the pilot project, the PPGIS interface was demonstrated on a screen, during which those present were encouraged to access the 'communitymaps' interface through their personal devices and use the software in real-time. Many of the participants immediately started digitally mapping matters of interest to them, and were interested to see that their inputs were immediately made public through the interface. Matters of digital ethics and best practice in digital mapping were highlighted during this mapping session.

Having familiarised the group with the digital mapping, by discussing the digitization of aspects relating to the first four themes of Design4DCity, a physical mapping session was implemented. This session was held for participants to appreciate that digital mapping can be more useful when preceded with a face-to-face communal discussion whilst mapping elements of the discussion on a physical map. The method used for this part of the pilot was the MAP-it Toolkit, during which two teams discussed the pedestrian and vehicular accessibility of the site.

As a follow-up to the pilot session, the results of the physical mapping session were digitized onto the 'communitymaps' interface using a purposely set-up Design4DCity account. Participants were encouraged to continue using the interface in their own time to validate the digitized results as well as to continue populating the map with a rich array of data related to the Design4DCity themes of interest to them.

FINDINGS

Spatial analyses

- The spatial quality analysis based on the analytical framework using criteria for accessibility and permeability, perception and comfort and vitality provides the highest overall score for MUŽA (3.61) followed by the Old Covered Market (3.30), Strait Street (3.18, although note that repeating this exercise specifically for the intersection with Old Theatre Street provides the highest score of 3.71) and Biččerija (2.75).
- The physical analysis of the neighbourhoods based on the observations on the ground related to the state of repair of the built fabric provides the highest impression score for Biččerija neighbourhood (3.37) followed by the Old Covered Market (3.36), MUŽA neighbourhood (3.26) and Strait Street (3.14). Comparing this to the Census' state of repair (as reported by home owners and translated into measurable scores) yields different results – MUŽA neighbourhood (4.60), followed by the Old Covered Market (4.20), Strait Street (4.10) and Biččerija neighbourhood (3.90).

Table 1: On the ground spatial analyses and extrapolated NSO Census state of repair data
(Sources: Author, Azzopardi C. and NSO)

Spatial analyses (2015/2016)		Biččerija		Strait Street		Strait Street (intersection with Old Theatre Street)		MUŽA		Old Covered Market	
Spatial quality analysis based on analytical framework	Accessibility and Permeability		2.79		3.30		3.34		4.00		3.29
	Perception and Comfort		3.00		3.10		4.02		3.55		3.34
	Vitality		2.47		3.14		3.76		3.27		3.26
	Public space - Overall Score	score	2.75	score	3.18	score	3.71	score	3.61	score	3.30
Physical analysis based on state of repair of current built fabric	Total	120	100	66	100			47	100	113	100
	4.1 to 5	12	10.00	12	18.18			12	17.91	12	10.62
	3.1 to 4	50	41.67	18	27.27			21	31.34	42	37.17
	2.1 to 3	49	40.83	21	31.82			24	35.82	55	48.67
	1.1 to 2	7	5.83	15	22.73			8	11.94	4	3.54
	Less than or equal to 1	2	1.67	0	0.00			2	2.98	0	0.00
Building state of repair - Impression Score	score	3.37	score	3.14			score	3.26	score	3.36	
State of repair as reported in NSO 2011 Census (data extrapolated for each case study area)	Total	229	100	61	100			69	100	121	100.0
	Good state = 5	85	37.12	32	52.50			45	65.20	60	49.60
	Needs minor repairs = 4	85	37.12	13	21.30			20	29.00	34	28.10
	Needs moderate repairs = 3	25	10.92	7	11.50			4	5.80	17	14.00
	Needs serious repairs = 2	28	12.23	8	13.10			0	0.00	10	8.30
	Dilapidated = 1	6	2.62	1	1.60			0	0.00	0	0.00
Residents state of repair - Impression Score	score	3.90	score	4.10			score	4.60	score	4.20	

Land use analysis

The land use analysis, based on observations taken on the ground for the four neighbourhoods, was carried out specifically for the ground floor and repeated for the entire floorspace (Table 2).

- Ground floor use: This analysis is useful since it enables us to understand the degree of active frontage that may be present within the neighbourhoods, as a central contributor to vitality and natural surveillance (eyes on the street), which in turn results in a greater degree of safety. Table 2 shows that the highest presence of active frontages occurs in the MUŽA neighbourhood (89%), followed by Strait Street (67%), the Old Covered Market (57%) and the Biččeriĵa neighbourhood (56%). Conversely, the highest proportion of dead frontage is in Strait Street (32%), followed by the Biččeriĵa neighbourhood (27%), the Old Covered Market (25%) and the MUŽA neighbourhood (7%). These results again illustrate that the MUŽA neighbourhood has the highest degree of vitality, an important contributor to spatial quality, again correlating perfectly with the results in Table 1.
- Predominant land use: This analysis illustrates the state of affairs with land use correct as of 2016. The predominant land use in the Biččeriĵa neighbourhood, Strait Street and the Old Covered Market is residential (54%, 63% and 43% respectively) whereas in the MUŽA neighbourhood it is offices (34%), almost at par with administrative (government-related) uses (33%).

Table 2: Land use analysis, correct as of 2016

(Source: Author)

Land Use analysis (2015/2016)		Bicceriĵa	Strait Street	MUŽA	Old Covered Market	
GF use	A	Leisure	1%	20%	2%	6%
	C	Retail outlets	5%	20%	47%	24%
	T	Residential	40%	9%	1%	9%
	I	Office	9%	9%	5%	2%
	V	Administrative	1%	9%	34%	16%
	E	Hotel	–	–	1%	–
		Religious	11%	–	3%	10%
	to	Educational	4%	–	–	8%
		Cultural	2%	–	–	–
	D	Services	–	1%	1%	–
	E	Warehousing	19%	25%	–	20%
	A	Garage use	6%	2%	–	2%
	D	Vacant	2%	5%	6%	3%
	Predominant use (all floors)		Residential	54%	63%	10%
		Administrative	14%	8.5%	33%	16%
		Religious	10.5%	–	3%	10%
		Office	10%	18%	34%	18%
		Educational	4.5%	–	–	8%
		Cultural	4%	–	–	–
		Hotel	–	0.5%	1%	–
		Retail outlets	–	5.5%	7%	1.5%
		Services	–	–	1%	–
		Leisure	–	–	1%	0.5%
		Warehousing	–	–	1%	–
		Vacant	3%	4.5%	9%	3%

Analysis of development planning applications with regard to change of use and impact on the four neighbourhoods

Observed categories

Five categories have been singled out in terms of potential impact due to change of uses, scored on a scale of 0 to 3:

- Generation of People (and people movement): The positive impact due to the expected amount of people because of the change of use (where a score of 3 represents the presence of more people than a score of 1)
- Visual Implications: The positive impact on the built fabric, primarily the investment to the building façade (restoration and upgrade) and the generation of active frontages due to a more active change of use (where a score of 3 represents a greater potential for a better visual interface than a score of 1)
- Aural Implications: The negative impact of noise generation due to the change of use (e.g. presence of people, service vehicles, etc.; where a score of 3 represents more noise generation than a score of 1)
- Olfactory Implications: The negative impact of smell generation (e.g. the presence of on-site cooking for class 4D catering establishments; where a score of 3 represents a greater degree of smell generation than a score of 1)
- Litter generation: The negative impact of the amount of litter that would be produced from a change of use (where a score of 3 represents more litter generation than a score of 1)

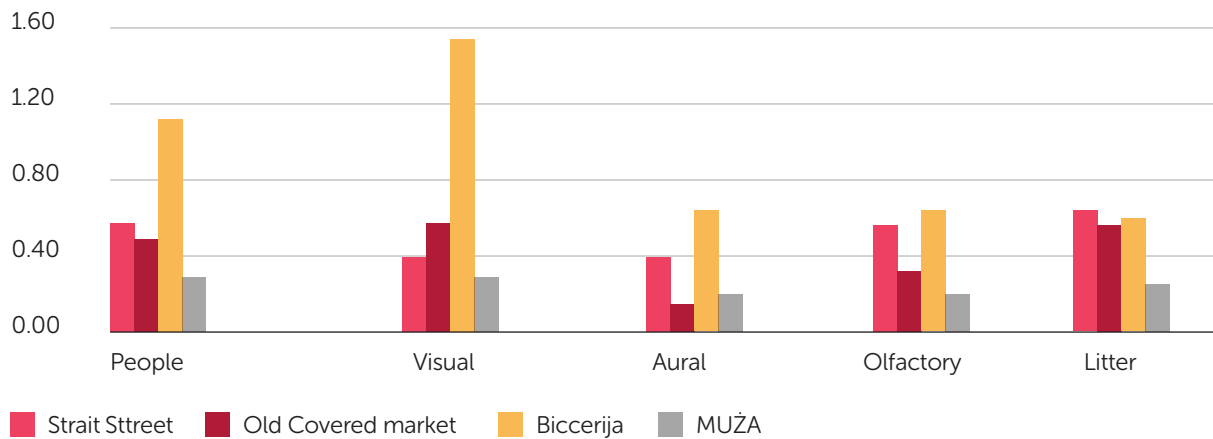
Table 3: Impact definition due to change of use (Note: Residential uses also include properties that could later be rented out) (Source: Author)

VACANT to	People	Visual	Aural	Olfactory	Litter
Hotel class 3A	2	3	2	1	2
Hotel class 3B	3	3	3	3	3
Catering class 4D	3	3	3	3	3
Catering other classes	2	2	2	2	2
Retail	2	2	2	1	1
Service	2	2	1	0	1
Office	2	1	1	0	1
Residential*	1	1	1	0	1
Warehouse	1	0	2	1	1
Cultural	2	3	2	0	1
Education	2	2	2	0	1
Administration	2	1	1	0	1
Entertainment	3	1	2	0	1
Industry	2	0	3	2	3

In order to facilitate the scoring mechanism, the grades of scores were given from a vacant property to the respective use in question. In this way, the table becomes effectively a matrix wherein the relative score may be calculated with any change of use combination (Table 3).

Figure 3: The impact of change of use within each neighbourhood area – 1993-2016
(Source: Author)

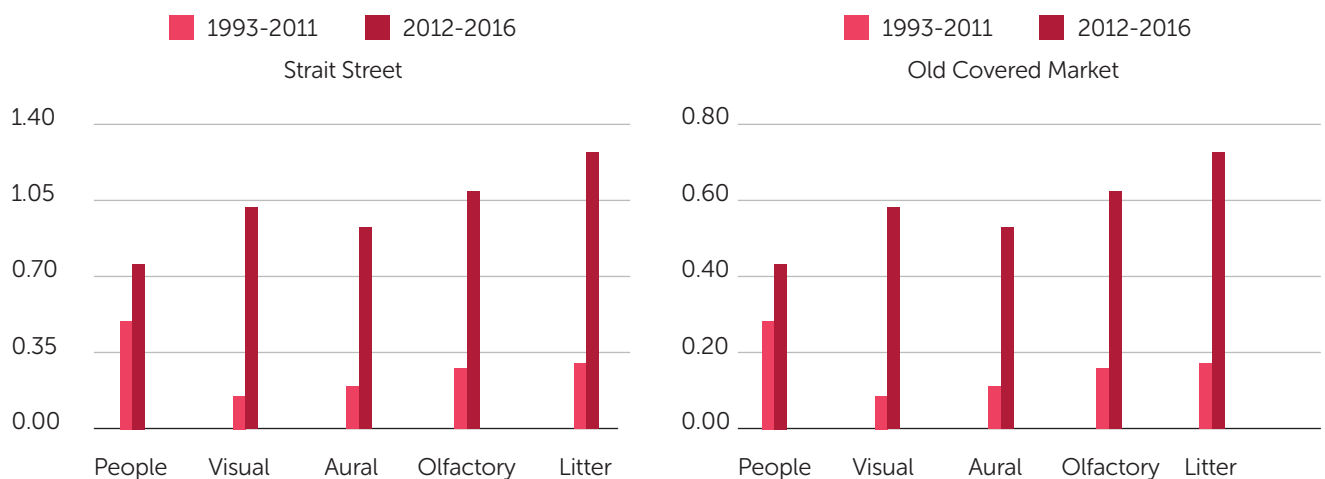
The study reveals that the highest impact due to change of uses for all categories throughout the period

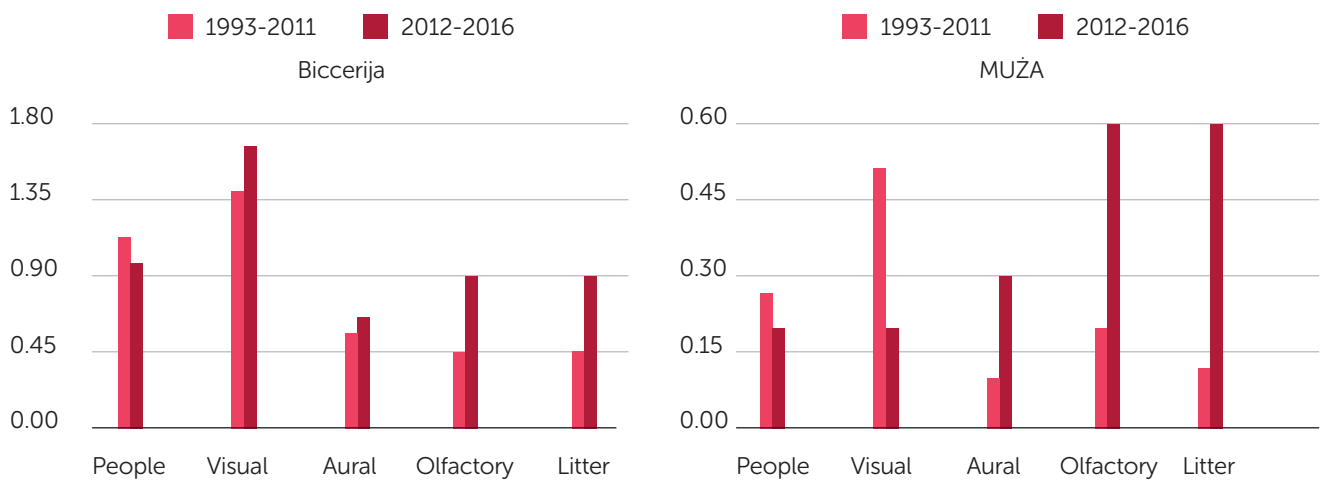


1993-2016 is within the Biccierija neighbourhood, and least within the MUZA neighbourhood. Repeating the exercise specifically for the period 2012 (the year Valletta was announced as 2018 European Capital of Culture) – 2016 one notes that the degree of impact for all categories is much higher (Figures 3, 4).

Figure 4: Comparing impact of change of use within each neighbourhood area pre- and post-2012
(Source: Author)

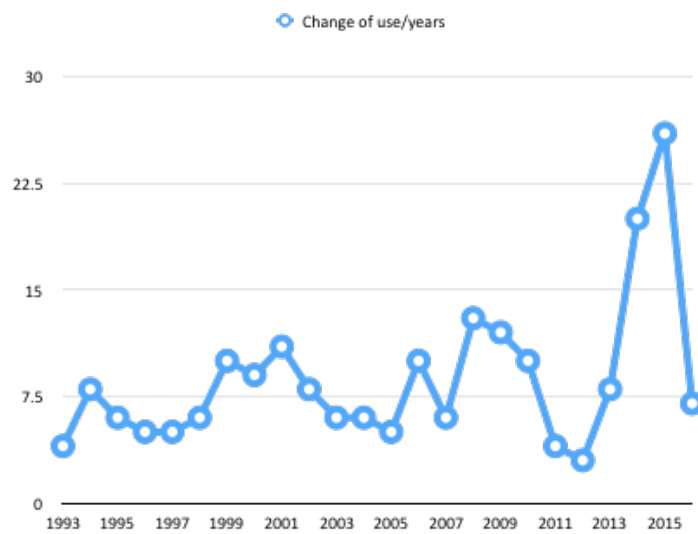
Post-2012, the amount of development planning applications for change of use has increased significantly





(Figure 5).

Figure 5: Amount of applications for change of use – 1993-summer 2016
(Source: Author)



Within this period (2012 - 2016), the highest impact is again in the Bičćerija neighbourhood (Figure 6), followed by Strait Street. In order to understand why such impact is most significant in these two neighbourhoods, we sought to analyse the nature of the change of use in more depth – in terms of scale of impact of commercial uses, for instance, hotels and catering establishments with on-site cooking would have a higher impact than retail or service-oriented commercial uses, or catering uses without on-site cooking, and even more than offices – resulting in more generation of people, greater aural and olfactory implications and a greater implication for litter generation. It becomes clear that in the Bičćerija neighbourhood and along Strait Street, the majority of the premises are changing their uses into commercial uses (from residential or vacant premises), or into a higher level of commercial use (for instance, from office to retail, or from retail to catering).

All the premises located in the Bičćerija neighbourhood that have applied for a change of use, post-2012, are changing into a higher level of commercial use (Figure 7). In contrast, within the neighbourhoods surrounding MUŽA and the Old Covered Market, change of use here is not of a commercial nature (for instance from warehousing to residential) or it remains within the same level of commercial use (for instance different typologies of retail).

Figure 6: The impact of change of use within each neighbourhood area – 2012-2016

(Source: Author)

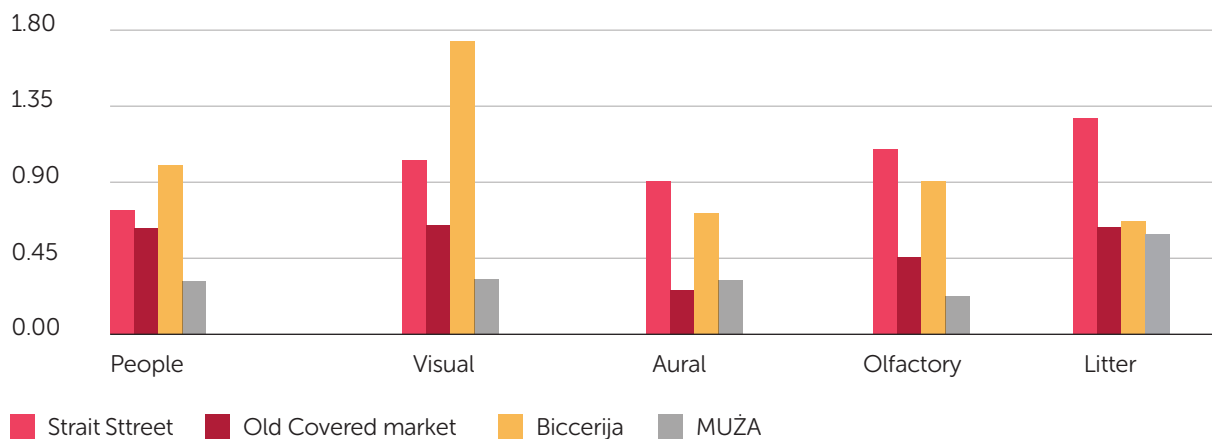
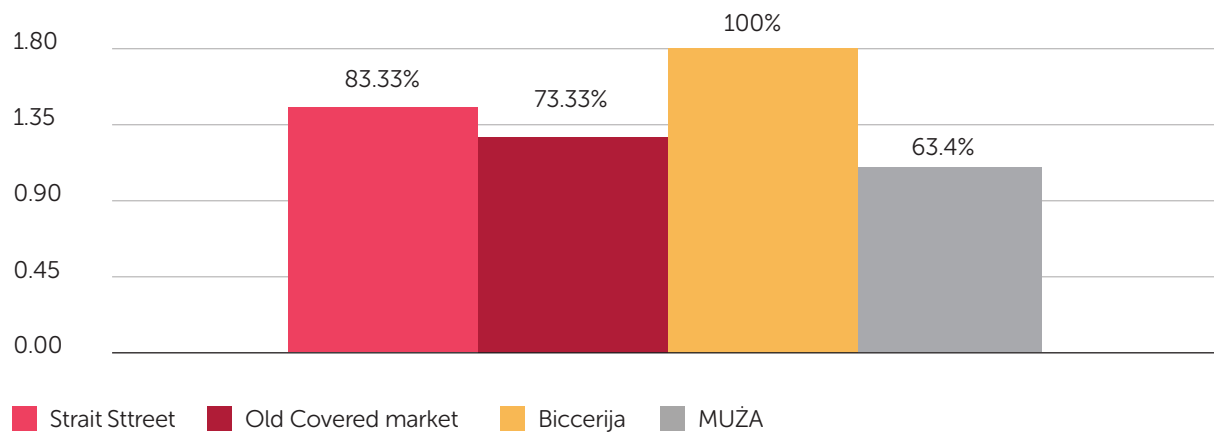


Figure 7: Comparing degree of commercial change of use within each neighbourhood area
(Source: Author)



Social and Behavioural Analyses for the four neighbourhoods

Taking the Census data (NSO 2012) and analysing the most relevant demographic data at the neighbourhood level (Table 4) reveals that all four sites are characterised by an ageing population (with the highest percentage recorded in the MUŽA neighbourhood, followed by the Old Covered Market neighbourhood). The data for literacy, employment and education follows similar trends:

- Literacy: Although the majority of residents are literate, the highest percentage of illiterate persons is within the Bičćerija neighbourhood.
- Employment: Although a good percentage of residents are employed, the highest percentage of unemployed people is registered within the Bičćerija neighbourhood (and conversely the percentage of employed residents, being lowest in the Bičćerija neighbourhood), as well as for those who cannot work due to illness/disability.
- Education: The majority of residents in all four sites have had mandatory schooling, however the highest percentage of residents with no schooling is registered in the Bičćerija neighbourhood.

Table 4: Census data analysis at the neighbourhood scale

(Adapted: NSO)

Census Data analysis (NSO)		Biccerija		Strait Street		MUŽA		Old Covered Market	
		count	%	count	%	count	%	count	%
Persons living by age group	Total	457	100	114	100	159	100	246	100
	0-14	61	13.35	7	6.14	21	13.21	23	9.35
	15-24	53	11.60	7	6.14	18	11.32	20	8.13
	25-44	105	22.98	24	21.05	30	18.87	62	25.20
	45-64	138	30.20	38	33.33	40	25.16	67	27.24
65+	100	21.88	38	33.33	50	31.45	74	30.08	
Literacy	Total	416	100	110	100	142	100	229	100
	Literate	349	83.90	97	88.20	126	88.70	219	95.60
	Illiterate	67	16.10	13	11.80	16	11.30	10	4.40
Employment	Total	396	100	107	100	138	100	223	100
	Employed	121	30.60	45	42.10	47	34.10	87	39.00
	Unemployed	39	9.80	5	4.70	9	6.50	7	3.10
	Student or person having an unpaid working experience	11	2.80	4	3.70	4	2.90	9	4.00
	Retired	87	22.00	26	24.30	32	23.20	56	25.10
	Cannot work due to illness or disability	18	4.50	2	1.90	3	2.20	3	1.30
	Taking care of the house and/or family	106	26.80	23	21.50	36	26.10	56	25.10
	Other inactive persons	14	3.50	2	1.90	7	5.10	5	2.20
Education	Total	396	100	107	100	138	100	223	100.0
	No schooling	14	3.54	0	0.00	4	2.90	3	1.35
	Primary	118	29.80	19	17.80	31	22.46	62	27.80
	Lower Secondary	212	53.54	52	48.60	77	55.80	87	39.01
	Upper Secondary	22	5.56	14	13.10	16	11.59	33	14.80
	Post-Secondary Non-Tertiary	9	2.27	4	3.70	1	0.72	2	0.90
	Tertiary	21	5.30	18	16.80	9	6.50	36	16.10
Education (regrouped categories)	Total	396	100	107	100	138	100	223	100.0
	No schooling	14	3.54	0	0.00	4	2.90	3	1.35
	Mandatory	361	91.20	89	83.20	125	90.58	184	82.51
	Tertiary	21	5.30	18	16.82	9	6.52	36	16.14

As discussed in Section 6, behavioural traits were observed within the predominant spaces located in each of the four neighbourhoods and consolidated into nine patterns (influences), detailed as follows:

1. Aural: The aural category encapsulates all sensorial experiences relating to sound
2. Vehicular and Pedestrian Interface: This category reflects the presence of moving vehicles, the interface between pedestrians and vehicles, as well as parked vehicles which restrict access or block views
3. User Categories: This category sheds light on the types of users within the space, age, gender, ethnicity and profession amongst others
4. Thermal Comfort: Thermal comfort refers to the level of comfort of the user due to environmental influences and weather conditions
5. Relating to Cleanliness: This category relates to all the factors which reflect the condition of the space, state of cleanliness or absence thereof
6. Actual Use of Space: This category reflects types of user experiences and activity relating to the use of the space and vice versa, how the space and the land uses set within the space induce human activity
7. Perceptual Influences and Use of Space: This category includes abstract and intangible notions relating to the use of space which also include the observer's perception of the atmosphere at the time
8. Human Interaction: Human interaction encapsulates the interface between two humans or more
9. Olfactory: The olfactory category encapsulates all sensorial experiences relating to smell.

Table 5: Behavioural influences – categorisation of observed patterns
(Source: Attard, D.)

INFLUENCES	INFLUENCE NO.
Aural	1
Vehicular and Pedestrian Interface	2
User Categories	3
Thermal Comfort	4
Relating to Cleanliness	5
Actual Use of Space	6
Perceptual Influences and use of space	7
Human Interaction	8
Olfactory	9

INFLUENCE NO.	THEMES	THEMES REF.
1.4.5.9	Sensorial/Environmental Influences	A
3.8	People/ Users and their Interaction	B
2	Vehicular & Pedestrian Interface	C
6.7	Actual/Perceived Use of Space	D

Even more relevant to the study was the subsequent categorisation of these patterns into four broader themes, as follows:

- A. Sensorial/Environmental Influences that encompasses the Aural, Thermal Comfort, Olfactory and Relating to Cleanliness Influences.
- B. People/Users and their Interaction that encompasses User Categories and Human Interaction.
- C. Vehicular and Pedestrian Interface that was not categorised further due to its distinct and significant role within the urban spaces under study.
- D. Actual/Perceived Use of Space that encompasses Actual Use of Space and Perceptual Influences and Use of Space.

The groups of patterns and further categories are illustrated in Table 5.

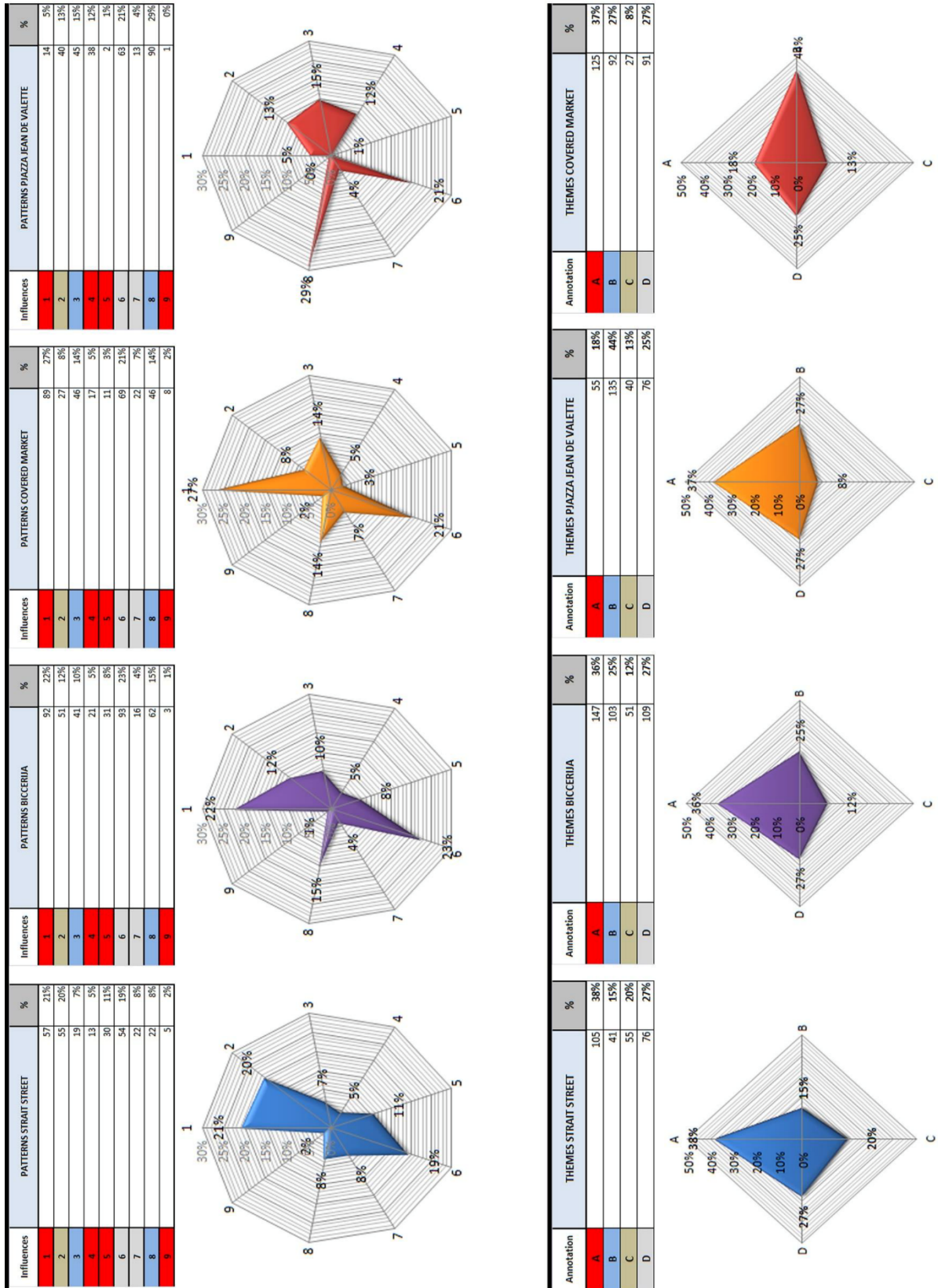
Behavioural mapping reveals the following predominant groups of patterns (Figure 8):

- Strait Street – Aural and Vehicular/Pedestrian Interface influences, very much influenced by the configuration of the urban space and the tight height-to-width ratio that characterises the street and that amplifies sounds emanating from the buildings that align its edges, as well as the conflicts that arise when vehicles access the narrow portions of this street to the detriment of the pedestrian experience.
- Old Covered Market – Aural and actual use of space influences, very much influenced by the nature of the land uses surrounding and defining the urban space (the presence of retail outlets is second highest after MUZA at 24%, Table 2).

- Biččerija – Actual use of space and aural influences, primarily due to the interaction between resident and visitor, the observed and the observer, the fine balance that occurs between privacy, natural surveillance and visual permeability. It is a neighbourhood wherein the indoor spills out into the semi-private (such as the balcony spaces) and semi-public spaces (wherein space is often claimed in an informal manner).
- Pjazza Jean De Valette (MUŽA) – Human interaction and actual use of space influences, particularly due to the lines of flow that characterise the urban space from multiple directions and that increase the chances of encounter; this is also very much in line with the high degree of vitality and presence of active frontages, as discussed in Sections 7.1 and 7.2, which characterise this neighbourhood.

Further collating into the four broad categories illustrates that Strait Street, the Biččerija and the Old Covered Market neighbourhoods are dominated by sensorial/environmental influences whereas Pjazza

Figure 8: The role of the influences within each neighbourhood area – tables and radar charts
 (Source: Attard, D.)



CONCLUSIONS & WAY FORWARD

Jean De Valette (MUŽA neighbourhood) is dominated by People/Users and their Interaction.

Intermediate conclusions are provided at the end of each of the above sub-sections within Section 7. Nevertheless, it is pertinent to note that the following:

- **Spatial quality and built fabric analysis:** There is a direct correlation of results from the spatial quality analysis and the Census data, wherein the MUŽA neighbourhood scores highest and Biččerija tends to have the lowest quality rating out of the four sites.
- **Land use analysis:** The study on land uses becomes even more relevant in the discussion of new uses that are characterising the neighbourhoods, particularly with the injection of non-residential uses (generally of a commercial nature), as discussed in Section 7.3, which could be positive in terms of the generation of active frontages and increased vitality but that could also result in a negative impact.
- **Analysis of development planning applications:** This was a very fruitful exercise that shall be updated throughout the remaining research period as it enables us to visualise the ripple effect that Valletta 2018 (and its flagship projects) is having, by instigating and incentivising change that in turn could have both positive and negative impacts on the entire neighbourhood.
- **Social analysis:** Although the spatial and social data is from different sources and thus non-comparable, it is nevertheless interesting to note that the highest percentages for illiterate, unemployed and non-schooled residents corresponds to the lowest spatial quality score and reported state of repair for the building stock within the Biččerija neighbourhood. This may lead one to speculate that there may be a direct correlation between the state of the urban space/housing conditions and the level of achievement of the residents and it would be interesting to include a degree of social analysis in the next round of physical analysis in the forthcoming years of the research, so as to test for direct correlation, if it exists.
- **Behavioural analysis:** It is not hard to imagine that the changing nature of the four sites, as discussed in Section 7.3, will play a major role in either reinforcing or changing the nature of the behavioural influences, such as the possibility of increased vehicular/pedestrian conflicts (unless accompanied by a strategic movement strategy for Valletta), a greater influence of aural, olfactory and cleanliness-related influences (particularly with the advent of catering establishments within the sites) and increased opportunities for human interaction due to the greater pedestrian traffic/footfall resulting from change of uses.

The next steps for this research in 2017 are to be consolidated into the following tasks:

- Further development and update of change of use as occurring through an analysis of development planning applications for the latter part of 2016 and throughout 2017.
- In-depth textual analysis of Interviews carried out with key stakeholders in order to be able to relate the phenomena discussed above with strategic decisions being taken on the ground by the project leaders.
- Development of PPGIS workshops for the four sites under study (in collaboration with Design4DCity) and further development of Mapping for Change platform, including the digital transfer of the most significant data emanating from this research in order to stimulate debate within the local community.
- Further analysis of socio-spatial correlation that could be followed up by statistical analysis – converge the various results outlined above together in order to be able to understand the socio-spatial implications on the four neighbourhoods in question.
- Initial development of multi-level framework that combines the different mixed methods used within the research methodology in view of the final research output.

Enriched by the results from the PPGIS, we shall be able to have an informed outlook as to the implications of change due to the cultural infrastructure and the social/attitudinal and behavioural changes (vis-à-vis the different stakeholders) that are resulting therefrom, by having the direct involvement of the local community and an understanding of their needs, concerns and aspirations. This will provide the prelude for the repetition of the physical and behavioural analyses that will occur once again in 2018, which will subsequently enable us to monitor the degree of change that has occurred over the research period, leading to a potential multi-level framework and strategy to be defined within a post-2018 legacy, as illustrated in the Research Output in Figure 1.

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CONCLUDING REMARKS

The European Capital of Culture title has triggered a series of infrastructural and social changes within Valletta, and it can be argued that never in recent memory has the city undergone such rapid change within so short a period of time. The impact of this change on local communities is undoubtedly of primary concern for the legacy of Valletta 2018. The studies presented within this report share this view and seek to understand these often intangible impacts through a series of qualitative interventions with different communities that reside in, or interact with, Valletta.

Foremost amongst the physical changes taking place in the city are the four infrastructural projects being spearheaded by the Valletta 2018 Foundation, which are the focus of one of the studies presented in this report. The analysis of these sites presents a snapshot of the changing face of the city, with all four corners of Valletta undergoing different types of development. Each of these projects presents unique opportunities and challenges, both for people who interact with the site on an intermittent basis and, most pertinently, for the local communities who live and work within the vicinity. This research allows for a greater understanding of how these opportunities can be exploited and challenges met.

The engagement of local communities in the Valletta 2018 project extends beyond the confines of these four infrastructural projects, to include their participation in Valletta 2018-related activities and their perspectives on the general changes taking place within the city. To this end, the accessibility of the Valletta 2018 Cultural Programme and the Foundation's approach to community inclusion is of primary interest. This research finds that there is a prevalently ambivalent attitude towards the rapid social change being undergone in Valletta, with concern for the survival of Valletta's local communities existing alongside excitement for the city's social, cultural and economic regeneration.