

UNIVERSITÀ DEGLI STUDI DI CATANIA

DIPARTIMENTO DI SCIENZE UMANISTICHE

Dottorato in Scienze per il Patrimonio e la Produzione Culturale – XXXV CICLO

Stefano Russo

Digital Museums and Cultural Participation of Generation Z

TESI DI DOTTORATO

RELATORE

Prof.ssa Romilda Rizzo

CORRELATORE

Prof.ssa Navarrete Trilce

ANNO ACCADEMICO 2022-2023

INTRODUCTION	5
PART I.....	9
1. CULTURAL PARTICIPATION.....	9
1.1 THE <i>WHATS</i> AND <i>WHYS</i> OF CULTURAL PARTICIPATION	9
1.2 INTERDISCIPLINARY PERSPECTIVE	10
1.3 ON BROWS AND TASTES OF CULTURE.....	13
1.4 THEORIES ON CULTURAL CONSUMPTION AND PARTICIPATION	17
1.5 CULTURAL PARTICIPANTS AND SOCIO-DEMOGRAPHIC STRATIFICATION.....	19
1.5.1 <i>EDUCATIONAL LEVEL AND EARLY-EDUCATION IN ARTS</i>	20
1.5.2 <i>INCOME AND LABOUR STATUS</i>	22
1.5.3 <i>GENDER</i>	23
1.5.4 <i>ETHNICITY</i>	25
1.5.5 <i>SPATIAL PROXIMITY</i>	27
1.5.6 <i>AGE</i>	28
1.5.7 <i>TECHNOLOGIES</i>	31
1.6 BARRIERS AND REASON FOR NOT PARTICIPATING: FROM OCCASIONAL TO FREQUENT PARTICIPANTS	33
1.7 PROFILING CULTURAL PARTICIPANTS: FROM <i>WHAT</i> TO <i>HOW</i>	38
1.8 PARTICIPATION IN HERITAGE	40
2. CAPITALS AND CULTURAL PARTICIPATION.....	43
2.1 HUMAN CAPITAL	45
2.1.1 <i>A MULTI-DISCIPLINARY TOPIC</i>	46
2.1.2 <i>HOW TO MEASURE HUMAN CAPITAL?</i>	48
2.2 CULTURAL CAPITAL.....	52
2.2.1 <i>THE ECONOMICS PERSPECTIVE</i>	52
2.2.2 <i>THE SOCIOLOGICAL PERSPECTIVE: BOURDIEU'S CULTURAL CAPITAL</i>	53
2.2.3 <i>HOW TO MEASURE CULTURAL CAPITAL?</i>	55
2.3 DIGITAL CAPITAL.....	56
2.3.1 <i>THE DEFINITION OF DIGITAL CAPITAL</i>	57
2.3.2 <i>THE BRIDGING FUNCTION AND THE INTERACTION OF DIGITAL CAPITAL WITH CULTURAL CAPITAL</i>	59
2.3.3 <i>HOW TO MEASURE DIGITAL CAPITAL?</i>	62
2.4 WHY CAPITAL AND CULTURAL PARTICIPATION?	62
3. GENERATION Z AND THE DIGITAL MUSEUM	63
3.1 WHY A GENERATION STUDY?.....	63
3.2 THE PROFILE OF GENERATION Z.....	65
3.3 MUSEUMS AND DIGITAL MUSEUMS	68
PART II.....	72
4. THE STATE OF ART	72
4.1 CULTURAL STATISTICS - CULTURAL PARTICIPATION.....	73
4.2 CULTURAL STATISTICS – USE OF ICT FOR CULTURAL PURPOSES.....	79

4.3	SPECIAL EUROBAROMETER 466	82
4.4	CONCLUSIONS.....	87
5.	THE SURVEY.....	88
5.1	THE ANALYTICAL DESCRIPTION	88
5.2	THE STRUCTURE OF THE SURVEY	91
5.3	THE THEORETICAL FRAMEWORK AND THE NOVELTY ELEMENTS	92
5.4	RESEARCH QUESTIONS AND ANALYSIS EXPECTATIONS	94
6.	THE DATA ANALYSIS AND THE MAIN RESULTS	95
6.1	THE VARIOUS INDICATORS.....	97
6.2	METHODOLOGICAL LIMITATIONS	101
6.3	THE GENERAL COMPOSITION OF THE DATASET.....	102
6.4	ABOUT THE RESPONDENTS AND THEIR LEVELS OF CAPITAL.....	102
6.4.1	<i>HUMAN CAPITAL DISTRIBUTION</i>	103
6.4.2	<i>DIGITAL CAPITAL DISTRIBUTION</i>	103
6.4.3	<i>CULTURAL CAPITAL DISTRIBUTION</i>	104
6.4.4	<i>RELATIONSHIP BETWEEN THE DIFFERENT TYPES OF CAPITAL</i>	105
6.5	THE CULTURAL PARTICIPATION OF THE GENERATION Z.....	106
6.5.1	<i>GENERAL CULTURAL PARTICIPATION</i>	106
6.5.2	<i>CULTURAL PARTICIPATION IN MUSEUMS</i>	111
6.5.3	<i>CULTURAL PARTICIPATION IN DIGITAL MUSEUMS</i>	119
6.5.4	<i>OPEN QUESTIONS ANALYSIS</i>	135
6.5.4.1	<i>Informative in-box on the method to cluster open questions</i>	135
6.6	ART MEMES: DIGITAL OPPORTUNITY FOR MUSEUMS.....	148
6.7	MAIN RESULTS	154
6.8	FUTURE INSIGHTS OF RESEARCH.....	157
	CONCLUSIONS.....	159
	APPENDIX A – THE SURVEY	163
	APPENDIX B – COMPLEMENTARY DATA ANALYSIS	171
	BIBLIOGRAPHY.....	188

Introduction

This thesis explores several facets of cultural participation, defined as participation in any activity that, for individuals, represents a way of increasing their own cultural and informational capacity and capital, which helps define their identity, and/or allows for personal expression (UNESCO, 2012, p.10). More specifically, it concerns the activities of audiences and participants in consuming cultural products and taking part in cultural activities and experiences (UNESCO, 2009, p.20).

There are broad strands of literature studying museums, as there are just as many studying technologies, and the younger generation. However, none provides insights into these three aspects considered altogether. This present work looks at the Generation Z perspective on cultural participation mediated by technology.

There are three main reasons to investigate in this direction:

- (i) It is acknowledged that culture produces both intrinsic and instrumental advantages – supporting wide social and economic objectives – which are spread along a continuum between the private and public spheres (McCarthy et al, 2004). The benefits of digitally mediated cultural participation have not yet been evaluated;
- (ii) Typically, the cultural heritage sector is (heavily) sponsored by the public. Despite this, there is a paucity of evaluations demonstrating the validity of this form of expenditure regarding the application of technologies to museums. Digitally mediated culture (e.g., music, movies, etc.) has existed for some time, but cultural heritage has not yet discovered its killer application. We do not have a clear comprehension of the participants' perceptions in the current state of art;
- (iii) Museums possess an educational function. Digital technology has been expected to support this function, perhaps in a different logic, potentially defused and liberated from the controlled modalities of classrooms and the formalities of the

physical institution. There are digitally mediated cultural expressions whose contribution to the educational function of museums have not been assessed yet.

Consequently, it is crucial to comprehend which conditions could best facilitate access to culture for individuals. To this aim it is important to investigate the profile of cultural consumers, the motivations underlying participation and non-participation as well as the modes of consumption. In view of the digital transformation that is massively investing all production systems and elements of our society (Schallmo et al., 2017), it is essential for both the public and private sectors to recognise how digital technologies are impacting cultural participation. From this perspective, it is strategic to investigate the cultural participation of Generation Z, the first generation of digital natives, whose participation, more than other individuals, appears intuitively linked to digital technologies. In addition to constituting a substantial proportion of today's cultural participants, this generation also represents the cultural participants of the future. However, this specific population segment has received little attention in the literature so far.

In addition, in the literature, participation is linked to the levels of capital that participants possess, usually cultural and human capital, whereas digital capital has been ignored. From this perspective, this research opportunity is twofold: on the one hand, to investigate the participation of a specific segment that has never been studied as such; and on the other hand, to utilise a characteristic unique to this segment – digital nativity – to link a new type of capital to cultural participation – digital capital.

Specifically, in addition to researching cultural participation in general, we concentrate our analysis on museums, with a particular emphasis on digital museums. Though digital museum is not a new concept in literature or in everyday practice, yet it still does not find an official definition or recognition in the collective imagination of cultural participants. Our aim is to contribute to fill this gap investigating how digital museum is perceived by Generation Z.

In other words, this thesis explores Generation Z's cultural participation at the European level, with a specific focus on the digital museum. In doing so, it relates the concept of capital to cultural participation, with a concentration on the digital dimension. The novel aspects of this

thesis can be summed up as follows: (i) the theoretical connection between cultural participation and digital capital; (ii) the focus on a specific age cohort, the digital natives, as a sociodemographic factor influencing cultural participation; and (iii) a precise focus on the digital museum from a demand side perspective.

Three are the main hypotheses investigated in the present thesis: (i) cultural participation is related to the level of capitals of Generation Z participants and digital capital – in addition to human and cultural capital – is associated to it, especially when it comes to digitally mediated forms of cultural participation; (ii) beholding high level of digital capital, the individuals of the Generation Z do not uncritically participate in digital forms of culture – in this specific case museums; (iii) social media and art memes represent a competitive tool for digital museums to spread their learning function.

This thesis is divided into two parts, each of which contains three chapters. The first section, which has a more theoretical bent, provides a state-of-the-art examination of the following topics: (i) cultural participation; (ii) the idea of capital and its relationship to cultural participation; and (iii) Generation Z and digital museums. The second section, which has a more empirical focus, provides (iv) an overview of the current state of the data available at European level on youth cultural participation; (v) a description of the survey designed to investigate the phenomenon under investigation; and (vi) an analysis of the collected data and the key findings. In addition, the present work contains an introduction, a conclusion, and two appendices, the first of which presents the survey and the second of which provides additional evidence discovered throughout the study.

In the first chapter titled Cultural Participation, we provide an overview of the theoretical frameworks utilised in the literature to explain this phenomenon and link it to the concept of capital. We then move on to explore the division of culture into brows – which traditionally accompanies studies on cultural participation – and the study of the different socio-demographic characteristics that determine it. Next, we discuss the barriers to participation barriers. In conclusion, we shift the focus of the research to cultural heritage.

In chapter two – Capitals and cultural participation – we investigate the concept of capital as it pertains to cultural participation. Human, cultural, and digital capitals are then examined in depth.

We then wrap the PART I of the present work with chapter three – *Generation Z and digital museum* – in which we explore the relevance of the study of this specific generation with regard to cultural capital and digital nativity and provide the profiling of this generation. We also briefly sketch the conceptualization of digital museums.

The second part is introduced by the fourth chapter – The state of the art – which examines the available statistics at the European level regarding youth cultural participation and the use of digital media for heritage-related goals. The fifth chapter – The Survey – discusses the methodology and design of the ad hoc survey created for the study of the phenomena under investigation. The principal findings of the obtained data analysis are presented in chapter six – The Data Analysis. This chapter begins with findings on cultural participation in general, before moving on to museums and finally to digital museums. The investigation of art memes as a digital opportunity for museums to support and enhance their educational mission follows. We end by summarising the key findings of the analysis and the implications for future research.

PART I

1. Cultural Participation

1.1 The *whats* and *whys* of cultural participation

Cultural participation can be defined as participation in any activity that, for individuals, represents a way of increasing their own cultural and informational capacity and capital, which helps define their identity, and/or allows for personal expression (UNESCO, 2012, p.10). More specifically, it concerns the activities of audiences and participants in consuming cultural products and taking part in cultural activities and experiences (e.g., book reading, dancing, participating in carnivals, listening to radio, visiting galleries) (UNESCO, 2009, p.20). These activities may be active – for instance, painting – passive – for instance, watching a movie – or mixed – for instance, playing videogames – and take place through a number of formal and informal channels (Council of Europe, 2016). Access to cultural content has lost its usual passive, appreciating nature and become a type of creative appropriation by users as a result of technological advancements. Digital access encourages individuals to gain the skills necessary to appropriate and transform cultural materials in their own unique manners (Sacco et al., 2018). In general, forms and meanings of active cultural participation are gaining ground and significance. Thus, there are numerous forms of culture, and individuals engage with cultural experiences in numerous ways (Ateca-Amestoy, 2020); with varying degrees of involvement (UNESCO, 2012); for various purposes, including personal and social ones (Bourdieu, 1984; 1987).

Participation in cultural activities is essential because it generates both intrinsic and instrumental benefits – fulfilling wide social and economic objectives – that are spread along a continuum between the private and public spheres (McCarthy et al, 2004). There are quantifiable benefits considered as means of reaching broad social and economic objectives that have nothing to do with culture in and of itself. In other words, participation in culture offers both intrinsic benefits, which are essentially individual, and instrumental benefits, which are mostly public or collective. Along this continuum, there are benefits that both improve the personal lives of individuals and have a positive effect on the public domain. ¹

1.2 Interdisciplinary perspective

Cultural participation is a very wide concept. Many studies have looked at and investigated different cultural activities. These activities can vary substantially from one another: visiting a museum is not the same of attending a cultural performance such as a musical concert or a theatre piece of art. The latter consist in one-shot consumption while museums offer different kind of possibilities in participating. Reading, which is a primarily solitary and individual activity, is very different from playing a musical instrument in an orchestra, which is a primarily public and collective activity. These distinctions entail different economic implication and different kind of consumption and participation. The literature on the latter is enormous and many are the theories which try to explain the variety of activities so wide that falls under the name of cultural participation. The two main theories are the theory of information processing or

¹ We can recall the following instrumental benefits: (i) cognitive benefits, such as the development of learning skills and academic performance; (ii) attitudinal and behavioural benefits, such as the development of self-discipline, the improvement of self-image, or the ability to work in a team; (iii) health benefits, such as the improvement of physical and mental health and the reduction of anxiety; and (iv) social benefits, such as community identity building, social capital creation, and social capital. It is essential to note that the empirical study on these advantages lacks solid empirical data, demonstrating just correlations and not cause-and-effect relationships. Additionally, it fails to account for opportunity costs and lacks specifics regarding how the benefits are created or how they relate to other cultures. Notwithstanding these constraints, technical, social, and political developments explain the rising prominence of participation in contemporary Western cultures (Bonet and Négrier, 2018).

information theory and the status seeking theory or status theory. The information theory states that differences in cultural participation are explained by the differences in information-processing capacities of individuals. The basic ideas of cultural participation as information theory can be found in Moles (1958), Becker (1964), Berlyne (1974), Bourdieu (1977), Ganzeboom (1982) and Notten et al. (2014). The status theory states that differences in cultural participation are explained by the differences in status individuals want to have/achieve. The basic ideas of cultural participation as status theory can be found in Homans (1974), Bourdieu and Passeron (1977), Ganzeboom (1982) and Notten et al. (2014). In what follows we analyse in depth these two theories.

The status theory is a sociological theory which treats differences in participation rates as differences of the status rendering characteristic of a specific cultural activity. The information theory is a cognitive/psychological theory which treats differences in participation rates as differences of the complexity of information to process in order to enjoy a specific cultural activity. These two theories are not mutually exclusive, but they identify in two very different elements the main driver of cultural participation: for the information theory it is cognitive ability, which with a good approximation can be associated with levels of education, while for the status theory it is social status, which with a good approximation can be associated with levels of income. The literature has long questioned whether it is education or income levels that are more predictive of cultural participation. Most of the empirical evidence shows that education is the main predictor of cultural participation. For this reason, this thesis takes information theory as its reference, without, however, disavowing the merits of the status theory.

With regards to the status theory, it treats cultural experiences as a tool to acquire a specific social status. Both individuals and cultural activities are ranked along status dimensions. Individuals tend to participate in culture associated to their status or to higher status. In other words, individuals participate in culture to show off their belonging to a specific class and to develop their social capitals. Moreover, culture is used as a tool to participate in the social life of a specific social class: cultural participation is seen as a norm of social belonging.

With regards to the information theory, it treats cultural experiences as source of information. Such information has different level of complexity. The higher the level of complexity, the higher the level of cognitive skills individuals need to understand this information and derive pleasure from cultural participation. When information becomes too complex for a given level

of skills, pleasure diminishes and tends to become negative. In other words, cultural participation depends on the ability of individual to understand – thus enjoy – culture.

There are different factors which contribute to the ability to understand culture: (i) innate skills in processing information; (ii) early trained skills in processing information; (iii) previous knowledge of and acquaintance with a specific cultural field or activity: previous participation influences successive one. In other words, cultural participation depends on different types of capital, from the human one, such as individual predisposition and education related one, to cultural capital which is a measure of the ability to process cultural information based on previously processed cultural information. Both information and status theory pose capitals as drivers of cultural participation.

As stated above, the information theory and the status theory are not mutually exclusive: there are considerable overlaps between them. Often, they predict similar patterns of participation with regards to different groups of individuals. These similarities in the prediction of participation can be explained by the fact that educational levels (information theory) tend nowadays to coincide with income levels (status theory).²

If with regards to sociodemographic prediction of participation these two theories find common ground, regarding the correlation of different cultural activities they are very distinct. The information theory tends to correlate cultural activities that demand equal types of skill and knowledge. Differently the status theory tends to correlate cultural activities that have similar status-rendering characteristics, for example the same kind of formal attendance. The correlation of cultural activities according to the information theory is way more complex since it is difficult to define and compare similar level of skills and knowledge for different types of cultural activities. In other words, it is more complex to define and compare different types of

² Furthermore, both the status and cognitive explanations for cultural stratification may be at play in terms of education (Notten et al., 2014). As emphasised, educational levels can serve as proxies for cognitive abilities and knowledge. Simultaneously, educational levels can serve as status indicators and differentiate individuals according to their socially signified cultural participation patterns. Nonetheless, it must be acknowledged that educational attainment and opportunities have expanded in post-industrial and information-based societies. As a result, education can function less as a determinant of social distinction (status theory) while retaining a close approximation of the levels of capital necessary to comprehend culture (information theory). This is another reason why we find information theory more appropriate than status theory for describing cultural participation, as it is better suited to the characteristics of modern societies.

capital required by different cultural activities which could in theory require the same types of skills. Moreover, the two theories tend to consider as elitist forms of culture on the basis of different assumptions: while the information theory consider as elitist form of culture which are complex in information-processing, the status theory tend to consider as elitist those form of culture which render a higher prestige to the attender.

It must be noted that the correlation or tiering of culture is an old matter. Research traditionally defines two broad yet distinct areas of taste: highbrow culture and lowbrow (or popular) culture (DiMaggio, 1987). Examples of highbrow culture, or fine arts, are visiting classical concerts and reading literature. Involvement in these activities is prestigious and requires cognitive skills. Lowbrow cultural activities, such as visiting fairs, may be considered less challenging and esteemed (Notten et al., 2014). Both information theory and status theory have contributed to the classification of culture into brows, the former according to the cognitive difficulty required to comprehend a particular form of culture and the latter based on the status attribution of a particular cultural activity.

1.3 On brows and tastes of culture

In the past, researchers have distinguished between highbrow and lowbrow culture in the analysis of cultural participation, primarily because certain cultural participation patterns were associated with specific social classes and served as a form of social stratification (status theory). High (or alternatively, elite or established) culture and popular culture have been sharply divided. It is not uncommon to define culture in this manner; in the United States and the United Kingdom, the distinction between highbrow, middlebrow, and lowbrow cultures have been common for much of the twentieth century. Bourdieu also emphasised their significance to social relationships. Cultural capital functions similarly to property in that those with it can benefit at the expense of those without it. As with financial capital, Bourdieu identified a circulation and accumulation process (Bennet, 2009).

The division of culture into brows reflects the tendency to equate culture with hierarchy. Making distinctions within cultural manifestations parallels the human propensity to make distinctions in all human endeavours. Late in the nineteenth century, the first adjectival categories were created to define types of culture. Both highbrow and lowbrow are derived from the phrenological terms highbrowed and lowbrowed, which were prominent in the nineteenth-century practise of determining racial types and intelligence by measuring cranial shapes and capacities (Levine, 1988).³ These categories initiated the vertical differentiation of culture and established distinctions that will endure. At the end of the nineteenth century, the term culture shifted from being primarily associated with agriculture to the refinement of mind and manners, discipline, and mental and moral training. The term culture began to serve as a mechanism for distinguishing social classes.⁴ The cultural hierarchies then began to differentiate tastes among social classes: in bourgeois democracies, culture and cultural hierarchies served to preserve distinctive characteristics, a sort of social pedigree. The cloak of culture – sanctioned, sanctified, conspicuous culture – promised to become an impenetrable shell against attack from above or below (Levine, 1988). In other words, the hierarchy of culture has its origins in a strongly waning colonial spirit and serves a profound purpose of social class differentiation. Nevertheless, aesthetic factors also played a role in shaping the hierarchy, but they cannot explain the nature of the mores and institutions that accompanied the development of high culture: these were shaped by the entire social, cultural, and economic context in which that development occurred (Levine, 1988).⁵

³ As such, cultural hierarchy has its origins in the colonial era and is embedded in the language of racial differentiation, neither of which are neutral: these categories were created to sustain white supremacy in a particular historical context. Adjectives such as high, low, rude, less, lesser, higher, lower, beautiful, modern, legitimate, vulgar, popular, true, pure, highbrow, lowbrow were applied almost indefinitely to nouns such as arts or culture (Levine, 1988).

⁴ In the same way that the noun class adopted a series of hierarchical adjectives in the late eighteenth and early nineteenth centuries – lower, middle, higher, and working – the noun culture did the same a century later. Exactly as the first event represented the economic changes brought about by the Industrial Revolution in England, the second event mirrored the cultural effects of modernization (Levine, 1988).

⁵ Aesthetically speaking, certain forms of culture, such as cinema, were associated with forms of amusement whose highest objective may have been to serve an instructional function rather than to become a high form of art. These prejudices still belong to the hierarchies of culture: to the split into categories based on aesthetic and social criteria (status theory) were added those connected to education as an element of social differentiation (information theory). In other words, the degrees of skill and knowledge required to comprehend particular cultural forms have become an additional criterion for ranking cultural forms.

We hold, for the purposes of this discussion, that rigid categorization limits our understanding of cultural manifestation. In addition to aesthetic, social, and cognitive (educational) criteria, other criteria such as thematic criteria (the message of various forms of expressive culture), functional criteria (how various forms of expressive culture function), and quantitative criteria (the extent to which various forms of expressive culture are diffused in the society) could be used to differentiate cultural forms (Levine, 1988). In addition, we are convinced that, in today's society, the distinctions between cultural activities and related classifications appear to be blurring. As we will see, education, and not class, is the primary predictor of cultural participation, so the distinction between highbrow and lowbrow cultural activities has more to do with educationally related preferences and competencies, as well as the capacity to comprehend and appreciate the symbolic meanings of various forms of culture (information theory). In other words, cultural participation is more related to cultural and human capitals than to social class; we will argue that digital capital also plays a role in today's society. In terms of the capitals required to disentangle the meaning of particular cultural experiences, highbrow and lowbrow cultural differences could persist to some degree.

Furthermore, as Friedman (2011) notes, the distinction between highbrow and lowbrow culture is becoming less distinct as a result of the expansion of high culture to a broader audience and the fact that contemporary cultural industries have developed products that are more aestheticized and intended for a more selective audience, with jazz music or certain films and books serving as examples (Suárez-Fernández, 2020, p.9). Nevertheless, it cannot be denied that an almost unconscious hierarchization of culture belongs to contemporary thinking and that there exists the perception of things such as Culture with capital letter and culture with lowercase letter: Over a century of (colonial) hierarchization has profoundly shaped our way of thinking.⁶

⁶ To operationalize with more accuracy the perceived differences between cultural expressions, instead of the highbrow-lowbrow terminology, the differentiation between formal, informal, and non-formal culture could be preferable. It pertains institutionalization related differences in the perception of culture. As formal are perceived those forms of culture which are highly institutionalized, such as museums, exhibitions, theatre, and all those activities which are organized and proposed by formal institution which provide an official and formal framework. As informal are perceived those forms of culture which are perceived as artistic or cultural but are not integrated into highly formal frameworks: examples could be provided by amateur dancing and singing or associative activities. As non-formal are perceived those forms of culture which are cultural expression that are not properly considered cultural or artistic and that do not occur within institutional and formal contexts: fair and festivals or social media activities are part of non-formal cultural expressions. Within the formal, informal, and non-formal framework it is easier to understand the perceived difference between community bottom-up cultural

Lastly, another contemporary topos challenges the distinction between lowbrow and highbrow culture: the phenomenon of cultural omnivorousness. It refers to the tendency of a growing portion of the population to consume both traditionally defined lowbrow and highbrow culture in large quantities. According to Peterson and Kern (1996), contemporary elites – whether they are defined as such according to status theory or information theory, and therefore on the basis of levels of income or education – no longer consume only legitimate culture but are better characterised as open-minded omnivores, willing to include both high and low cultural forms in their consumption repertoires (Friedman, 2011).

The omnivore hypothesis (Peterson, 1992; Peterson and Kern, 1996) drew a pyramidal hierarchy in cultural tastes from omnivore to univore: cultural elites are more likely to be omnivores, with broad tastes along the cultural brows, whereas lower down the social hierarchy cultural tastes are narrow and focused on few non-elites forms of culture, univores. These cultural participants, who are the most disadvantaged (or weakest), do not demonstrate an increased propensity for (highbrow) cultural participation. In other words, the distinction between elite and mass participation in culture is challenged by the omnivore hypothesis, which asserts that participants wealthy in economic, social, and cultural capital do not reject so-called lowbrow culture and embrace an eclectic mix of cultural products and practises from across the brow spectrum.

According to de Vries and Reeves (2021), the omnivore hypothesis has two distinct interpretations: (i) the weak interpretation which holds that social elites tend to be more culturally engaged than non-elites (enjoying or consuming a larger volume of cultural forms) and that their tastes frequently cross the line between elite and mass culture; (ii) the strong interpretation which holds that omnivores are true cultural egalitarians who are opposed to snobbish, class-based exclusion in cultural participation. Regardless of which interpretation we favour, the phenomenon of cultural omnivores undermines the distinction between cultural brows. In addition, cultural participation has expanded to include many mediated experiences

participation forms and institutionalized top-down ones, renouncing hierarchies of presumed merit or quality. In the case of bottom-up or everyday activities such as social media interactions, the individuals may not be aware of their actual participation in culture since non-formal participation is way harder to recognize as participation in culture compared to formal one. Moreover, in the information society, there are forms of hybridization between formal, informal, and non-formal activities. One example is provided by formal institutions, such as museums, which operate through non-formal channels and forms of culture, such as social media. Whether these hybrid forms are considered and recognized by individuals as cultural participation is an open question.

as a result of digitalization, which further blurs cultural boundaries. A good example is provided by art memes, which will be covered in further detail later.

1.4 Theories on cultural consumption and participation

The phenomena of cultural participation and cultural consumption are distinct. The former is a complementary and broader concept, whereas the latter refers specifically to the consumption of goods and services with primarily aesthetic functions and secondary utilitarian functions (Rössel et al., 2017). Despite this distinction, two major theories on cultural consumption can help explain cultural participation. On the one hand, Becker and Murphy's (1988) rational addiction model explains how cultural goods may generate addiction, in the sense that past and future consumption directly affects the utility and value of current consumption. In contrast, Levy-Garboua and Montmarquette's (1996) learning by consumption model suggests that individuals develop taste for cultural goods as they consume them: any new experience of a good reveals a positive or negative increment in the participant's taste for it (Seaman 2006).

There are four major similarities between these two theories: (i) taste for culture is conceived of as acquired or discovered, and the rate of cultural participation rises with exposure over time. In other words, according to these theories, cultural participation depends on the accumulation and possession of various types of capital: past participation influences present appreciation via accumulated capital (Castiglione and Infante, 2015); (ii) education (information theory) is more important than class in explaining cultural participation (status theory); (iii) cultural goods are regarded as experience good (Levy-Garboua and Montmarquette, 1996), which can only be evaluated through participation, and imply that education is the means by which cultural participation is transformed into utility; (iv) over time, consumer preferences evolve.

There are a few subtle distinctions between these theories. According to the rational addiction model, cultural participation is an addictive good because previous consumption (and prices) substantially increase the marginal utility of present participation. In addition, future attendance influences current attendance, whereas past and future prices influence current attendance only indirectly via their effect on past and future attendance. Recent developments of the rational addiction model have demonstrated that cultural participation, in the case of theatregoers, is neither myopic nor irrational (Castiglione and Infante, 2015). According to the learning by consumption model, habit formation and the accumulation of consumption capital are inevitable aspects of the human condition, including cultural participation.

Concerning current participation, the learning by consumption model asserts that past participation – and associated capitals – have greater explanatory power than future consumption, whereas the rational addiction model asserts that individuals maximise an intertemporal utility function with full knowledge of the anticipated future consequences of current participation. In other words, the rational addiction model defines as rational participation patterns that are influenced not only by past consumption and derived capital (learning by consumption model), but also by future participation utility: both capitals and time are considered.

In addition, both of these theories consider the formation of preferences. Individuals, according to the learning by consumption model, are uncertain about the quality of performances and, as a result, update their preferences in response to their cultural experiences; in other words, preferences are formed but unknown. Each time a person engages in cultural activities, they gain a new level of satisfaction, which influences their future expectations. This procedure reveals positive or negative surprises that affect the individual's participation experience (Castiglione and Infante, 2015). The taste for experienced goods increases due to the acquisition of additional taste through repeated exposure, whereas the taste for unexperienced goods remains unchanged. Instead, according to the rational addiction model, individuals have an anticipatory attitude toward their preferences. Participation decisions are made by maximising an intertemporal utility function. Individuals accumulate consumption capital while engaging in cultural activities. If present participation increases after consumption capital has been gained, the good is addictive and the participant is rational. The

greater the past participation, the greater the present and future participation, which are both price and income inelastic, according to this model. In this context, a key aspect of rational behaviour is the tendency to consider the future consequences of current consumption decisions, despite the fact that the discount rate varies from person to person (Laporte et al., 2010, Castiglione and Infante, 2015).

In other words, according to both of these theories, the development of subjective perceptions of the quality of culture is contingent upon experience and the accumulation of culturally functional capital (information theory). In addition, informal education and early socialisation in culture play a central role and have a positive impact on cultural participation due to the cumulative nature of personal cultural capital and the experiential value of cultural goods (O'Hagan, 2017).

1.5 Cultural participants and socio-demographic stratification

Cultural participation has been extensively analysed in the academic literature to demonstrate the demographic and socioeconomic characteristics of cultural participants. The connection between the individual and culture is an essential aspect of defining social structures (Katz-Gerro, 2004). The question is whether people with similar sociodemographic characteristics have comparable participation rates. Even though the strength of these associations, their stability over time and their comparability over countries exhibit inconsistent findings (Katz-Gerro, 2004), partially because of the different nature of the wide variety of activities which fall under the name of culture and partially because of the different methodology of research employed across countries and over time, the profiling of cultural participants is relevant for both the public sector and the private sector. The former may benefit from the profiling of cultural participants in order to provide better designed equitable cultural policies seeking an optimal redistribution of resources (O'Hagan, 2017) and to encourage disadvantaged segments of the population – typically less likely to participate in culture – to reap the benefits of cultural

participation (Suárez-Fernández et al., 2019). The private sector needs a better understanding of consumer profiles in order to develop products and publicity campaigns that attract new consumers and retain existing ones. The profiling of non-participants and the study of the reasons for non-participation – which, according to Eurobarometer 466 (European Commission, 2017), are primarily lack of time, cost, and lack of interest – are also of particular interest, as they make it possible to analyse and address potential participation barriers in order to spread the positive externalities associated with cultural participation.

In the following sections, we analyse the socio-demographic factors that influence cultural participation: education level and early arts education, income and labour status, gender, ethnicity, spatial proximity, age, and technology. Before beginning, it is essential to emphasise that the various findings we will discuss and compare are based on disparate data sets with respect to collection and analysis methods. In light of this premise, it is natural to anticipate outcomes that are sometimes contradictory or inconsistent and not always comparable.

1.5.1 Educational level and early-education in arts

When analysing cultural participation, education is the most impactful socio-demographic variable, and acts as the single best predictor of cultural participation (Seaman, 2005; Ateca-Amestoy, 2020; Suárez-Fernández, 2020). Higher education increases the likelihood of cultural participation, according to Sokolov (2019). It is intriguing to note that high levels of education are only weakly associated with exclusive highbrow consumption today (Weingartner and Rössel, 2019), but are strongly associated with general engagement in cultural participation and digital cultural participation as well (Ateca-Amestoy and Castiglione, 2016). On the one hand, these results validate the thesis of omnivorousness, and on the other, they validate the assumptions of information theory: education develops the cognitive capacities – and thus levels of human capital – necessary for a complete and satisfying experience of culture, and it creates the preconditions for (wider) cultural participation.

In accordance with the rational addition model and the learning-by-consumption pattern, early socialisation and informal education are also significant education-related determinants of cultural participation, particularly when actual participation rather than frequency is considered. Participation in art education appears to be more influential than any other personal characteristic, including general educational attainment, in determining attendance (Ateca-Amestoy, 2008; Borgonovi, 2004). Regarding early arts education, there are also dynamic effects at play, as parents will pass on to their children the knowledge to which they were exposed as youngsters. Therefore, education has both the typical direct effect on children and the indirect effect via the transfer of resources from parents to children (Ateca-Amestoy et al., 2017). Despite this, the human capital argument relating to early socialisation to the arts cannot be clearly generalised due to the differing hierarchies of different art-related disciplines education (Coulangeon, 2005). Moreover, in nations with significantly lower-than-average proportions of tertiary-educated labour forces, the impact of general education on cultural participation is higher (Falk and Katz-Gerro, 2015). In contrast, as collective school attainment rises, the positive effect of individual school attainment on cultural participation diminishes (Coulangeon, 2005). In accordance with the status theory, Bourdieu proposed that educational attainment acts as a discriminator between different social classes and as a status indicator. The ability to transform cultural capital derived from cultural participation into social capital – related to social status – is another important predictor of cultural participation (Willekens and Lievens, 2016). This ability is the propelling force of cultural participation according to the status theory.

Thus, education is the most significant predictor of cultural participation, and it correlates more with the likelihood of cultural participation than with the frequency of a particular cultural activity (Borgonovi, 2004). According to Ateca-Amestoy (2008), there is also a positive correlation between education level and quantity demanded. This could be an explanation for the escalating phenomenon of cultural omnivores, who are highly educated consumers of a wide variety of cultural goods and services. In general, being human capital the complex of knowledge, skills, and competence an individual beholds and being education the process and result of mastering systematic knowledge and skills (Webb, et al., 2018), the relation between education and cultural participation is quite straight forward. This is especially true when we

consider that cultural participation is contingent on an individual's ability to process complex information based on their capital levels, according to information theory.

1.5.2 Income and labour status

Individual resources must be considered when analysing cultural participation. Regarding cultural participation, therefore, it is crucial to consider both time and financial resources. Individuals may be viewed as utility maximisers constrained by financial and time limitations (Gray, 2003). Cultural activities are time-consuming: discriminatory time availability, household composition including the presence of dependent members, and synchronising time with companion(s) are determining factors for cultural participation. In addition, economic resources play a significant role in determining cultural participation: opportunity costs and shadow prices appear to be relevant factors. The level of income is thus an additional important socio-demographic factor influencing cultural participation, as it is correlated with both economic and time availability. It has been demonstrated that income, and thus labour status, is a significant predictor of cultural participation, second only to education (Coulangeon, 2005; Sokolov, 2019; Suárez-Fernández, 2020).

Labour status is related to the availability of time and financial resources to invest in cultural experience. Higher employment status, and consequently higher income, tends to coincide with greater cultural engagement. This correlation – and the apparent paradox of the higher opportunity cost of time for high-earning individuals – can be explained by noting that typically, higher labour status corresponds with a higher level of education, which, as stated previously, is the most significant predictor of cultural participation (Ateca-Amestoy and Prieto-Rodríguez, 2013). Moreover, according to the status theory, high-earning individuals demonstrate their labour status and social class through cultural participation; this may account for their higher participation rates. Due to the higher opportunity cost of time for full-time workers, part-time employment increases the intensity of cultural participation (Ateca-Amestoy and Castiglione, 2016). Employment has a positive effect on income and increases demand, but it also tends to

reduce the availability of free time. Since employment status is related to time availability and financial constraints, it also affects attendance (Suárez-Fernández et al., 2019). Thus, higher income levels, which are typically associated with a higher level of education, occupational prestige, occupational status, and social class, tend to be associated with greater cultural participation (Katz-Gerro, 2011). Instead, the activities associated with status are not linear. In reality, the relationship between cultural participation in highbrow cultural activities and higher income is complex. According to Borgonovi (2004), there is no significant difference in museum visits and television viewing between income groups. In contrast, some research (Bennet et al., 2013) appears to highlight the correlation between higher cultural preferences and higher work status, with apparent strong polarizations. Thus, while the relationship between higher income and higher cultural participation appears consistent, the relationship between higher income and highbrow cultural activities appears less consistent. Furthermore, younger cohorts are less dependent on income for cultural consumption than older cohorts (Sokolov, 2019). This may be the result of discriminatory pricing policies that favour student and youth participation. Students are the socio-demographic group that engages in cultural activities more frequently and with greater diversity (Suárez-Fernández et al., 2019).

As cultural activities are typically resource-intensive (in terms of both time and money), labour status and income are good predictors of cultural participation. These variables are highly correlated with cultural participation's social capital levels. Nonetheless, as level of income is generally correlated with level of education, human and cultural capital are also at play and help to explain the apparent paradox of higher time cost opportunity among higher-earning individuals who also exhibit higher rates of cultural participation.

1.5.3 Gender

Cultural participation has been extensively investigated in relation to gender. Historically, higher rates of cultural participation were associated with women (Sokolov, 2019).

Furthermore, women were associated with highbrow cultural participation, whereas men were associated with lowbrow ones (Bihagen and Katz-Gerro, 2000). When analysing gender, additional cohort effects must be taken into account. Working full-time has a positive effect on women's participation rates, but the same cannot be said for men's participation rates (Willekens and Lievens, 2016). Furthermore, gender appears to yield mixed results when applied to cultural participation analysis, as childcare has a negative impact on female participation in culture, but women are socialised to culture earlier in their lifespan and participate in cultural activities with greater intensity than men (Seaman, 2005; Gray 2013). Consequently, women tend to pass on their cultural capital to their children. According to Muñiz et al. (2014), the number of children or the size of the household are frequently associated with lower levels of cultural participation. Unfortunately, these factors have a negative impact on female participation rates. In addition, marriage has a significant negative impact on cultural participation: married respondents engage in fewer cultural activities than singles (Christin, 2012).

While the traditional profile of a cultural consumer is a highly educated woman in her fifties (Suárez-Fernández, 2020), other studies do not demonstrate this correlation, and the higher participation intensity of women is not discernible (López Sintas and Garca Ivarez, 2002). In Italy, for example, men report engaging in more leisure and cultural activities with greater intensity than women. Younger women have a higher participation rate in museums and exhibitions than younger men, while the opposite is true for older age groups (ISTAT, 2020). Females appear to have a lower likelihood of consuming highbrow music online, while the lowbrow alternative has no statistical significance. Women have a higher likelihood of consuming digital dance and ballet, as well as digital literature (Ateca-Amestoy and Castiglione, 2016). They also participate less in theatre (Ateca-Amestoy, 2008).

In general, women appear more likely than men to be active cultural participants as opposed to inactive ones (Sokolov, 2019). This could be explained by the trend of early socialisation in art of female participants as a gender-specific socialisation pattern in the family (Willekens and Lievens, 2016), which as education factor influences the formation of cultural capital that, as stated previously and accordingly to the information theory, is the strongest factor influencing cultural participation. Females may find their cultural capital to be more valuable on the labour market, as arts and humanities-related professions tend to be more feminised (Suárez-Fernández, 2020).

In general, many cohort effects associated with gender, such as childcare, early cultural socialisation, and marital status, may explain cultural participation more than gender itself. Some of them demonstrate the effect of various forms of capital on cultural participation.

To conclude, we must emphasise the absence of recognition in the literature of a gender spectrum broader than the binary division. This represents not only a gap in the body of knowledge - and therefore a research opportunity - but also a chance for the research world to get closer to the real world.

1.5.4 Ethnicity

The majority of cultural participation research has been conducted in western industrialised societies. This has led to a stalemate in cultural participation research (Katz-Gerro, 2011) concerning ethnicity as a sociodemographic predictor of cultural participation. The study of ethnicity as a driver of cultural participation is indeed challenging, as national and cultural preferences may influence cultural participation regardless of the racial factor. Eurobarometer 466 (European Commission, 2017) demonstrates that, throughout the European Union, there are substantial differences between nations in terms of participation in various cultural activities. In addition, minorities and migrant communities are diverse across the globe and interact with the dominant culture through various mechanisms; cultural participation can be an instrument to interact with the dominant culture. It must be noted that in order to integrate, the migrant community frequently engages in informal and intangible forms of culture, which are rarely captured by national statistics or research surveys. In fact, one of the positive externalities resulting from cultural participation is its reported association with social inclusion and integration.

Unfortunately, research indicates that individuals born in non-EU countries are less likely to visit museums and historical sites in Europe, indicating a low level of cultural integration (Falk

and Katz-Gerro, 2015), despite the fact that there appears to be considerable room for improvement in terms of their cultural participation (Bertaccini et al., 2021). In general, among ethnic minorities, the group with the strongest positive relationship between access and the likelihood of cultural attendance is the one with the highest level of education (Brook, 2016). Thus, education appears to influence cultural participation even after accounting for ethnicity. In other words, when minorities' behavioural patterns are analysed, the capitals argument of the information theory is confirmed, suggesting that cultural participation is primarily influenced by education and not by ethnicity. When higher cultural participation rates are associated with white ethnicities, it may be due to early socialisation in art: the white majority is much more likely to have received all forms of art education during childhood (Borgonovi, 2004). As previously stated, education and early socialisation in the arts appear to be the most accurate predictors of cultural participation, regardless of ethnicity. In fact, Katz-Gerro and Shavit (1998) demonstrated that lifestyle – and consequently cultural consumption – are primarily influenced by class position and educational disparities between ethnic groups, and secondarily by ethnicity.

Ethnicity may exhibit distinct cultural consumption patterns (Seaman, 2005), and disparities persist in digital access (Hoffman and Novack, 1998; Ateca-Amestoy and Castiglione, 2016).

In the United States, blacks have a lower frequency of digital cultural participation compared to whites, but there is no statistically significant difference between other non-white ethnic groups (Ateca-Amestoy and Castiglione, 2016). Chen (2015) asserts that mobile cultural participation reached patrons from a wider range of social classes. Hispanics are more active mobile cultural participants than Whites. This finding is consistent with previous research indicating that young Hispanics are more likely than their White counterparts to use the picture, video, and music capabilities of their mobile phones (Hargittai and Kim, 2010).

In general, as predictors of cultural participation, levels of education and early socialisation – thus the possession of various forms of capital – appears, on average, more influential than ethnicity.

1.5.5 Spatial proximity

For certain cultural activities, spatial proximity is a relevant predictor of cultural participation. Infrastructure and spatial divide act as a discriminant of participation and attendance. In fact, metropolitan residents exhibit a higher likelihood and level of participation (Muñiz et al., 2014). Evans (2016) emphasises the significance of bridging the gap for cultural activities that are dependent on space. Certainly, the emergence of digital technologies has counterbalanced the influence of proximity; however, issues regarding the digital divide have emerged. In general, the existence of agglomeration economies and threshold market sizes on the demand side continues to favour cultural participation in locations with a larger population (Gray, 2013, O'Hagan, 2017). In addition, spatial factors tend to restrict cultural access for groups such as ethnic minorities and the elderly (Evans, 2016).

In contrast, spatial proximity appears to facilitate the cultural participation of those with fewer qualifications, who, according to traditional explanations, have a low propensity to attend: living areas function as opportunity structures for attendance (Brook, 2016). In other words, the opportunities that exist in areas with a high degree of urbanisation serve as exposure factors for culture and as creators of cultural demand and capital. Participation in opera (Ateca-Amestoy, 2008) and theatre (Ateca-Amestoy, 2008) has been found to be positively correlated with the number of local establishments. In addition, a higher concentration of institutions reduces the travel expenses required to attend events and find a supply that meets one's preferences (Borgonovi, 2004). This is significant because cultural participation is a resource-intensive activity, and spatial proximity appears to be a significant barrier to participation (Scherger, 2009).

People who reside in areas with a larger cultural supply are more likely to be culturally aware and to consume content online (Ateca-Amestoy and Castiglione, 2016). Chen (2015) reports that mobile cultural participation helps bridge the gap between urban and rural cultural participation in person. Thus, spatial proximity and inequalities influence cultural participation, both in-person and online.

Having improved access to cultural facilities seems to be one of the strongest predictors for increased frequency of attendance (Brook, 2016). However, it must be noted that habitat size

determines the frequency of attendance but not the probability (Ateca-Amestoy, 2008; Borowiecki, and Prieto-Rodriguez, 2014), which is more dependent on education and income. In addition, the largest habitat sizes appear to be associated with the highest concentrations of cultural omnivores (López Sintas and Garca lvarez, 2002). In this regard, it might be interesting to observe that habitat status increases certain forms of digital cultural participation, such as the consumption of highbrow music. This could be explained by the fact that being exposed to live music, which is more prevalent in large cities, may have a reinforcing effect on overall cultural participation (Ateca-Amestoy and Castiglione, 2016). In other words, live exposure to culture increases cultural capitals, which in turn encourages further live and online cultural participation.

In general, agglomeration and infrastructures provide a greater variety of goods and facilitate cultural exposure. In urban areas, there are consequently greater opportunities to cultivate human and cultural capitals. Consequently, the demand for culture and cultural participation rates appear to increase.

1.5.6 Age

Commonly, social science studies of cultural activity have centred on class, gender, and ethnicity, and have frequently disregarded age as an insignificant background variable (Scherger, 2009). In economics, however, age is a crucial variable. To provide a more comprehensive overview of the phenomenon, it is pertinent to approach cultural participation from an interdisciplinary perspective, such as the one presented in the present work. Currently, the effect of age on participation is unclear and could be partially explained by cohort effects, such as the availability of free time, health, or financial resources. While older individuals have more time and resources to invest in cultural participation, economically active individuals have the resources but less time due to work and family obligations. In addition, certain cultural

practises are more popular among younger individuals (Ateca-Amestoy, 2020), who typically have more free time but less financial resources.

Different forms of culture reveal age-related preferences of participants that vary. For instance, unlike cinema, where audience profiles reveal a rapid age-decline between younger and older consumers, libraries maintain a relatively even distribution of age group usage and a higher proportion of usage from lower socioeconomic groups (Evans, 2016). In Italy, young people are more than twice as likely as older people to participate in cultural activities. The same pattern holds true for museum, art, and archaeological site visits (ISTAT, 2020). In comparison to household income and education, the magnitude of age's marginal effects is generally very small (Falk and Katz-Gerro, 2015). In addition, we must consider that, historically speaking, older age is more frequently associated with low educational attainment and low income than younger age. Given that education and income are the most significant predictors of cultural participation, the effect of age on cultural participation can be viewed as marginal and secondary. Thus, socioeconomic differences between birth cohorts can explain differences in cultural participation by age (Scherger, 2009).

However, age analysis as a socio-demographic variable remains relevant. The current participation patterns of younger generations are essential for identifying future participation trends and designing policies accordingly. Young people are also exemplary of digital cultural consumption (Mihelj et al., 2019). The identification of generational patterns of cultural consumption and their origins could be useful for predicting future developments in the cultural field and identifying potential points of intervention to affect them (Scherger, 2009). It is said that culture is an acquired taste, and the acquisition of taste requires time. Consequently, participation would increase with age. Exceptions may include artistic and cultural forms that naturally appeal to younger audiences for whatever reason (Gray 2013). According to the rational addiction model (Becker and Murphy, 1988; Castiglione and Infante, 2015), cultural preference develops with age, and cultural participation should increase with age. It does not appear to be always the case (Gray, 2003; Willekens and Lievens, 2014). In fact, some cultural areas are more popular with younger generations (Borgonovi, 2004; Borowiecki and Prieto-Rodriguez, 2014). Sokolov (2019) demonstrated that youth are the most avid consumers of culture. Students are significantly more likely to visit museums and historical sites and significantly less likely to never visit them. Theatre appears to be an art form that

particularly appeals to younger generations (Borgonovi, 2004). In attempting to explain this phenomenon, one can consider that students' leisure time is more flexible than that of employed individuals (Falk and Katz-Gerro, 2015) and that the lower economic means of youngers and students are counterbalanced by favourable pricing policies: these factors can help explain the higher cultural consumption of youngers. In addition, ongoing education tends to make young students more receptive to forms of cultural participation and more likely to develop cultural capital.

It appears that age analysis provides mixed results when applied to cultural participation in different countries or decades and comparisons are difficult to make. Instead, when it comes to cultural preferences, age emerges as the most significant dividing line between highbrow and popular lifestyles, with omnivore cultural participants getting younger and younger (Scherger, 2009). Furthermore, younger generations appear more likely to embrace popular forms of culture due to the socialisation patterns that these cultural forms entail (van Eijck and Knulst, 2005). Participation in exclusive highbrow cultural activities does not exclusively denote high social standing. Instead, it has evolved into an indicator of (older) age (Weingartner and Rössel, 2019). According to López Sintas and García Ivarez (2002), among younger generations, social status is gained not only by consuming prestigious forms of art, but also by displaying cultural knowledge in a variety of genres. The number of cultural genres a person consumes is dependent on his or her socioeconomic standing, according to DiMaggio (1987). Consequently, younger generations are blurring the distinction between highbrow and lowbrow cultural consumption. Younger age is so associated with the highest degree of cultural omnivorousness (López Sintas and García Álvarez, 2002; Van Rees et al., 1999).

According to the information theory, the development of cultural capital increases cultural participation: the longer an individual is exposed to culture, the more he or she should engage in cultural activities. Accordingly, older age should be associated with higher patterns of cultural participation; however, the data indicate the exact opposite, with younger individuals being the most avid cultural participants. One possible explanation can be provided by the fact that younger generations are exposed to capital formation processes resulting from ongoing education and that these types of capital – derived from ongoing processes of accumulation – are highly impactful on cultural participation. Young people may also possess additional forms

of capital, such as digital capital, that interact with cultural participation and encourage it. In addition, favourable pricing policies and increased time availability may be additional factors that encourage participation by younger individuals.

1.5.7 Technologies

Numerous new forms of cultural participation have been made possible by the proliferation of the Internet and new technologies. Online access to culture has expanded participants' opportunities, allowing them to overcome obstacles associated with live forms of cultural participation. The interrelationship between online and in-person cultural consumption, and whether the former complements or substitutes the latter, is currently a major concern for policymakers and cultural managers (Suárez-Fernández, 2020). According to research, online access supplements traditional access (Montoro-Pons and Cuadrado-Garca, 2011; Bakshi and Throsby, 2010; Bakshi and Throsby, 2014; Evrard and Krebs, 2016). In addition, internet-based cultural participation raises questions regarding the democratisation of cultural access. In other words, it is necessary to ask who participates in these technologically enabled new forms of culture. On the one hand, it appears that the likelihood of online cultural activity participation increases the likelihood of traditional cultural activity participation (Ateca-Amestoy, 2008). Cultural participation has been found to be positively correlated with home equipment, computer ownership, and new technologies (Borowiecki and Prieto-Rodriguez, 2014). On the other hand, it appears that online culture only attracts cultural participants, facilitating their access, rather than drawing in new audiences. In this sense, the internet functions as a mechanism that reproduces old inequalities in cultural access (Mihelj et al., 2019): the democratisation of culture appears to be in its infancy.

However, computers, the Internet, and mobile phones provide a new outlet for increased cultural participation. Due to the digital divide, they may facilitate access to a broader range of cultural content while simultaneously introducing a new stratification of cultural consumption.

Age and education appear to be strongly associated with it (Ateca-Amestoy and Castiglione, 2016). With respect to the proper penetration of technologies – first-order digital divide – metropolitan status, ethnicity, education, income, and age are the relevant variables (Ateca-Amestoy and Castiglione, 2016). With regards to the actual use of internet related capacities – second-order digital divide – age, education, and income play the most important roles (Van Deursen and Van Dijk, 2014). Thus, age and education are strictly related to the digital divide and to technology-related cultural participation: younger age is associated with high levels of digital capital, whereas education is associated with high levels of human and cultural capitals. These capitals contribute to enhance cultural participation. In addition, a gender gap in internet usage is observed (Bimber, 2000; Ono and Zavodny, 2003). There is evidence that a higher income correlates with higher digital access and usage, so there is also a correlation between income and digital cultural participation (Wei and Hindman, 2011).

Despite the emergence of digital divides, digital technologies could aid in the elimination of other inequalities. Cheng (2015) asserts that mobile access provides members of disadvantaged groups with a more accessible and affordable tool for cultural participation; thus, mobile technologies mobilise rather than normalise cultural participation. Mobile technologies are, for instance, a factor of social inclusion into cultural participation activities for those with lower levels of education, a relevant factor given that education is the most significant predictor of cultural participation. In contrast, other strands of research suggest that digital platforms, as the dominant vehicles of mediated cultural participation, have not only significantly increased the volume, accessibility, and diversity of cultural content, but have also created new opportunities for cultural differentiation, segmentation, and consequently inequality. In other words, as previously stated, digital media are likely to exacerbate existing inequalities in access to culture rather than reduce them (Mihelj et al., 2019).

To conclude the technological determinant to cultural participation, with the spread of computer, the Internet, and mobile phones the issue of digital divide emerges and represents a new stratification for cultural participation. In relation to technologies, a new form of capital arises as essential in everyday life and impactful on cultural participation, namely digital capital. As we have seen, according to information theory, forms of human and cultural capital are required to properly experience culture. At the same time, we theorise that in technology-

mediated societies, levels of digital literacy and forms of digital capitals have become essential for effective cultural participation.

1.6 Barriers and reason for not participating: from occasional to frequent participants

In light of the benefits of cultural participation, it is essential to examine factors that discourage participation in addition to those that influence it. In order to design a policy, it is necessary to understand its intended audience. It is also essential to provide access to individuals who choose not to join. Suárez-Fernández (2020) suggests that governments could pay attention to the high percentage of people who do not participate in cultural activities, which is consistently documented in surveys of all types. The National Endowment for the Arts (NEA, 2015) differentiates between truly disengaged individuals and interested non-attendees – or group of never-goers (who never participate) and subpopulation with a positive probability of attending (Ateca-Amestoy, 2008). Individuals can be categorised as (potential) participants (attending a positive number of times or eventually zero) and non-participants (Suárez-Fernández et al., 2019). Therefore, there are two types of non-participants: those who would not attend regardless (non-participants) and those who may not have attended but could decide to do so under different circumstances (potential participants).⁷

In addition, recent publications have demonstrated that the primary factor structuring cultural participation is a continuum between engagement and disengagement (Weingartner and

⁷According to Eurobarometer 466 (European Commission, 2017), as mentioned previously, the primary reasons for nonparticipation are lack of time, cost, and lack of interest. While the first two refer to the lack of resources such as time and money, the third could be interpreted, according to the information theory, as the lack of information-processing capacity required to comprehend and participate in culture, or, in other words, as the lack of capital required for cultural participation. Consequently, there are two subpopulations of non-participants: those who are unable to attend due to a lack of resources, such as time or money, and those who are genuinely uninterested in culture. By removing barriers to participation, the first could become cultural participants. This potential change highlights the importance of analysing reasons for nonparticipation and attempting to eliminate barriers to participation.

Rössel, 2019). On one end of the spectrum are those who participate in multiple activities, while on the other end is a group that is disengaged and spends much time at home, perhaps watching television or listening to the radio. Along this continuum, there are participants who are inactive, intensely highbrow, and moderately eclectic. The frequency of participation, in addition to the range or type of activity chosen, distinguishes those who are relatively disengaged from those who choose quite freely from the smorgasbord of highbrow, popular, and global cultural forms driven by the progressive differentiation of genres and the proliferation of offerings of the cultural industries (Weingartner and Rössel, 2019).

When an individual internalises his or her motivation for cultural participation, he or she transforms from an occasional to a frequent participant. It is no longer a question of whether to participate, but rather how and when to participate. In other words, participation becomes a continuous process (McCarthy, 2004) and participants amass the capitals necessary to facilitate continued and frequent participation.^{8 9}

The development of such practise is crucial: the more one experiences culture, the more perceptive and adept he or she becomes at interpreting what is experienced.

⁸ As the frequent participant gains experience, competence, and familiarity with the various forms of culture, his or her preferences and expertise may change, which will influence future participation decisions. It appears that the effects of cultural participation are likely to accrue to an individual rather slowly at first, but then accelerate once he or she gains familiarity with the cultural activity and greater mental, emotional, and social engagement through the experience (McCarthy et al., 2004). In other words, cultural participation appears to be a process of taste formation and learning that involves the accumulation of particular forms of capital.

⁹ People initially engage with culture for intrinsic reasons, such as pleasure and emotional stimulation. Nevertheless, these benefits are only seen after an initial or gateway encounter. Individuals are highly likely to maintain their involvement in culture if the initial experience was favourable and offered them pleasure or recognition. People can interact with culture at various ages and for various causes. When the first interaction with culture occurs during childhood, it is typically through a hands-on activity such as sketching, singing, or playing an instrument, which enables the development of the ability to distinguish and comprehend culture. A child's initial interaction with culture might also occur under the guidance of a mentor. The mentor – such as a teacher, a parent, a relative, or a friend – is a fan of any type of culture who want to share his/her enthusiasm: youngsters are therefore exposed to the mentor's cultural capital and begin to grow their own capital through exposure to culture. The mentor's cultural capitals serve as fruitful ground for the child's cultural capital development. When the first interaction with culture occurs throughout adolescence or maturity, social occasions are more likely to be the catalyst. Whether the first encounter with culture occurs in childhood or maturity, cultural involvement is a process, and as such, its development or promotion must be associated with positive results and be suited to the individual's age, interests, and life experience. Early exposure to culture increases the likelihood of future cultural participation. Participation in the arts can take a variety of forms, based on the opportunities available, practical concerns (such as cost, availability, and competing demands on their time), and social networks that influence an individual's decision over how to invest time. At some point, though, the individual begins to consider the arts and culture as an integral part of his or her identity – similarly to how individuals view their hobbies or sports (McCarthy et al., 2004, p.11).

Accordingly, the process of cultural participation distinguishes three categories of participants: (i) who rarely, if ever, participates; (ii) occasional participants; (iii) frequent participants. Those with higher cultural knowledge and familiarity – those with higher cultural capital – tend to participate more frequently: repeated participation leads to differences in tastes and growing competences, which in turn encourages further participation. In other words, frequent cultural participation is a process that is dependent not only on initial (positive) gateway experiences with culture, but also on the development of additional successive positive cultural experiences: these not only create a positive attitude toward culture, but also the motivation to return.¹⁰

As cultural participation is a process, it is crucial to comprehend not only the discrete participation decisions, such as whether to participate or not, but also whether and why individuals continue to participate. In addition, the decision to participate in culture involves a complex combination of attitudes, intentions, constraints, and behaviour, as well as feedback between previous experiences and the combination of attitudes and intentions (McCarthy et al., 2004). Participation depends on beliefs about what culture has to offer and on (i) individual factors such as personality traits, personal tastes, and talents; (ii) family factors such as sociodemographic background, resource levels, and early exposure; and (iii) community factors such as the cultural opportunities available in the local area, the nature of schools, and peers' inclinations. The significance of these factors varies throughout a person's lifetime.

Participation in culture is a cumulative process: it entails the accumulation of various forms of capital and is consistent with the process of learning how to learn. In other words, the various components of the learning process only come together when the individual reaches a minimum level of initial investment to build a base of knowledge about culture – through mentoring, feedback, etc. – and to develop the personal skills (capitals) required to apply this knowledge. Once this learning process has begun, even small incremental changes in an individual's level of participation can yield substantial gains (McCarthy et al., 2004).

Past experiences are not the only factors that can influence a frequent participant's participation pattern. An individual's personal circumstances – family situation, education,

¹⁰ To qualify as a positive cultural experience, it must mentally and socially engage the participant and match his or her cognitive abilities. Frequent participants experience culture in numerous mental, emotional, and social dimensions.

earnings, time constraints, place of residence, and job – also change over the course of a lifetime (McCarthy, 2004). All of these modifications influence the distribution of participants along the continuum between engagement and disengagement. Digitalization plays a significant role along this continuum because it raises the issue of the complementarity of digital cultural goods and services and enables the analysis of barriers and alternative forms of cultural participation.

The socio-demographic characteristics associated with cultural non-participation have been extensively analysed in the literature, despite the fact that it is difficult to capture informal cultural expressions that could be extremely popular among communities, and which remain beyond official measurement: the risk is to consider non-participants those who engage in non-official forms of culture. Inactive individuals, or cultural non-participants, typically have low levels of education, occupational status, and income, are higher than the other groups, and reside predominantly in rural areas (Weingartner and Rössel, 2019). Suárez-Fernández et al. (2019) found that individuals with a higher level of education have a significantly lower likelihood of being non-cultural participants. In Europe, where the effects of age and gender are weaker and less consistent across nations, education and income have strikingly similar positive effects on cultural participation (Falk and Katz-Gerro, 2015).

Certain countries implement policies that (i) heavily fund art and culture in order to decrease prices and try to reduce the entrance barrier to cultural participation through lower prices; (ii) increase early socialisation with the arts in elementary school in order to weaken the binomial higher education high cultural participation. In terms of cultural participation, educational policies are perhaps quite as essential as cultural policies (Coulangeon, 2005). The purpose of the policy is to broaden the public's access to culture regardless of barriers based on income or education (Falk and Katz-Gerro, 2015). The counterbalance to these policies is the funding of niche cultural activities that are primarily consumed by a small portion of the population with higher levels of education and income, in the belief that fine arts create benefits that are not limited to those who attend, but are public in nature (O'Hagan, 2017). In addition, contingent valuation studies have demonstrated that nonparticipants in the arts and heritage are willing to pay something to provide these facilities, either to ensure that they exist for others or as a future consumption option for themselves (Towse and Navarrete, 2020). Despite

this conviction, it appears that a shift in emphasis from so-called highbrow to lowbrow activities may assist in responding more effectively to social challenges (Toepoel, 2011).

In general, economic and cultural capitals or resources appear to influence cultural participation. When culture is (perceived to be) a luxury good, excessively low income or excessively high prices affect cultural participation. Similarly, and most importantly, education appears to be a prerequisite for developing an interest in culture. Solving the dilemma of whether the solution is to provide equal access to culture or to fund cultural activities, especially those freely demanded by people, is difficult. In any case, governments have potential to facilitate cultural participation (Suárez-Fernández, 2020). Important is achieving a true democratisation of cultural participation, which entails disseminating major cultural works to an audience that does not have ready access to them, due to a lack of financial means or education-based knowledge (Evrard, 1997), and cultivating the levels of capitals they hold. The process of democratisation requires granting access to those who do not participate in culture, rather than expanding the cultural participation of those who already participate. In other words, in light of the numerous advantages afforded by cultural participation, we should question whether everyone must participate and whether participation should be regarded as a human right, which reflects a fundamental human need and establishes a minimum standard without which people cannot live with dignity. In fact, participation may also serve as a tool for social stratification. To promote the general development of capitals and limit the occurrence of social inequalities, we should ask ourselves if cultural participation should not be guaranteed in the same manner as education, a fundamental human right requiring free access, and view cultural policies as (important as) educational policies. In actuality, the wide variety of cultural benefits can only be obtained through a process of sustained engagement (McCarthy et al., 2004), which could be encouraged by policies that grant and provide free and universal access to culture. In this way, cultural participation could contribute to the full development of various forms of capital that enrich the lives of individuals.

1.7 Profiling cultural participants: from *what* to *how*

As stated previously, analysing sociodemographic characteristics of cultural participation is comparable to profiling cultural participants in some respects. The thesis by Pierre Bourdieu (1984) on the formation of tastes in relation to cultural participation and class discrimination investigates the connections between class relations and differences in the modes of operation of social actors in terms of cultural tastes and aesthetical orientations (Jarness, 2015). Bourdieu has helped paving the way for numerous sociological and economic analyses of cultural participation. According to him, the distinction between highbrow and lowbrow cultural consumption is tied to social positions through class-specific tastes (*habitus*). Literature attempts to link particular socio-demographic characteristics with particular cultural products have sprouted from this theory. However, the early introduction of the concept of omnivorousness in cultural consumption has addressed this principle, at least in terms of the tendency of the upper classes to consume a wide variety of cultural goods and services (Peterson, 1992; Peterson and Kern, 1996; Peterson 2005).

One of the greatest contributions of the cultural omnivore phenomenon is that it forces and shifts the emphasis from the *what* of cultural participation to the more significant concept of the *how*. Focusing on what type of culture is consumed by which socio-demographic segment of the population may seem unfounded when compared to how socio-demographically defined individuals consume culture regardless of their brows. Keeping in mind the significant stratifying dynamics in lifestyle differentiation, Jarness (2015) identifies four modes of cultural consumption: (i) the intellectual mode; (ii) the luxurious mode; (iii) the educational mode; and (iv) the practical mode. These four models shift the emphasis from the *what* to the *how* of cultural participation and relate cultural participation to different types of capitals.

Intellectual consumption is characterised primarily by an end-in-itself orientation toward cultural goods, implying an aestheticizing celebration of art for its own sake. Intellectual mode of consumption profiles are characterised by a high volume of cultural capitals, a very high level of tertiary education (typically in the arts and humanities), and well-educated backgrounds. They are typically middle-to-upper class and employed in the public sector.

Luxurious mode of consumption is characterised by an inclination to appropriate expensive material goods as an end in itself: in other words, hedonists. Those whose profiles are characterised by a lavish mode of consumption have a high level of economic capital and are educated in the sciences but not the humanities. They typically work in the private sector and are of upper class.

Those who appropriate goods for educational purposes typically express a keen interest in cultural goods and a lack of interest in material goods. They exhibit a degree of benevolence toward the preferences of others and revered, moral cultural forms. They primarily utilise culture as a source of autonomy (both elite and popular culture). Educational participants possess a moderate to high level of educational capital, earn average wages, and are employed in both the private and public sectors. They are typically impoverished but do not belong to the working class.

The practical mode of consumption is characterised by moderate consumption of cultural goods and services, favouring immediately comprehensible and meaningful forms of participation. They are more interested in gaining knowledge with practical or technical application. Those whose cultural consumption is characterised by a pragmatic approach have low educational and economic capital profiles and are members of the working class.

Moreover, the transition from the *what* to the *how* of cultural participation contributes to demonstrate the significance of diverse forms of capital in determining cultural participation. As we have seen, both the information theory and the status theory posit capitals as the driving forces of cultural participation: the former, human and cultural capital, and the latter, social capital. In other words, these theories view cultural participation as an expression of the capitals possessed by individuals. The four modes of cultural consumption correspond to four types of capital whose development individuals regard as crucial: (i) cultural capital for the intellectual mode; (ii) social capital for the luxurious mode; (iii) human capital for the educational mode; (iv) technical or practical capital for the practical mode. The manner in which individuals approach culture reflects the type of capital they primarily value and/or seek to cultivate.

No matter the domains, genres, or broad categories, a mode of consumption refers to how culture is consumed. The omnivorousness thesis does not rule out the possibility of cultural participant profiling (López Sintas and García Ivarez, 2002; Katz-Gerro, 2004). In other words,

the profiling of cultural participants is based on the method by which socio-demographically distinct groups approach culture, as opposed to their tastes or appearance. Given the rise of omnivores, sociocultural patterns of cultural participation seem to exhibit two significant remodulations: (i) sociocultural profiling is a matter of how and not what in cultural participation; (ii) the distinction between highbrow and lowbrow cultural activities is always less a question of social demarcation and more a matter of a prejudicial laddering of culture – and older age (Scherger, 2009; Weingartner and Rössel, 2019). A necessary step in the analysis of cultural participation could then be to consider patterns of lifestyle (the how) instead of clusters of correlated – according to who? – cultural products (the what).

In conclusion, it is essential to remember that a large and growing body of sociological research suggests that the stratifying effect of lifestyle differences is diminishing (Jarness, 2015).

1.8 Participation in Heritage

Falk and Katz-Gerro (2015) have conducted an extensive analysis of participation in cultural heritage, estimating the impact of demographic characteristics (age, gender, country of origin) and socioeconomic factors (education, income, labour market status, occupation) on a sample of 350,000 adults in 24 EU countries using data from 2006.

In the past, the direction of the influence socioeconomic and demographic characteristics has on the decision to visit museums and historical sites, as well as the frequency of visits, was widely accepted. In Europe, women, individuals aged 16-44, those living in households with a high per capita income, the more educated, part-time workers, school-age and university students, and adults living in large urban agglomerations have both higher visit rates and higher numbers of visits to cultural heritage sites (Falk and Katz-Gerro, 2015). In contrast, unemployed individuals, those aged 65 years or more, and retired or disabled individuals are less likely to visit or visit less frequently. With regards to the field of occupation creative workers (Bille, 2010) and those in the fields of business, social science and writing participate more compared

to those in the field of physics, mathematics, engineering and life science (Falk and Katz-Gerro, 2015). Less than half of those employed in basic occupations participate.

With regards to barrier to participation, lack of time is the most common declared one to access cultural heritage sites or activities, followed by cost and lack of interest (European Commission, 2017): as we have seen the same barriers have been identified for general cultural participation. Accordingly, a comparison between education and income shows that education is slightly more important than household income in increasing both the likelihood and frequency of visits to cultural sites (Falk and Katz-Gerro, 2015). The same has been observed for general cultural participation. This is an important element because it may suggest that countries where the education and income levels are less prominent in enabling cultural participation are those who have been able to reduce social disparities in cultural engagement. Unfortunately, those from the least deprived neighbourhoods are twice as likely as those from the most deprived to visit museums (Evans, 2016). For museums and galleries, occupational status appears not to be significant in distinguishing frequent attendance. The relationships with educational attainment and having been taken as a child, on the contrary, are still significant though less strongly predictive of frequent attendance, compared to the prediction of attendance per se (Brook, 2016). Moreover, museum visits have been highly correlated with attendance in all performing art forms (Borgonovi, 2004). This could prove the validity of the cultural capital stacking and cultural taste formation theories in relation to cultural participation.

Regarding participation in heritage (both physical and digital) the Special Eurobarometer 466 (European Commission, 2017) provides updated and useful information and element of novelty, in part in contrast with previous findings in literature. Over fifty percent of Europeans have utilised the internet for heritage-related purposes. The younger generation surveyed (partially Generation Z and partially late Millennials) and those who remained in school longer are the most likely to have used the internet for cultural heritage purposes. This may suggest that education and age are the two most important socio-demographic factors to consider when analysing digitally related cultural consumption. One possible explanation could be found in high cultural capital levels and high digital capital levels related to education and age. Digital nativity plays an important role for the latter. In general, northern and wealthier European

nations have higher levels of cultural heritage engagement. Moreover, the youngest respondents (aged 15-24) at European level are most likely to participate in all cultural heritage activities compared to other age groups. The same holds true for those who remained in school longer: they have consistently more positive attitudes toward cultural heritage and greater personal involvement. As has been repeatedly emphasised throughout this dissertation, educational attainment appears to be the best predictor of cultural participation, and this trend is also confirmed for participation in cultural heritage activities. Regarding digital cultural participation and digital participation associated with heritage, however, younger age appears to be an additional significant predictor of participation.

As seen, cultural participation has been extensively analysed, and the profile of cultural participants is not always simple to disentangle. The same holds true for heritage participation, particularly digital heritage participation. In spite of this, general cultural participation and participation in heritage exhibit similar socio-demographic characteristics that influence their profiles. Higher levels of education, higher levels of income, spatial proximity, early socialisation, part-time employment, and student status are all favourable to both types of participation. In addition, both cultural and heritage participation reveal a younger, more feminised population as well as a positive correlation with technologies. There are a variety of explanations for this similarity: (i) the phenomenon of cultural omnivores. Increasingly, cultural participation is less about specific cultural activities and more about the incorporation of diverse cultural forms by individuals. In other words, a cultural participant consumes all forms of culture, including cultural heritage; (ii) participants are differentiated between engagement and disengagement. In other words, participants' profiles are comparable to those of non-participants, while the greatest differences exist between participants and non-participants; (iii) participation is a matter of capitals. When individuals begin to participate, they amass additional capitals that facilitate further participation. In other words, cultural participation activates a virtuous circle, and participants in one activity may be compelled to try other cultural activities, thereby becoming omnivores; (iv) cultural participation is a matter of *how* rather than *what*. In other words, individuals participate in culture in a precise modality in order to develop a precise kind of capital: less importance is given to the type of cultural activity; (v) research over time has often focused on so-called highbrow activities and the data

collected on general cultural participation refer to these kinds of activities or to cultural heritage related ones.

This result does not imply that all cultural participants are the same or that all cultural activities are participated in by the same types of individuals, but that cultural participants, as such, regardless of the activity they engage in, exhibit similar characteristics, likely because they had to develop a certain amount of cultural capital to become *early users/participants*.

Despite these similarities and trends, and despite the abundance of research on cultural participation, there are still some unexplored aspects of participation. For example, small attention has been given to cultural participation in heritage – both physical and digital – with regards to age and/or digital capital as socio-demographic determinants. Regarding age, literature has produced contradictory findings (Cuadrado and Frasquet, 1999; Scherger, 2009; Muñiz et al., 2014; Willekens and Lievens, 2014; Falk and Katz-Gerrer, 2015). Even though participants choices are more sophisticated in accounting for the roles of both past and future consumption in determining current participation choices (Castiglione and Infante, 2015) it seems relevant now to deepen the concept of capital and its relationship with cultural participation.

2. Capitals and cultural participation

Since more than two hundred years ago, the interpretation of production processes in economics has been based on the concept of capital. A durable good is one that produces an ongoing stream of services and can be combined with other inputs, such as labour, to produce additional goods and services. Physical or produced capital, which consists of plant and equipment, machines, structures, and other similar items, was the original and longest-standing interpretation of capital based on this definition. In the second half of the 20th century, a new type of capital, known as human capital, was discovered. Human capital refers

to the productive qualities that people possess by nature. Even more recently, the concept of capital has been extended from the realm of economics into the realms of art and culture in an effort to recognise the unique qualities of works of art and other cultural goods as capital assets and to capture the ways in which these assets contribute to the production of additional cultural products and services. Consequently, the economic concept of cultural capital was created (Throsby, 2020).

Therefore, the scientific community has focused a great deal of attention over the centuries on the concept of capital, which originated as headcounts of cattle and as a synonym for wealth (Butkova, 2020). Then, economists shifted this term's meaning and gradually broadened its application. Additionally, sociologists have contributed to its expansion of meaning (Hodgson, 2014).

This certainly did not occur without consequences. Words carry their own ideologies. As capital is ontologically associated with monetary phenomena, there is a risk that all political, cultural, social, cognitive, and ecological phenomena can be valued and traded in monetary terms and invested as if they were financial capital.¹¹ On the other hand, the term capital in its various declinations, can be interpreted as a tool to understand the reality through economics categories. Treating capital as stock or reserve of anything of social or economic significance that contributes to the production of goods or services, implies being aware of the value which every asset (natural, human, social, cultural, etc.) brings along.

Acknowledging the risk of economisation of using different configurations of the term capital, we nevertheless opt for a use of its facets because it can enable us to understand a phenomenon such as cultural participation. Human and cultural capital have been utilised in the literature to explain cultural participation. In this study, we aim to determine whether digital capital is also associated with cultural participation.

In light of this, the following paragraphs will examine the various forms of capital that can be associated with cultural participation.

¹¹ See Hodgson (2014) for a more comprehensive analysis of this topic.

2.1 Human Capital

Adam Smith's contribution to the definition of the term capital was seminal. He identified capital as physical assets. Additionally, Smith associated the concept of capital with that of human capabilities. According to Hodgson (2014), in *The Nature and Causes of the Wealth of Nations* Smith defined fixed capital as revenue or profit that does not circulate or change hands, which includes machines, buildings, land, and acquired and useful skills. The acquisition of these abilities, during education, study or apprenticeship, has a cost and turns fixed capital into another type of capital which is realised within the person, and which is useful to create value. Talents and innate abilities (Laroche et al., 1999) are part of a person's fortune – asset – as well as the fortune of the society to which this person belongs. Smith considered the dexterity of a workman in the same light as a machine or instrument of trade which facilitates labour. In other words, Smith applied the concept of capital to both people and objects.¹²

As for the literature, there are numerous ways of understanding human capital. The one that is most relevant to this study is the one related to education, since education is, as anticipated, a significant factor in cultural participation. In measuring human capital, which is an expression of education and training, economists attempt to gauge the effect of education on economic output. Accordingly, the concept of human capital suggests that the society derives economic benefits from investments in people skills and knowledge and the prime human capital

¹² To be more specific, the first encounter of the term human capital is not found in Smith. According to Hodgson (2014) the first usage of the term refers to slaves in the nineteenth century. In 1897 Fisher proposed to consider all factors of production, including machines, land, and labour as capital. With Theodore W. Schultz (1960) and Gary Becker (1964) the term human capital became commonplace as a factor of production. Accordingly, the economists started to consider human capital as an input in production functions, and to correlate it to production outputs. More specifically, Schultz (1961) classified skills and knowledge that people acquire as a form of human capital and this can be applied to education as well. The term human capital is widely adopted nowadays. The OECD (2001, p.2) expanded its definition to “the knowledge, skills, competencies, and attributes embodied in individuals that facilitate the creation of personal, social and economic well-being”.

investment for empirical evidence is education.^{13 14} In this paper, we refer to education not as an economic investment, but as an approximation of human capital associated with individuals' knowledge and cognitive abilities.

2.1.1 A multi-disciplinary topic

Human capital has been studied in numerous fields, such as business and management, strategy, entrepreneurship, education, economics, psychology, sociology, and human resource management. According to Haq (2016), despite the fact that different perspectives from different disciplines offer a variety of interpretations of human capital, they offer overlapping and sometimes potentially confusing explanations, resulting in unwarranted polarisation

¹³ In the literature on human capital theory, various types and methods of education are distinguished. There is formal education at the primary, secondary, and higher levels, informal education at home and at work, on-the-job training and apprenticeships, and secondary and higher levels of specialised vocational education. The benefits of education include improvements in health and quality of life, the ability to participate in democratic and legal life, and the pursuit of egalitarian, fraternal, and libertarian values at both the private and social levels (Sweetland, 1996). Since each of these benefits is difficult to measure quantitatively, economic growth has become the benefit of choice for empirical analysis (Woodhall, 1987), and human capital theory has evolved into a subfield of economics focusing on education. According to Blaug (1976), the field of human capital theory was formally established in 1960, despite the fact that significant research had been conducted in the preceding decade: for a reconstruction, see Sweetland (1996). In general, each of the benchmark studies indicates that education, as a particular form of human capital investment, yields economic returns. Individual and national economic growth results from pursuit of education. It must be noted that this correlation has a disadvantage. In actuality, the educational system is under pressure, in the sense that educators and the system itself are expected to cultivate job skills and productive economic participation. Too frequently, however, public opinion swells to exaggerate the economic purpose of education, particularly during sustained economic downturns, in order to unfairly scrutinise educators, the education system, and education policies on the basis of economic rather than educational significance (Sweetland, 1996).

¹⁴ While it is true that the effects of education extend beyond the economic realm, the components of human capital are not limited to those of education. In reality, health also influences human capital. Education and health are the two pillars of human capital. Yet, the majority of research equate human capital only with education, which may not only underestimate the impact of human capital but also inflate the significance of education by attributing the influence of other kinds of human capital such as health to education (Wang and Liu, 2016). In fact, health capital is an important component of human capital, and its significance is reflected by the following: (i) healthy people can work longer hours, and they are more abundant and stronger in physical, mental or cognitive abilities, which could directly increase the labour productivity of the family and the market; (ii) healthy people can enjoy a longer life, and they are more motivated to invest in their education; and (iii) a healthier population means a lower mortality rate, which reduces the burden of disease on the economy (Wang and Liu, 2016).

between and across disciplines. One possible definition of human capital is the aggregate of an individual's knowledge, skills, abilities, and other characteristics, such as state of health or common beliefs (Ployhart and Moliterno, 2011). Another possible definition refers to the physical, intellectual, social, and reputational assets that individuals directly contribute to an organisation (DeNisi et al., 2003).¹⁵

To simplify, human capital can be divided into (i) individual level human capital in the form of education and training as a result of individual efforts; and (ii) unit-level human capital, which refers to the capacity of human resources to acquire firm-specific skills through learn-by-doing, thereby enhancing the firm's performance (Haq, 2016). Individual level perspective is of interest for the purposes of this investigation. In general, it appears that the premise of human capital theory is that those with higher levels of human capital are better off economically and socially than those with lower/poorer levels of human capital (Becker, 1962; Blaug, 1976). This also applies to cultural participation, as was anticipated.

Economists typically use monetary and economic-oriented indicators to measure human capital, as evidence suggests that individuals with higher levels of general human capital are more likely to earn higher wages on the job market than those with lower levels of human capital (Hitt et al., 2001). Social scientists argue that, in addition to economic variables, social returns must be given equal weight when determining the value of human capital; they tend to use cognitive variables (Ployhart and Moliterno, 2011).

Technological changes have further developed the concept of human capital. Accordingly, they have boosted learning possibilities and consequently human capital development: knowledge has thus become even more crucial in our society. However, this is an old topic: Weber (1968) stated that where bureaucracy exists, it is structured on the basis of knowledge as opposed to power alone. If we compare the concept of knowledge to that of human capital, we can see how the latter can be defined as a strategic factor in production, as it represents the cognitive competencies, skills, relational behaviour, and knowledge of individuals that increase both productive and social output (Schuller, 2000). This approach to defining human capital, which takes cognitive abilities into account, satisfies our need to correlate human capital with cultural

¹⁵ This concept satisfies the needs of business management and human resource management disciplines, as they equate an individual's human capital as a significant determinant in organisations' productivity.

participation, since, according to the information theory, participation rates are dependent on a participant's capacity to comprehend cultural content, which is correlated with their level of education.

2.1.2 How to measure human capital?

By definition, human capital is a complex concept; it has many dimensions and can be acquired in various ways – at home, at school, at work, and so on. Clearly, human capital is intangible (Laroche et al., 1999), the stock of which is not directly observable like that of physical capital. Common approaches to human capital measurement are (i) the cost-based approach;¹⁶ (ii) the income-based approach,¹⁷ and (iii) the education-based approach (Oxley et al., 2008). The

¹⁶ According to Kiker (1966), Engel's "The Value of Man" (1883) introduced the cost-of-production method for measuring human capital. He actually estimated the human capital of the people based on the cost of their upbringing to their parents. This model disregards the time value of money and the social costs of investing in people; consequently, this strategy has been severely criticised (Dagum and Slottje, 2000). Kendrick (1976) and Eisner (1985, 1989) incorporated the cost-based method by estimating the resources invested in the education and other human capital-related sectors. Kendrick (1976) classified human capital investments as tangible, including physical costs, and intangible, including expenditures on health and safety, mobility, education and training, etc. As with other types of capital, however, the demand for human capital, and not its cost of production, determines its value; this renders cross-sectional and temporal comparisons unreliable. Moreover, the cost-based method has a second limitation. Since it is not observable how increases in each type of spending contribute to changes in the human capital stock, it is difficult to differentiate between investment expenditures and consumption expenditures, and researchers may have to arbitrarily allocate household spending between investment and consumption (Oxley et al., 2008). In other words, cost-based measures are sensitive to assumptions regarding the type of spending and the proportion of different household and public expenditures that should be considered human capital investment. Due to the difficulty of separating the consumption effect from the investment effect of human expenditures, the definition of human capital investment is contested (Oxley et al., 2008).

¹⁷ Kiker (1966) attributes the origins of the income-based approach to measuring human capital to Petty's Political Arithmetik (1690). Using a simplistic estimation of the monetary value of a country's labour force, he established this framework. Eventually, according to Kiker (1966), Farr, in Equitable taxation of property (1853), determined the earning capacity as the present value of a person's future earnings minus living expenses, adjusted for deaths using a life table. The underlying principle is to value human capital as the total income that could be generated on the labour market throughout a person's lifetime (Oxley et al., 2008). Various researchers subsequently utilised the income-based approach to estimate the value of human capital to the economy as a whole or to compare it to other forms of capital. For a summary, see Oxley et al. (2008). In general, the income-based approach can be defined as a prospective one since it focuses on expected returns on investments. Contrary to the cost-based

latter is the one we are interested according to the purposes of the present work. It estimates human capital based on proxies such as literacy rates, enrolment rates, dropout rates, repetition rates, average years of schooling and test scores. To capture a country general educational status, researchers tend to use the adult literacy rate. UNESCO (1993) defined it as the portion of the population aged 15 and older who is able to read and write a simple statement on everyday life.¹⁸

Another aggregate mensuration option is the school enrolment rates, namely the number of students enrolled at a given level relative to the population of the age group who, according to national regulation or custom, should be attending school at that level. The ratio is easy: in this way it is possible to measure the current stock of human capital which establishes subsequent stock. In other words, in this way it is measured the current investment in human capital that will be reflected in the stock of human capital sometimes in the future (Oxley et al., 2008).¹⁹ Barro and Lee (1996) and Lee and Barro (2001) considered input indicator such as public educational spending per student, pupil-teacher ratios, salaries of teachers and length of the school year, and such outcome indicators as repetition and dropout rates to measure the quality of the educational system.

approach, which is a retrospective method centred on historical costs, this approach focuses on the future. The prospective approach seeks to evaluate a person's earning power. It values human capital at market prices, since the labour market more or less accounts for many factors, including ability, effort, productivity and education, as well as the institutional and technological structures of the economy (Dagum and Slottje, 2000). (Dagum and Slottje, 2000). This strategy does not lack disadvantages. It is predicated on the premise that differences in wages correspond to differences in productivity. However, this is not always the case: trade unions may be able to negotiate a higher wage for their members, or real wages may decline during economic recessions. Under such circumstances, income-based measures of human capital will be biased. The sensitivity of these metrics to the discount rate and retirement age is also notable.

¹⁸ However, this measurement is flawed for at least two reasons: (i) the cross-country comparison is limited since given the different definitions of literacy across countries; (ii) literacy rates reflect just a small portion of human capital and do not account for element of education that extend beyond the elementary level. Thus, the contribution of superior skills and knowledge to innovation and productivity is disregarded. According to Judson (2002), literacy rates may be a good proxy for human capital in countries with low levels of education, but not in countries with universal primary education.

¹⁹ The limitations of this proxy are related to (i) being measures of flows, enrolment rates only capture part of the continuous accumulation of the stock of human capital; (ii) current enrolment rates are indicators of the schooling level of the future, rather than current labour force; (iii) the education of current students may not be fully added to the (future) productive human capital stock because graduates may not partake in the labour force and because investment may partially be wasted through grade repetition and dropouts; (iv) change in the stock of human capital is the difference between the human capital of those who enter and those who exit the labour force, but school enrolment rates take no account of the latter (Oxley et al., 2008).

Another proxy to catch human capital is the average years of schooling. It has the advantage to measure valid stock and to quantify the accumulated educational investment in the current labour force. Wachtel (1997) considers the number of schooling years as an equivalent to cost-based measures of human capital.²⁰ An alternative way to measure the year of schooling has been adopted by the European Commission (2017) as in the Special Eurobarometer 466, in which respondents have been divided by the range of ages in which they have left education (less than 15, between 16 and 19, over 20 and 'still studying').²¹

Lastly, test scores ²² can be employed as proxy of human capital, because they measure educational outcome, cognitive skills, and ensure international comparability.

To sum up, education-based measures of human capital, including literacy rates, school enrolment rates and average years of schooling, are easy to quantify and have good international data coverage. These measures give a rough idea of how much human capital a country – and its individuals – behold. However, they have been criticised for not adequately reflecting key aspects of human capital and for emphasising quantity over quality. By being based upon some crude proxy for education so far experienced, these measures neither

²⁰ Years of schooling as a proxy for measuring human capital has several limitations: (i) it does not account for the diminishing returns of education. In reality, the costs and returns of education vary significantly between levels. One year year of schooling does not increase human capital by the same amount: a person with ten years of schooling does not have ten times the amount of human capital as a person with only one year of schooling; (ii) it does not take into account the quality of education, which can vary significantly across countries, within countries, and over time; (iii) it assumes that workers with the same years of schooling are perfect substitutes for each other; (iv) it is debatable whether or not schooling increases productivity; (v) years of schooling ignores all human capital elements other than formal schooling, such as health, on-the-job training, informal schooling, and work experience. This measure also treats uneducated individuals as if they have no human capital, despite the fact that they are economically valuable as long as they work. (Oxley et al., 2008).

²¹ There are at least three limitations in this approach since i) it does not consider biases generated by dropouts/repeaters which accumulate years of schooling and fall into a subsequent age range without actually accumulating human capital; (ii) the younger respondents who are still studying could actually belong to one of the other categories (or age ranges) in the future: in this way the prospective impact of education on productivity is biased; (iii) within the still studying category may fall those who are studying for a bachelor's degree (perhaps in the natural post-high school pathway) and those who are majoring in their 30s with a PhD or MA. The knowledge and skills acquired during these paths are pretty different and so it is the derived accumulation of human capital. For these reasons, the approach of the age of the end of education does not seem satisfying when trying to catch human capital. For the sake of completeness, it must be pointed out that the Special Eurobarometer 466 does not explicitly refers to human capital when proposing this indicator.

²² Despite the similarity in the average number of years spent in school, there is a large disparity between countries' literacy rates. In addition, there are numerous quality indicators that do not correlate with one another and sometimes produce contradictory results.

capture the richness of knowledge embodied in humans nor quantify the flow of future benefits of the knowledge accrued (Oxley et al., 2008). In general, as we have pointed out, no single approach to measure human capital comes free of limitations, so some researchers have proposed to combine different methods. For example, Tao and Stinson (1997) integrated the cost and income methods. But before even considering the limitations of the different methods, one must keep in mind what are the reasons behind the measurement.

For the purposes of this research, since we want to understand how levels of human capital affect levels of cultural participation, an education-based approach seems to be the most reasonable and suitable choice. For this reason, to measure the levels of human capital, we have decided to use the official schooling level and we have divided the levels of human capital in three categories related to three educational level: up to middle school, up to high school and tertiary education.²³ Regardless various conceptual limitations, levels of education in the literature have consistently proved to be good predictors of cultural participation. The other way around, an education-based approach seems to be a good compromise to measure levels of human capital, especially if one wants to detect aspects related to participation in community and in social and political affairs, of which cultural participation is part.

²³ We are aware of the limitations this approach entails and do not intend to imply that human capital levels are solely dependent on formal education levels. We are aware that some skills and types of knowledge are acquired outside of formal education, such as informal education at home and at work, on-the-job training, and apprenticeships. There are, for instance, types of knowledge and skills that are more valuable on the labour market than those provided by formal education: levels of formal education would be partially ineffective in relating economic growth to human capital. Another limitation of accounting for completed level of education is that it does not take into account the granularity of education: those who are enrolled in high school but have not yet graduated are considered to possess the same level of human capital as those who stopped at the middle school level, despite possessing three or four years of additional education. In addition, combining all levels of tertiary education into a single tier does not account for the gradual development of specialised levels of knowledge and skills throughout tertiary education.

2.2 Cultural Capital

In the present paragraph we are going to analyse cultural capital, which is strictly related to the main topic of this work, namely cultural participation, probably more than any other type of capital. Given its interconnectedness with cultural and societal issues, cultural capital has attracted the interest of economists and sociologists alike. Due to the fact that cultural capital is defined in two very distinct ways in economics and sociology, we will first examine the economic perspective and then the sociological one, elaborating on Bourdieu's perspective, which has shaped the history and development of the term.

2.2.1 The economics perspective

As we have underlined the concept of capital has been fundamental in the economic theory in the last three centuries. The doctrine began with physical capital, which referred to manufacturing and material assets, and continued with human capital, which is a characteristic related to human productivity. In the second half of the twentieth century, the concept of capital in economics was extended into the field of art and culture in an effort to recognise the distinctive characteristics of artworks and other cultural goods as capital assets and to capture the ways in which these assets contribute, in conjunction with other inputs, to the production of additional cultural goods and services. Thus, the economic concept of cultural capital has taken shape (Throsby, 1997; Throsby 2020). The concept of cultural capital can be associated to that of cultural goods which happen to be capital goods. However, it is necessary to consider the concept of value, or better, values. Frequently, when referring to cultural goods, the economic value is incapable of representing the full range of complexity of that good's cultural value. Cultural value is a multidimensional concept, as an asset that embodies, stores, or generates cultural value apart from any monetary value it may possess (Throsby, 2020). In other words, the cultural capital is a concept which help to theorise the value of cultural goods

regardless their economic value. Cultural capital can exist in two forms: tangible, such as artworks, artefacts, and buildings, and intangible, which refers to (i) artwork that exist in the pure form of public goods, such as music and literature (before being recorded); (ii) traditions, values, and beliefs of a cultural group; and (iii) cultural networks and relationships that support human activities.

To condense, according to the economic perspective, cultural capital is a stock of capital held by economic agents such as individuals, cities, regions, countries, etc.

2.2.2 The sociological perspective: Bourdieu's cultural capital

The first introduction of the concept of cultural capital in the sociology of education analysis was undertaken in the early 1960s and published by Bourdieu in collaboration with Jean-Claude Passeron in *Les étudiants et leurs études* (1964a) and *Les Héritiers* (1964b) (Robbins, 2005). Bourdieu's thinking was always characterized by a duality between what one might call natural, familial, domestic, or traditional culture on the one hand and artificial, acquired, constructed or public culture on the other (Robbins, 2005).²⁴ Bourdieu's thinking was always characterised by a duality between natural, familial, domestic, or traditional culture on the one hand, and artificial, acquired, constructed, or public culture on the other (Robbins, 2005). Accordingly, cultural capital is a tool for the social appropriation of symbolic wealth, which includes the level of education, intelligence, demeanour, and preferences, among others.

²⁴ Bourdieu was interested in understanding how far cultural tastes are biologically determined or how far individuals inherit a natural culture which circumscribes their choices of artificial cultural products or symbols. Bourdieu was also interested in objective culture in order to comprehend how individuals employ it to manage their cultural adaptations (Robbins, 2005). In fact, Bourdieu and Passeron (1964a) believed that social origins are responsible not only for obvious living conditions, but also for cultural practises and attitudes toward scholastic and extra scholastic culture. In their perspective, cultural differences consolidate or even constitute social differences. In highlighting educational processes as instruments of cultural differentiation, Bourdieu and Passeron (1964a, 1964b) were already indicating that the social situation is not intrinsically social – if by this we mean socio-economically class determined – but rather a context of constant accultural affectivity, constant oscillation between natural and acquired cultures, within generations and inter-generationally, wherein one person's natural culture encounters a different person's acquired culture (Robbins, 2005).

Furthermore, Bourdieu identified three distinct types of cultural capital: (i) embodied, which refers to provisions and practises – i.e., tastes and cultural participation; (ii) institutionalised, which relates to the level of education; and (iii) objectified, which includes the ownership of cultural goods (Segre and Morelli, 2021). Since it is directly related to cultural participation, embodied cultural capital is of particular interest to the present investigation. Specifically, it refers to an individual's accumulation of cultural capital in the form of culture. It involves time-consuming accumulation, inculcation, and assimilation processes in which the individual must personally invest. Accordingly cultural capital is a tool for social appropriation of symbolic wealth, which comprises the education level, intellect, manner, preferences, etc.

The embodied cultural capital is the one which pertains the interest of the present investigation, since it is directly related to cultural participation. More precisely it refers to the accumulation of cultural capital in the form of culture behold by an individual. It involves a proper work of accumulation, inculcation and assimilation which is time consuming and must be invested personally by the individual. Embodied cultural capital is a form of wealth which is converted into an integral part of the person – the habitus –²⁵ but which cannot be purchased or exchanged. Cultural capital is linked to a person's biological singularity (biological capacity, memory, etc.) and environmental characteristics (social class, region of provenance, etc.) and combines the prestige of innate property with the merits of acquisition. How does cultural capital is developed and stacked, however? It depends on a transmission process deriving from the cultural capital embodied by the entire family and the cultural capital present in all cultural goods, which exert an educative effect simply by existing. In other words, the accumulation of cultural capital depends on family exposure factors (early exposure to the arts) and the acquisition of intrinsically educative cultural assets, namely cultural participation.

²⁵ Bourdieu's (1985) concept of habitus, which is defined as common schemes of perception, conception, and action acquired through daily social interactions (Ignatow and Robinson, 2017), is related to the concept of cultural capital and is responsible for both the convertibility of different forms of capital and the social reproduction of inequalities. Bourdieu uses the concept of habitus to explain how cultural norms and values frequently determine motivation and stimuli. Thus, preferences and tastes are contingent upon these cultural norms and values. Becker (1996) defines personal capital as the stock of all past personal experiences that affect an individual's present and future preferences, thereby making participation in particular activities more worthwhile for them. Personal capital differs from cultural capital but exhibits a similar accumulation and stacking process.

Even though Bourdieu initially created cultural capital to explain the unequal scholastic achievement of children from different social classes by relating academic achievement to the distribution of cultural capital between the classes, it has since become a useful concept for conceptualising the measurement of a variety of phenomena, including cultural participation.

2.2.3 How to measure cultural capital?

As we have seen, the economic perspective on cultural capital relates to the cultural value and stock held by economic agents in an economic environment, and its closest point of contact with the sociological definition of cultural capital is the objectified cultural capital. The sociological perspective on cultural capital, on the other hand, emphasises the importance of exposure to cultural contents, values, and norms through accumulation, inculcation, and assimilation. This concept of accumulation and stockpiling, which is intrinsic to the concept of capital, represents the point of contact between cultural capital according to economic and sociological disciplines.

Given the multidisciplinary nature of cultural capital, an unambiguous way of measuring it would not be imaginable. Nonetheless, it is possible to recall two ways from the literature that specifically refer to this process of cultural skills and knowledge accumulation, which are considered substitutes for cultural capital. The first directly derives from Bourdieu (Bourdieu, 1979; McCarthy, 2004) and refers to the measurement of artistic knowledge – influenced by educational and familial background. The second is an intra-sector accumulation process derived from participation – directly pointing through the phenomenon of cultural omnivorousness (Peterson, 1992; Peterson and Kern, 1996; Peterson 2005; de Vries and Reeves, 2021).

As we will see in the following section, the two methods of measuring cultural capital described above correspond specifically to the methods we selected to quantify cultural capital for the

current project. Nonetheless, there are a variety of cultural capital measurement variations, which have multiplied with the advent of digital technologies. Paino and Renzulli (2013) expanded the culturally significant forms of capital by incorporating the digital dimension of cultural capital. With the advent of digital technologies, it has become necessary to conceptualise a new type of capital, digital capital, which will be the subject of the next section.

2.3 Digital Capital

Digital technologies are ubiquitous in modern society. From the creation of the first computers (mainframe), client servers and personal computers, Web 1.0 and e-commerce, to the upgraded technologies of the 21st century, such as Web 2.0 and data storage systems (cloud), mobile data, visualisations, Big data and Analytics, Internet of Things (IoT), and, most recently, artificial intelligence, these new technologies began to change the world in the 1950s (Grigorescu et al., 2021). Web 2.0 refers to the fundamental technological advancements that enable users to publish their own content on a large scale using social software for storing and disseminating documents, photographs, and videos, etc (Redondo, 2015). Humans need to adapt to these technological changes through the development and adaptation of their human capital, which is essential for both the creation and development of new technologies and the adaptation of users to their new roles within these technologies. Moreover, humans need to acquire new competencies consisting of technical skills generated by human-machine interaction and behavioural transformations comprising new capabilities on interhuman relationships in virtual space, communication skills, and ethical and responsibility competencies. Digital competencies involve the critical and assured use of Information Society Technologies for work, recreation, and communication (Grigorescu et al., 2021). The concept of human capital in relation to digital technologies transcends the mere possession of digital skills required by the digital society. It entails the observance of a set of rules, norms, and values that guarantee the responsible application of these competencies by individuals. The objective is to locate, access, store, produce, and exchange information via the Internet and to communicate and participate in collaborative networks (European Commission, 2021b).

To condense, the interaction between humans and technology necessitates the development, and in a sense the transformation and adaptation, of the human capital possessed by individuals. However, it must be emphasised that while human capital is responsible for productive interaction with technologies according to some lines of research, other lines of research have emphasised the need for the emergence of a more specific type of capital related to interaction with technologies, namely digital capital. Without denying that a high level of human capital is associated with a profitable relationship with technology, we wish to investigate the concept of digital capital.

2.3.1 The definition of digital capital

Individuals in our digital environment need to be able to convert digital resources into everyday resources (social, human, cultural, etc.) in order to maximise the technology's benefits. Or at least, this is how a perfect democratic world would operate, allowing everyone to completely express themselves and interact in both the actual and digital worlds. From this perspective, the growth of digital capital, which refers to the conditions that affect how individuals access, utilise, and interact with digital technology (Park, 2017), is a fundamental aspect of the present. In other words, digital capital is the store of information and skills connected to the interaction with technology that enables individuals to leverage digital technologies in order to maximise the contents, knowledge, and opportunities that are disseminated by digital technologies.

To be more precise, digital capital can be comprehended in two primary ways. On the one hand, there is a conception of digital capital that focuses on the creation or ownership of infrastructures and technology, or digital capital as a material asset. On the other side, there is a definition of digital capital that can be classified as digital human capital, which refers more accurately to the human skills and capacity of technology interaction. If we were to utilise Bordieuan terminology, we would refer to objectified digital capital and embodied digital capital, respectively.

Digital capital can therefore be defined as the process of accumulating digital competencies (information, communication, safety, content production, and problem-solving) and digital technology. Digital capital is a set of internalised skill and aptitude (digital competencies) and externalised resources (digital assets) that may be historically accumulated and moved from one arena to another. The degree of digital capital a person holds determines the quality of his or her technologic experience, which can be translated into various types of capital (economic, social, cultural, personal, and political) in the social realm (Ragnedda, 2018). Using Weberian terminology, digital capital is the bridge between the online and offline worlds (Weber, 1949). In addition, digital capital not only enables the efficient exploitation of earlier capitals in the digital domain, but also develops them, hence generating profits in the offline realm. Internet users derive their true benefits from their prior capitals and their interactions with digital capital, both before and after their online experience. Digital capital translates offline actions into digital activities (time spent online, information and knowledge discovered, resources and skills obtained, and types of activities performed, etc.), which are then translated into externally observable social resources (better job, better salary, bigger social network, better knowledge etc.). This capital interacts with every other capital, and the results of these interactions have both digital and social repercussions (Ragnedda, 2018).

We suggest, within the framework of digital cultural participation, that when individuals engage in digital forms of culture, digital capital enables the correct exploitation of the other types of capital (human and cultural) necessary to properly experience and appreciate culture. This allows for the formation of additional cultural capital, which can be leveraged in future offline and online cultural participation. Theoretically, digital capital is vital to the creation and accumulation of cultural capital through involvement in digital cultural activities, which constitutes an asset for future online and offline cultural participation.

As was recently said, digital capital serves as a bridge between the online and offline worlds. In the following paragraph, we would like to emphasise this role by discussing the interaction between digital capital and cultural capital.

2.3.2 The bridging function and the interaction of digital capital with cultural capital

As we have emphasised, it is necessary to quantify and explain the social, economic, political, cultural, and personal effects of varying Internet usage. This is due to the fact that digital capital is intricately interwoven with prior capitals and relies on them to transfer the online experience into the social fabric, thereby changing it into social resources. Consequently, users' capitals and their interactions with digital capital are crucial to both the digital inclusion/exclusion process and the usage of ICTs while transferring the benefits gained online into the social realm (Ragnedda, 2018).

Exclusion from or limited access to the digital sphere, where economic and socially relevant information circulates and where some of the most vital human and social activities take place, is one of the primary causes of social inequality. Evidently, class position, gender, ethnic/racial minority status, and sexual orientation are still the primary causes of social inequalities, but in a digitally enabled society, being excluded from or having limited access to ICTs means lacking the tools necessary to participate and thrive in an information-based society (Servon and Nelson, 2001). Among instance, van Deursen and Helsper's (2015) research demonstrates that socioeconomically privileged citizens derive more real benefits from qualitatively distinct Internet usage. This indicates that individuals who are already socioeconomically privileged not only use the Internet differently than those who are less privileged, but also benefit the most from its use, so perpetuating existing social disparities (Ragnedda, 2018).

The purpose of this study is to determine whether the previously indicated bridge function of digital capital also applies to cultural participation. We argue along this work that a certain level of digital capital is necessary to be included in digital cultural participation, to be fully aware of the circulation of information that occur in the digital realm and to develop further cultural capital in the digital realm. Within this interplay between digital capital and cultural capital, online-acquired resources are turned into social resources that have the potential to produce and reproduce positive outcomes in the lives of individuals. The fundamental concept is the online generation of cultural capital through the mediation of digital capital, which may then

be re-invested in the social domain to generate one or more of the advantages obtained from cultural involvement (McCarthy et al, 2004).

This definition of digital capital suggests that access to and proficiency with ICTs is a necessary but insufficient prerequisite for generating additional types of capital to invest in daily life: persons must own previous capital in order to invest in the digital realm.

Ragnedda (2018) identifies four potential interactions between digital capital and other forms of capital. The optimal circumstance is when a person has both high levels of digital capital and cultural capital. In this instance, the experience through technologies is tangible and valued due to digital capital, whereas the content-specific fruition is valuable due to the appreciation of prior cultural capital. With a high degree of both digital capital and cultural capital, an individual is able to convert the digital experience of culture into value that occurs both online – during the experience's fruition – and offline – for example, the development of further cultural capital. If we want to take this explanation a step further and use the digital museum as an example, a person with high digital and cultural capital will be able to interact with the technological framework – such as VR/AR or the ability to use websites or social media correctly – with ease and without frustration, thanks to the digital capital, and will be able to appreciate the museum's specific cultural content, thanks to the cultural capital behold. In addition, the individual will be able to turn this experience into further cultural capital because digital capital serves as a conduit for transforming digital experiences into assets for daily life, in this case additional cultural capital.

A second possible scenario is when low levels of both cultural capital and digital capital interact. In this situation, digital experiences are frustrating, regardless of the content. Moreover, with insufficient cultural capital it is possible that an individual may be unable to appreciate – thus enjoy – a certain cultural material. In our example of digital museums, those with low levels of digital capital will be unable to interact with the museum's technology and will also be unable to comprehend its cultural content.

When large amounts of cultural capital meet with low levels of digital capital, there is a third conceivable situation. An individual, during his/her lifetime, may have invested his/her resources into developing cultural capital, but he/she may be not interested or capable (lack of skills/time/digital literacy/motivations and purposes to join the online realm) of using the Internet and the technologies to improve his/her life chances. In our example of the digital museum, a person with a high amount of cultural capital would be able to completely

appreciate the museum's cultural content but would lack the digital capital to digitally interact with the information. Consequently, he or she would eschew digital forms of cultural participation, despite being a potential cultural participant.

When low levels of cultural capital interact with high levels of digital capital, a fourth possible scenario develops. In this situation, a person may admire the technological components of the digital museum yet be unable to comprehend its cultural content due to a lack of cultural capital.

Obviously, reality is far more complex, and there are a variety of degrees between these interpretation-framing possibilities (Adams and Sydie, 2001).

Moreover, we do not deny that personal tastes and other circumstances may impact and shape the experience of participants in cultural involvement in (digital) museums. For instance, the precise material conditions of participation may or may not satisfy one's interests and preferences: the user may choose to explore the actual museum experience due to its unique characteristics. However, it is also possible that persons who do not appreciate digital cultural experiences are influenced by their lack of digital capital. In reality, the significance of being able to interact digitally with culture cannot be overstated. In the era of social networks and collaborative knowledge, a negative attitude toward digital cultural involvement implies being a passive consumer of cultural outcomes and having limited abilities to generate new cultural products or contribute to the cultural dialogue on the digital arena (Ragnedda, 2018). The digital experience could also be more stimulating and satisfactory since it could result in positive interactions in which the users become active proponent of cultural outcomes through their capacities to contribute to participatory culture, having high opportunities to contribute to building new knowledge, and accessing different cultural/educative online sources (Ragnedda, 2018).

2.3.3 *How to measure digital capital?*

Having defined digital capital as a bridge capital between the online and offline (Weber, 1949) implies that its measurement could depend on the specific sectorial knowledge the digital technologies allow the individuals to interact with. Nevertheless, a certain level of 58

generalization can be applied to the specific measurement of digital capital, in both its declination as embodied and objectified. When it comes to the embodied digital capital, which can be understood as digital literacy (Ateca-Amestoy, 2020) or as soft skills related to the digital world (Navarrete, 2020), the European Commission (2017) has designed the Digital Competence Framework for Citizen which divides digital capital into five key areas and 21 specific competences. Even though the DigComp is basically a self-assessment tool, it provides people with the opportunity to assess their digital competence and identify gaps in their knowledge, skills and attitudes and research a framework to adapt to their specific research needs. Accordingly, we have designed a specific adaptation of the framework for the purposes of the present research, as already found in the literature (Ragnedda et al., 2019).

When it comes to the objectified digital capital, the beholding of digital asset to access cultural contents online or through technologies seems the most straightforward way to measure it.

2.4 Why capital and cultural participation?

After the overview of the present chapter, one way to understand the concept of capital is its accumulative nature, in the sense of the accumulation of whatsoever kind of stock which occurs over time. Capital requires a dynamic approach for its preservation and expansion, losing value if left as just a collection or stock. When an individual accumulates any kind of capital, this capital can be used to generate new value by transforming it to develop further

products and services. This is the link of capital to participation in culture. When it comes to museums for example, the individual enters the museum with previously accumulated stock of cultural capital, which gets transformed as the individual engages with the content, gaining additional capital in the form of newly acquired knowledge. Following the same argument, an individual interacting with a digital museum allows development of digital, human, and cultural capital at the same time, given engagement takes place through digital infrastructures.

The purpose of the current investigation – in linking capital to participation – is to explore eventual evidence to understand this process. It is acknowledged that the higher the initial (economic) capital, the higher the possible investment and the possible generation of value. The same idea appears to apply to cultural participation: when starting with little capital, an individual is only able to generate a little bit more from interaction and participation, when starting with higher capital the benefit is greater. The use of the concept of capital is therefore functional to test whether digital cultural participation requires sufficient and proportional competences in order to be understood incrementally and therefore whether the digital museum, as a cultural component that requires mental skills (human capital), cultural knowledge (cultural capital), and technological capabilities (digital capital) for participation, can function as a tool for the development of all these types of capital. This will be tested through the data analysis of our survey. Before proceeding, however, it will be necessary to give a very brief overview of the concept of Generation Z and the digital museum.

3. Generation Z and the digital museum

3.1 Why a generation study?

Examining a sociological group as a generation requires connecting individuals whose identities are inscribed in socio-historical processes. According to Mannheim (1952), generations are

constituted by two crucial factors: a shared historical location, events, and experiences, and a consciousness of that historical location. Howe and Strauss (2000) went farther in their definition of generation by establishing three criteria by which we might identify members of a certain generation. The first is 'perceived membership', which indicates that a person feels and considers himself to be a member of a group. The second criterion is 'shared beliefs and behavioural forms', which refers to the shared beliefs and patterns of behaviour, such as family, careers, religion, or political views. Thirdly, the 'shared history', which includes all the historical events that occurred throughout their youth and adolescence and had a significant impact on the private lives of the majority of group members. In other words, generations are transformed by history and vice versa (Csobanka, 2016). Whether we take into consideration the membership, the behavioural forms or the shared history defining one generation, the study of a generation mirrors the study of age – as a generational sociodemographic determinant – and provides an analytical framework for understanding the interplay between human lives and changing social structures. Its mission is to examine the interdependence between (i) ageing over the life course as a social process and (ii) societies and groups as stratified by age, with the succession of cohorts as the link connecting the two (White Riley, 1987).

All persons born between 1995 and 2012 are included inside Generation Z for the purposes of this study. The selection of this range was based on the literature, which presents several alternatives in this regard.²⁶

Using age as a sociodemographic variable is a prominent aspect of quantitative research (Rughinis and Huma, 2015) because age (i) is taken for granted as a commonsense concept, as there is no reference to any theory of age classification or ageing; (ii) age functions as a vernacular concept (Rughinis and Huma, 2015) recruited in order to document another social phenomenon and it is used as a resource for understanding something else (Bauer and Joffe, 1996). In other words, an age range serves as a surrogate for a particular generation, whose traits can then be methodically analysed. In the current study, we utilise age as a proxy to describe and analyse Generation Z because we are interested in determining their attitude

²⁶ See Dolot (2018) for a more in-depth explanation.

toward digital museums. This choice will be explained in the next paragraphs, which provide a brief description of this generation.

3.2 The profile of Generation Z

When it comes to Generation Z, the first historical trait that defines them is their true digital nativity (Bruzzetto-Hollywood, 2016) or their status as digital natives, which is dependent on their age, their proficiency in using digital devices such as mobile phones, video gaming, and the Internet, and the development of newer cognitive capacities and learning styles (Prensky, 2001). In other words, this generation's relationship with digital technologies appears to define it. Internet-related technologies have significantly altered the pace, breadth, and scope of human communications, resulting in huge changes in how people work, play, shop, discover friends, and get knowledge about others. As children, the norm for Generation Z was a world that operated with speed, scale, and scope. They established early proficiency with potent digital tools that enabled them to be both independent and collaborative. In other words, they have never known a world without the internet (Nagy and Székely, 2012), and thus their cognitive functions and emotions are distinct (Greenfield, 2009). Similarly, because kids could study about people and cultures from throughout the world at a young age, they gained a stronger awareness for diversity and an understanding of the significance of establishing their own identities. In other words, a typical Gen Zer – individual of the Generation Z – is a self-starter who cares deeply about others, strives for a diverse community, is highly collaborative and social, values flexibility, relevance, authenticity, and non-hierarchical leadership, and, while dismayed by inherited problems such as climate change, is pragmatic about the work that must be done to address those problems (Katz et al., 2021). In other words, Generation Z members are distinguished by their distinct attitude toward technology and their participation with and relationship to the outside world.

To confirm these qualities, we can consult several references from the academic literature. Several disciplines in the literature have a strong interest in Generation Z, and numerous traits

have been identified for this generation. For instance, Tari (2011) and Petry (2014) define this age cohort's members as follows: They (i) do not have strong familiar relationships; (ii) have gained unseen cognitive talents, but their emotional intelligence is underdeveloped; and (iii) are multitasking as a result of technologies such as apps. Nevertheless, being precise, or being able to concentrate, memorise something has become more difficult in long term; (iv) their personality becomes more narcissistic in the sense that it has perceived as very important to leave ones digital footprint for others – using only the global interest – viral contents; (v) the opinion of peers is overrated and becomes the most important one; (vii) the fear of missing out is dominant and can have various effects on the health, such as oversteering and chronic sleep disorders; (viii) thanks to media, role models, celebrities, and stars have a greater influence on them; (ix) motivation is essential when learning; (x) the pursuit of cooptation is prevalent.

Teo (2013) offers a second profile of Generation Z, in which he identifies a framework of four characteristics that characterise its members: (i) they are grown up with technologies. Many of the technological advancements have been created prior to this generation coming of age, hence these technologies are an intrinsic way of life (Oblinger and Oblinger, 2005). Accordingly, this generation tend to use sophisticated technologies more frequently and at an earlier age to communicate and socialise than past generations (Rainie, 2006); (ii) they are comfortable with multitasking, understood as the act of attending to two or more parallel tasks. Due to the ability of modern operating systems to support multiple concurrent applications and activities, multitasking is possible at a level that has never occurred before (Baron, 2008; Spink et al., 2006), resulting in proficiency with technologies and the ability to adapt technologies to one's needs, with a wide range of expertise and intensity (Jones et al., 2010); (iii) they rely on graphics for communication. It appears that Generation Z is more visually literate than previous generations who grew up with printed language (Prensky, 2001). Digital natives, having been exposed to a variety of multimedia technologies from a young age, prefer and are better at ease in a graphics-rich rather than a text-only world. They communicate visually by shooting photographs on mobile devices and distributing them via social media (Berk, 2009); (iv) they thrive on rapid pleasure and rewards. The Internet and digital technologies have revolutionised how people work and play. Users do not have to wait and can choose the quickest way to meet their needs because a variety of information is accessible in seconds with the press of a button. This exposure to technology has shaped individuals to crave interactivity and immediate

response and thrive in an environment that foster high speed and interactivity. Such instant gratification and the need to access information immediately are claimed to be indigenous to digital natives.

Another profiling of the Generation Z is provided by Csobanka (2016) adapting Nagy and Székely (2012) and identifies the individuals of the generation Z as (i) those born around the millennium; (ii) unaware of the world before digital technologies; (iii) intrinsically bond to social networks which are their main communication channels; (iv) global connected, which results in them being flexible, smart, tolerant; (v) both information consumers and providers; (vi) device savvy; (vii) multitasking (blogging, listening to music, writing emails); (viii) quick decision maker; (ix) not bond to physical places; (x) emotionally incompetent.

This summaries report that there are numerous different Generation Z profiles, despite the fact that many similarities can be found. The first factor, which defines this age group as a generation, is digital native status. Furthermore, Generation Z is the most multicultural and technologically advanced generation. Social networking is an integral aspect of Generation Z's daily lives, and their communication style is informal, direct, and unique. They are a generation of do-it-yourselfers (Dangmei, 2016). The manner in which this generation communicates, interacts, and learns appears to be inherently personalised, ethical, customised, interactive, and digital.

Before drawing a conclusion, it is necessary to recall that the young culture consumers of today are the future society and cultural marketplace. Understanding their cultural engagement and tastes is crucial for formulating regulations and predicting the future market structure of cultural consumption (Segre and Morelli, 2021). Consequently, the purpose of this study is to investigate the engagement of this Generation. Moreover, in light of the primary characteristic of this generation, namely digital nativity, they appear to be the ideal cohort for testing the hypothesis of the current work about digital capital and participation in digital museums. Regarding these issues, there are limited references in the literature. In general, the study of this generation has received considerable attention in relation to the workplace (Singh and Dangmei, 2016; Chillakuri, 2020), social media (Yadav and Rai, 2017), social interaction and technology (Turner, 2015), among others. Little (or none) when addressing directly cultural participation in (digital) museums: this thesis tries to step up in this direction.

3.3 Museums and digital museums

Over two and a half thousand years have passed since the ‘museum’ – Μουσείο, musaeum – concept appeared in Greek and Latin (Folga-Januszewska, 2020). It derives its name from the Muses, and it served mainly as the place of any creativity whose traces in different forms: records, experiments, subjects, remained and served science, cognition, reflection, as well as pleasure (Folga-Januszewska, 2020). The concept of museum has evolved over time, but in general museums have mainly been associated with places where amassed collections made it possible the experience of learning and the knowledge preservation.

More recently, the recognition of the fundamental role of museums in the society has been endorsed by the creation of the International Council of Museums (ICOM), which took place at the 1st UNESCO General Conference in Paris in November 1946. Since its establishment ICOM has provided numerous definitions of the concept of a museum, strongly impacting the museum sector’s image of itself (Salguero, 2020). It is worth reporting the last two definitions of museums provided by ICOM in order to understand the perspective/path this institution is taking.

According to ICOM (2017) a museum was defined as “a non-profit, permanent institution in the service of society and its development, open to the public, which acquires, conserves, researches, communicates and exhibits the tangible and intangible heritage of humanity and its environment for the purposes of education, study and enjoyment”. In 2022, ICOM updated the definition of museums to be “a not-for-profit, permanent institution in the service of society that researches, collects, conserves, interprets and exhibits tangible and intangible heritage. Open to the public, accessible and inclusive, museums foster diversity and sustainability. They operate and communicate ethically, professionally and with the participation of communities, offering varied experiences for education, enjoyment, reflection and knowledge sharing” (ICOM, 2022).

The new definition recalls all the previous functions of the museums – acquisition, preservation, exhibition, research, and communication/promotion of the cultural heritage – and its missions – study, education and enjoyment – and adds some perspectives to further integrate the museum as an institution in the reality which surrounds it, aiming at social

inclusion, inclusivity and diversity. A proper declaration of intent which hints the will of ICOM with regard to what this cultural institution could – and has to work to – be in the future.

Whether this declaration of intent is perceived as positive or not (Folga-Januszewska, 2020),²⁷ when saying the word ‘museum’ we enter the trend in the cultural tradition related to teaching, education, creativity and to the recognized role of culture to create positive externalities which could be perceived as integral part of cultural missions (McCarthy et al, 2004). At the same time, we slip past other phenomena that are close to museum: collecting, gathering, amassing worth treasuries, memory policy (Folga-Januszewska, 2020).

Economists for their part have looked at museums since the 1960s.²⁸ Within this discipline, museums are seen more as economic agents or as a firm (Navarrete, 2018) whose aim is the maximization of an objective function under a set of economic and institutional restrictions. More recently museums have been defined as multi-output producers with three main functions: (i) collection,²⁹ (ii) exhibition³⁰ and (iii) other services³¹ (Fernandez-Blanco and Prieto Rodriguez, 2019). Other than their direct output museums produce external outcomes – spillover effects – such as attractiveness for the cities, tourism, social integration, etc. and these outcomes recall, from an economic point of view, the declaration of intent provided by the ICOM definition. In other words, it appears that whether we approach museums from an economic or museology point of view, their functions and purposes appears to be clear and mostly shared.

Although we acknowledge museums as cultural institutions per se, it is to their digital declination that we are willing to pay more attention. As we know technologies are ubiquitous in nowadays society. As for other sectors, technological innovations are known to reshaping the role and mission of museums as producers and distributors of cultural content (Bertacchini

²⁷ According to practitioners and researchers, the definition proposed by ICOM contains a number of crucial elements, with the institution's non-profit status being the most important. However, such a topic is outside the scope of our conversation.

²⁸ See Frey and Meier, 2006 for a list of publications on the economics of museums (Navarrete, 2013).

²⁹ Included are the identification, documentation, expansion, and preservation of museum contents.

³⁰ In addition to education, training, and research, this makes funds available for aesthetic and/or entertainment purposes.

³¹ This category's subject matter is significantly broader and more diverse; for instance, it includes catering and merchandising. As museums reorient themselves to better serve visitors, these services emerge and evolve; consequently, their importance as a funding source increases.

and Morando, 2014). Accordingly, the research around the application of technologies to museums – or digital museums – has gone in multiple directions, from the exhibitions (Thomas and Mintz, 1998; vom Lehn and Heath, 2005) to the visitors' experience (Soren 2005; Minghetti et al., 2002; Peacock and Brownbill 2007, Deuschel et al, 2014), from innovative modality to access culture online (Bertaccini and Morando, 2014; Navarrete, 2019) to the effect on the curatorship (Li et al., 2012), from the management of future museums (Bowen and Giannini, 2019) to diversity and inclusion (Srinivasan et al., 2009) and so on.

A deeper overview of these approaches is beyond the scope of this work. What interest us, however, is that we need to report at least four main ways of understanding/defining the digital museum: (i) a physical museum that makes use of digital technologies in its spaces to enhance its storytelling, or *digitally enhanced museum*; ³² (ii) a digital museum that is a digital reproduction of the physical contents of the museum – via tablets, VR, AR and similar technologies – and that can be defined as a *digital twin* of a physical museum and (iii) a *digital native museum*, which is conceived directly as a digital identity and does not have a counterpart in the physical world; (iv) a digital museum that is a *physical-digital hybrid* of the museum as a physical institution, integrating technology as a service to the museum's function. It is this last declination that we discuss in this work. ³³ In other words we define a digital museum as a physical institution implementing digital applications to develop new products and services, such as online exhibitions, new processes to research, display, and manage collections, new organisational structures to accommodate an increasingly digital environment, reaching new markets, and tapping into existing resources to generate new capital (Navarrete, 2019), and whose identity has become intrinsically and ontologically intertwined with technology.

Even though distinguish online and *in situ* services (Cavaliere et al., 2022) ³⁴ could still be useful, Museums as institutions cannot be understood without this hybrid identity that enriches their informational values in addition to their cultural and commercial ones. In the current information society, consumers select content based on its dependability, validity,

³² In this category, we include experiences such as Remastered in Rotterdam, a "remastered" digital cultural experience museum where art and technology are the exhibition's theme.

³³ Please note that digital museums do not yet have a shared or institutional definition.

³⁴ (i) Online services (such as websites, ticketing and service information, access to collections, exhibitions, and databases, shopping, and social media networks); (ii) on-location services (such as, for instance, mobile applications, virtual reconstructions and interactive kiosks).

completeness, actuality, verifiability, accuracy, integrity, relevance, and accessibility (Navarrete, 2013): only this hybrid form can remain competitive. Education, publishing, conservation files, curatorial research, and marketing are all areas of the museum institution where digital museums exist. Rather than being an activity in and of itself, it is a technology that facilitates all other pursuits (Navarrete, 2018). It would be inaccurate to say that digital museums are not museums themselves.

As stated previously, the purpose of this thesis is to explore how the capital levels of Generation Z affect museum attendance, with a focus on the digital museum. The literature on this topic is extremely scarce, so the best way to provide an overview of the relationship between Generation Z and the digital museum will be to present the data currently available from international institutions, followed by the analysis of our survey's data to advance knowledge on the topic. This will be discussed in the second section of this thesis.

PART II

4. The state of art

In PART I of this paper, we examined cultural participation as a cultural phenomenon from a variety of disciplinary viewpoints. Simultaneously, we have investigated the concept of capital(s) and related its accumulative nature as a process that directly contributes to cultural engagement. In addition, we have highlighted the primary characteristics of Generation Z in an effort to fill the gap in the research regarding the cultural participation of this specific age cohort, which symbolises the cultural participants of the future. In addition, we have nudged the concept of digital museums, since participation in museums – and more precisely in digital museums – appeared to us the perfect contrivance to test our initial hypothesis and test if human capital, cultural capital and digital capital are related to the cultural participation (of the future). As recalled, the novel aspects of this thesis can be summed up as follows: (i) the theoretical connection between cultural participation and digital capital; (ii) the focus on a specific age cohort, digital natives, as a sociodemographic factor influencing cultural participation; and (iii) a precise focus on the digital museum from a demand-side perspective. As a result of the COVID-19 epidemic, some intriguing ideas on the digitalization of museums have been explored. NEMO (2020; 2021) has provided some supply-side data, while others (Pellegrini, 2020; Feder et al., 2022) have provided demand-side insight. However, there are no data on Generation Z's cultural participation in the digital museum. There are, however, data on cultural participation in cultural heritage – a label within which the museum is clustered in the official surveys – or data on the use of technology for culture-related purposes, from various age cohorts, including those close to but not identical to Generation Z. We can deduce the state of the art to which this inquiry corresponds based on these data.

Having selected a European reference population – thus declining the present work as the cultural participation in the digital museum by Generation Z in Europe – Eurostat certainly turns out to be the first channel to consult with respect to the state of the art on available data

on the topic. The European Commission (2018) has identified culture as an economic development driver that contributes to economic progress, the well-being of the people, and social cohesion in Europe. The cultural sector is also a great channel for fostering social inclusion and encouraging cultural diversity. Statistics on culture help to answer questions on its impact on the whole economy as well as enable to draw the picture of societal aspects of culture, such as how many people participate in cultural events, how much households or governments spent on culture, and many more.

For these and many other purposes Eurostat has collected various data on culture that fall under the name Cultural Statistics for the EU, which are not collected by a single stand-alone survey, but come from different Eurostat data collections, concerning both social and economic aspects. In the specific case of this work, the macro-sections of Cultural Statistics for the EU that interest us are (i) Cultural Participation; and (ii) Use of ICT for cultural purposes. The next two sections provide data available on these two specific aspects.³⁵

4.1 Cultural Statistics - Cultural Participation

According to Eurostat (2021a), culture and creativity have a significant role in the European Union (EU). Audio-visual content, music, literature, live performances and other forms of cultural expression connect people and society. Europe's rich cultural heritage is recognised across the world: it enhances lives, promotes European values and strengthens mutual understanding. Participation in creative and cultural activities may have a significant impact on an individual's quality of life, contributing to general well-being and fostering a sense of social connection. The following data are part of the EU statistics on income and living conditions (EU-SILC), which show some interesting findings about people's participation in cultural

³⁵ Eurostat periodically revises its data and reports. The data below refer to an extraction from November 2017 and January 2021 regarding cultural participation - Eurostat (2021a) - and an extraction from April 2021 regarding ICT use for cultural purposes - Eurostat (2021b).

activities assessed according to a wide range of socioeconomic variables, such as gender, age, and level of education. The cultural activities addressed include going to the cinema, watching live performances, visiting cultural venues – including museums, the subject of this inquiry – and engaging in artistic pursuits, such as playing an instrument, singing, dancing, or painting. According to official statistics, a person must have participated in at least one cultural activity in the previous twelve months in order to be designated a cultural participant.

In 2015, approximately 62.6 percent of the EU adult population, aged 16 or older, reported engaging in cultural activities, such as going to the movies, attending a live performance (theatre, concert, organised cultural event outdoors, etc.), or visiting a cultural site (museum, historical monument, art gallery, or archaeological site) within the previous 12 months. The Nordic Member states reached an all-time high of over 80 percent, but countries such as Bulgaria and Romania had trends of less than 30 percent. Consequently, cultural participation is not dispersed uniformly across Europe. At the European level, the participation rates for going to the cinema, visiting a cultural site, and watching a live performance are, respectively, 45,2 percent, 42,1 percent, and 42 percent. Although participation rates in these three cultural activities were comparable across the European Union, country patterns varied considerably. Nevertheless, an analysis of a geographical participation distribution is not the focus of the present work.³⁶ A final piece of data that we can add for completeness is that the distribution of preferences of these three cultural activities varies much across countries: for example, in Cyprus, Greece and Lithuania, participation rates for live performances were approximately double those recorded for visits to cultural sites. Moreover, in thirteen of the EU27, the highest participation rate was recorded for people attending live performances, in nine for going to the cinema and in five for visiting cultural sites (which includes museums), peaking at 67.2 percent in Sweden.

Across countries, the frequency of participation varies a lot as well. Considering as high frequency participation of at least four times in the last twelve months, the adult population of European Union reported a rate of 17.6 percent for cinema, 14.6 percent for cultural sites and 13.3 percent for live performances. At the other end of the scale, the share of the EU population that did not go to the cinema during the twelve months prior to the survey stood at 54.8 percent, with slightly higher rates for those who did not visit a cultural site (57.9

³⁶ For additional information, consult Eurostat, 2021a.

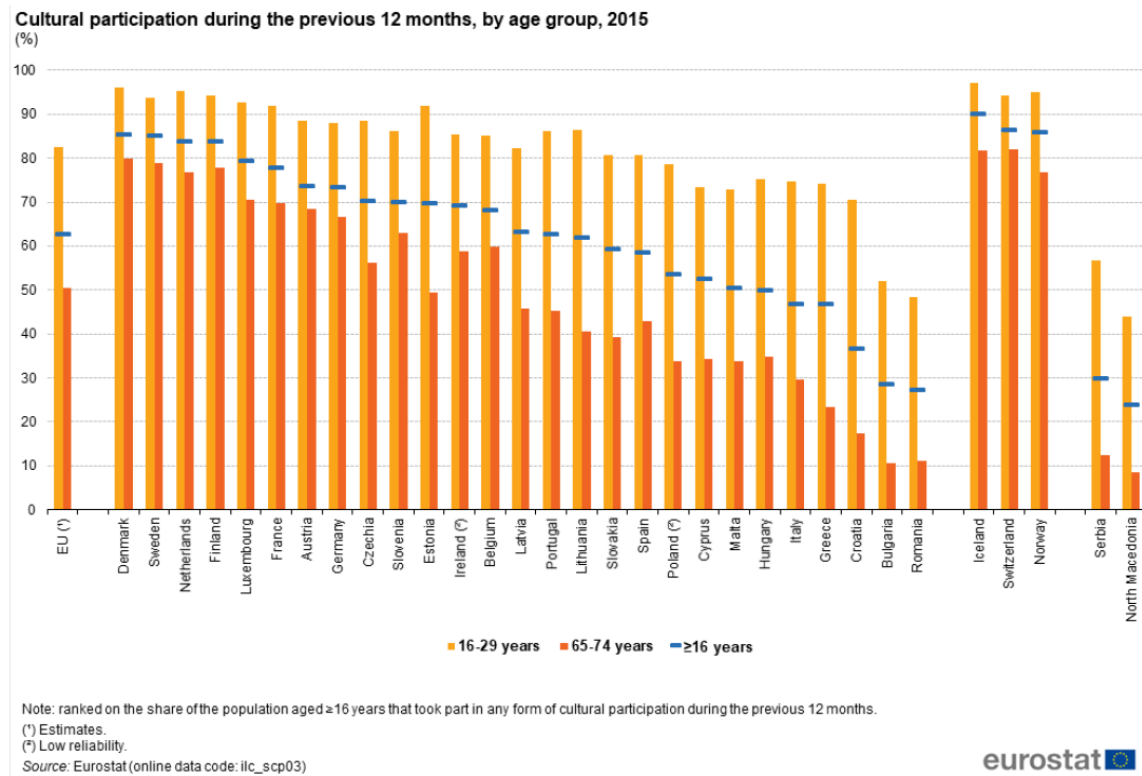
percent) or those who did not attend a live performance (58.0 percent). More than a quarter of all adults in Luxembourg, the Netherlands, Slovenia and Sweden made at least four visits to cultural sites.

Regarding cultural participation by age, data are clearly polarized. In 2015, more than four fifths (82.5 percent) of all younger people (aged 16 to 29 years) across the European Union reported that they participated in at least one of three cultural activities analysed here (during the 12 months prior to the survey), compared with a rate of 50.5 percent for older people (aged 65 to 74 years). Cultural participation was higher among younger (rather than older) people within each of the EU Member States. In 2015, there were only two Member States where fewer than 70 percent of younger adults reported that they took part in a cultural activity: Bulgaria (52.1 percent) and Romania (48.5 percent). There is a relatively wide *generation gap* in terms of cultural participation in several EU Member States, in particular in the countries with lower cultural participation rates. In the Nordic countries and the Netherlands, the differences between participation rates of younger and older people were less than 20 percentage points. On the other hand, the proportion of younger adults taking part in a cultural activity was at least twice as high as the corresponding share for older people in Slovakia, Lithuania, Cyprus, Malta, Hungary, Poland and Italy, rising to more than three times as high in Greece, more than four times as high in Croatia and Romania, and almost five times as high in Bulgaria.

The generation gap and the higher cultural participation rates of the younger population is an important observation when it comes to our investigation.³⁷

³⁷ Please keep in mind that in 2015, individuals aged 16 to 29 were a combination of late millennials and Generation Z. The graph below illustrates cultural participation trends by age.

Figure 1 – Cultural participation during the previous 12 months, by age group, 2015



Source: Eurostat 2021a

Unfortunately, the report does not provide the preferences of participation in these three activities among younger participants.

Furthermore, the report provides additional information regarding participation by (i) gender – here referred as sex; (ii) level of educational attainment, (iii) degree of urbanization and (iv) level of income. Regarding the last one, in the current work we have decided not to investigate this variable in light of the young age of participants and in light of the difficulty of detecting the actual purchasing power of members of society who are not yet – partly – economically active or independent. However, we decided to investigate the other socio-demographics – gender, education level, and degree of urbanization – to test the robustness of our data or suggest the possible presence of new trends characterizing Generation Z participation. It is therefore useful to provide a brief overview of the data present in the actual state of art at the European level with respect to these additional aspects, which will be explored in more detail

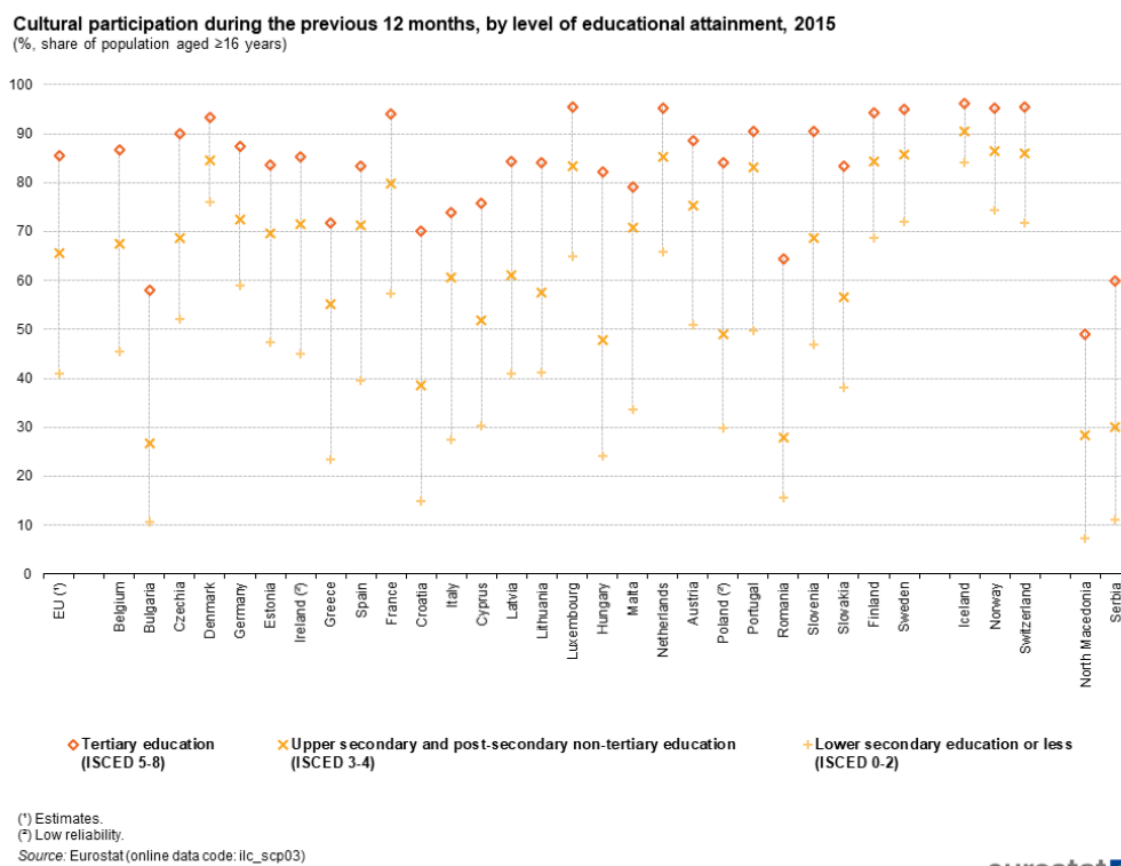
in the next chapter during the analysis of the data collected through the original survey created for this work.

Regarding gender, there is a slight gap between rates of participation of male and female participants. Apparently, women participate slightly more than men in two thirds of the EU27, while men participate more than women in eight states, but the percentage gap is minimal most of the time. This data show that the traditional perception of cultural participants as a highly educated woman in her fifties that we can find in the literature (Suárez-Fernández, 2020) is not met.³⁸

Regarding level of educational attainment, data confirm the trend recorded in the literature and sustain the core theorization of the information theory. People with a tertiary level of educational attainment were much more likely to take part in cultural activities than people with lower levels of educational attainment. In 2015, some 85.6 percent of the EU adult population – aged 16 years or more – with a tertiary level of educational attainment reported that they took part in a cultural activity; much lower shares were recorded for people with an upper secondary and post-secondary non-tertiary level of educational attainment (65.7 percent) and people with no more than a lower secondary level of education attainment (41.0 percent). This pattern — a higher propensity to take part in cultural activities among people with higher levels of educational attainment — was repeated in each of the EU Member States. In 2015, the adult populations of Greece and Hungary that possessed a tertiary level of educational attainment were more than three times as likely to take part in cultural activities as their fellow citizens with no more than a lower secondary level of educational attainment; in Romania and Croatia those with a tertiary level of educational attainment were more than four times as likely to take part in cultural activities and this ratio peaked in Bulgaria – 5.5 times as likely. This relationship between level of educational attainment and participation is important because confirms that cultural participation is related to the levels of capitals behold by individuals developed through education. Below the data on cultural participation by level of educational attainment.

³⁸ A further note is required. At the European level, data collection differentiates gender only at the binary level, ignoring a portion of the population that does not identify with the canonical binary division of gender. The present study's survey data, on the other hand, indicate the presence of a substantial number of individuals who identify as non-binary. Consequently, the presented data collection offers an additional exploratory layer and depth, which will be explored further in subsequent works, with the respect it merits.

Figure 2 – Cultural participation during the previous 12 months, by level of education, 2015



Source: Eurostat 2021a

Regarding the degree of urbanization, apparently people living in places with higher degrees of urbanization tend to participate more in cultural activities.

Before moving to the data provided by the Cultural Statistics – Use of ICT for cultural purposes (Eurostat, 2021b), we need to stress two further points.

The first concerns the practice of artistic activities, which represent the other side of the coin of cultural participation. As part of the EU-SILC ad-hoc module on social and cultural participation in 2015, EU residents were also asked about their active cultural pursuits, specifically whether or not they took part in any of the following artistic activities: playing a musical instrument, composing music, singing, dancing, acting, photography/film-making, drawing, painting, sculpture, other visual arts/handcrafts, writing poems/short stories/fiction, and so on (Eurostat, 2021a). In 2015, the share of the EU adult population – aged 16 years or more – that reported that they pursued at least one artistic activity – during the 12 months

prior to the survey – stood at just over one third (34.4 percent). A more detailed analysis reveals that more than one sixth (17.4 percent) of the EU population practised at least one artistic activity every week. Note these figures include the 5.2 percent share of the population that practised every day. By contrast, a majority (65.7 percent) of adults in the European Union did not practise any artistic activity. Not surprisingly, these activities register a lower participation rate than the activities listed above – around 40-45 percent – because they require more active involvement of the participant.

The second and last point to be addressed pertains the reason to not participate in culture. The main reason for not participating in the three categories of activities analysed appears to be (i) lack of interest, as cited by 39.1 percent of respondents in the European Union who did not visit a cultural site, (ii) 37.5 percent of respondents who did not go to the cinema and (iii) 36.6 percent of respondents who did not attend a live performance. Financial reasons were the second most often declared reason for not participating in cultural activities, with live performances participation peaking for this declared reason. Proximity, on the contrary, was rarely cited as the main reason for not participating in a cultural activity.

We will extensively analyse reasons for not participating in the next chapter, trying to find a relationship with the levels of capitals behold by participants.

4.2 Cultural Statistics – Use of ICT for cultural purposes

Modern internet technologies make it possible for large numbers of people to take part in online cultural activities, such as creating and downloading and sharing cultural content – listening to music, watching films, streaming live concerts, and so on. New forms of online cultural participation have emerged with the development of digital technologies and the spread of the internet. In 2020, 91 percent of households in the EU had internet access, (Eurostat, 2021b), so the potentiality to participate in culture digitally is widely spread.

Cultural Statistics – Use of ICT for cultural purposes (Eurostat 2021b) – returns the picture of how culture is participated in through digital media: this represents relevant background

information when analysing the cultural participation levels of the first generation of digital natives. Unfortunately, the present investigation does not present data on participation in cultural activities such as museums or heritage activities but deals more specifically with activities such as 'Reading online news sites, newspapers and news magazines', 'Watching streamed TV or videos', 'Listening to music (web radio, music streaming) or downloading music' and 'Playing or downloading games'. This makes it possible to identify digital participation trends – part of the populations of interest – in a broader context of cultural participation. And at the same time, it demonstrates the need to begin investigating other aspects of participation, such as museums, that have not yet been probed: the novelty and urgency element of the current investigation – supported through an ad hoc data collection – emerges as necessary.

In the EU as a whole and in the majority of countries, the most popular culture-related uses of the internet were 'Reading online news sites/newspapers/news magazines' and 'Watching internet streamed TV or videos'. In 2020, 75 percent of the EU population aged 16-74 years who had used the internet in the three months prior to the survey, had read online news sites/newspapers/news magazines and 74 percent of this population had watched internet-streamed TV or video. Lower shares were recorded for 'Listening to music or downloading music over the internet' (61 percent) and 'Playing or downloading games' (34 percent). Moreover, with the development of streaming services, a growing number of films, videos, TV programmes and series can be accessed via the internet. In 2020, 74 percent of EU internet users watched internet streamed TV or videos (excluding programmes or videos that are downloaded and saved for a later date). In 2020, 61 percent of EU internet users (aged 16 to 74 years) listened to music (e.g., via web radio or music streaming) or downloaded it via the internet. Playing and downloading games refers to playing games online or after downloading them (using a games console or a smart TV). Across the EU, in 2020, some 34 percent of internet users (aged 16 to 74 years) participated in this cultural activity.

Apart from this general information, what concerns us is the participation through digital means of younger participants. As anticipated, young people (aged 16 to 24 years) in the EU were more likely than average to make use of the internet for a wide range of cultural purposes. Around 91 percent of internet users in this age group watched streamed TV or videos (compared with 74 percent of the whole target population and 58 percent of internet users aged 55 to 74 years), 87 percent listened to or downloaded music online (compared with 61

percent and 37 percent respectively), while 62 percent played or downloaded games (compared with 34 percent and 20 percent respectively). Below Table 1 on the use of the Internet for cultural purposes by age.

Table 1 – Use of the Internet for cultural purposes, by age, 2020

Use of the internet for cultural purposes, by age, 2020
(% among people aged 16-74 who used the internet in the previous three months)

	Reading online news sites/ newspapers/news magazines			Watching internet streamed TV or videos			Listening to music (e.g. web radio, music streaming) or downloading music			Playing or downloading games		
	All individuals	16-24 years	55-74 years	All individuals	16-24 years	55-74 years	All individuals	16-24 years	55-74 years	All individuals	16-24 years	55-74 years
EU (*)	75	71	70	74	91	58	61	87	37	34	62	20
Belgium	71	69	66	70	91	48	57	81	32	37	62	20
Bulgaria	58	47	59	44	62	25	51	80	22	16	38	5
Czechia	90	83	90	72	91	50	60	94	32	25	63	8
Denmark	87	90	81	88	99	72	77	100	50	47	73	29
Germany	81	72	75	83	98	65	61	92	34	40	69	24
Estonia	90	87	86	80	96	60	69	93	41	29	58	16
Ireland	74	.	64	80	.	72	59	.	46	26	.	17
Greece	89	79	88	67	88	45	73	93	50	32	71	13
Spain	81	80	73	84	95	68	73	95	49	40	71	21
France (†)	60	66	53	.	.	.	.	.	.	.	.	.
Croatia	92	87	89	89	99	75	62	85	34	35	53	18
Italy	63	56	62	77	91	63	51	78	29	31	59	16
Cyprus	79	73	73	95	99	86	50	75	26	38	79	10
Latvia	82	74	81	74	88	56	52	86	26	25	49	14
Lithuania	89	82	90	81	94	61	60	88	29	23	54	9
Luxembourg	74	66	71	74	92	51	62	86	35	36	64	24
Hungary	83	80	81	84	95	68	69	91	50	29	53	17
Malta	86	90	76	93	99	80	75	98	56	47	66	34
Netherlands	87	84	80	95	100	86	72	93	50	56	77	43
Austria	73	75	64	82	98	59	57	87	28	29	55	14
Poland	79	74	78	60	82	37	50	81	25	19	48	7
Portugal	86	90	76	66	89	43	73	95	50	38	67	20
Romania	48	45	44	37	55	20	44	66	20	26	48	10
Slovenia	82	77	76	83	97	64	70	93	47	32	60	21
Slovakia	76	66	77	63	83	40	53	84	24	22	45	9
Finland	93	89	89	93	98	84	77	98	52	45	76	22
Sweden	86	74	83	89	94	76	76	92	52	46	72	24
Iceland	96	94	96	96	99	88	89	99	71	43	60	24
Norway	95	94	92	94	99	84	82	97	56	36	61	17
Switzerland (‡)	79	76	75	.	.	.	.	.	.	.	.	.
Montenegro	78	78	75	70	89	49	48	82	23	28	66	6
North Macedonia	59	59	53	44	62	27	58	82	30	28	50	10
Serbia	74	54	76	70	82	56	44	73	29	21	47	11
Turkey	68	69	56	74	87	47	64	83	34	37	63	13
Bosnia and Herzegovina	66	73	50	60	79	49	48	66	26	20	44	13
Kosovo (†)	79	84	67	81	93	69	69	90	53	41	64	22

(*) Estimates.

(†) Reading online news sites/newspapers/news magazines: 2019 data.

(‡) This designation is without prejudice to positions on status, and is in line with UNSCR 1244/1999 and the ICJ Opinion on the Kosovo declaration of independence.

Source: Eurostat (online data code: isoc_ci_ac_1)

eurostat

Source: Eurostat 2021b

Moreover, participation in culture online can be analysed in more detail, according to the different socioeconomic characteristics of internet users as well. An analysis by level of educational attainment indicates that internet users with a tertiary level of education were generally more likely to make use of the internet for cultural purposes than people who have not achieved this level of education. This was most notably the case for reading online news sites, newspapers, and news magazines: in 2020, 86 percent of EU internet users with a tertiary

level of education made use of the internet for this purpose compared with 60 percent among internet users with at most a lower secondary level of education. Of the four cultural activities analysed, there was one exception: a higher share of internet users with at most a lower secondary level of education (42 percent) made use of the internet for playing or downloading games, compared with 33 percent observed for internet users with an upper secondary and post-secondary non-tertiary level and 31 percent for internet users with a tertiary level of education.

At European level, men were more likely than women to make use of the internet for cultural purposes: nevertheless, this gap is not significant. Across the EU, for 'Watching internet streamed TV or videos' the proportion of men using the internet for this purpose was 5 percent higher than that recorded for women, 'Listening to music or downloading music' was 6 percent higher and for 'Playing or downloading games' the difference was 7 percent. The smallest difference between the genders was recorded for 'Reading online news sites, newspapers and news magazines', where the share for men was 3 percentage points higher than that for women.³⁹

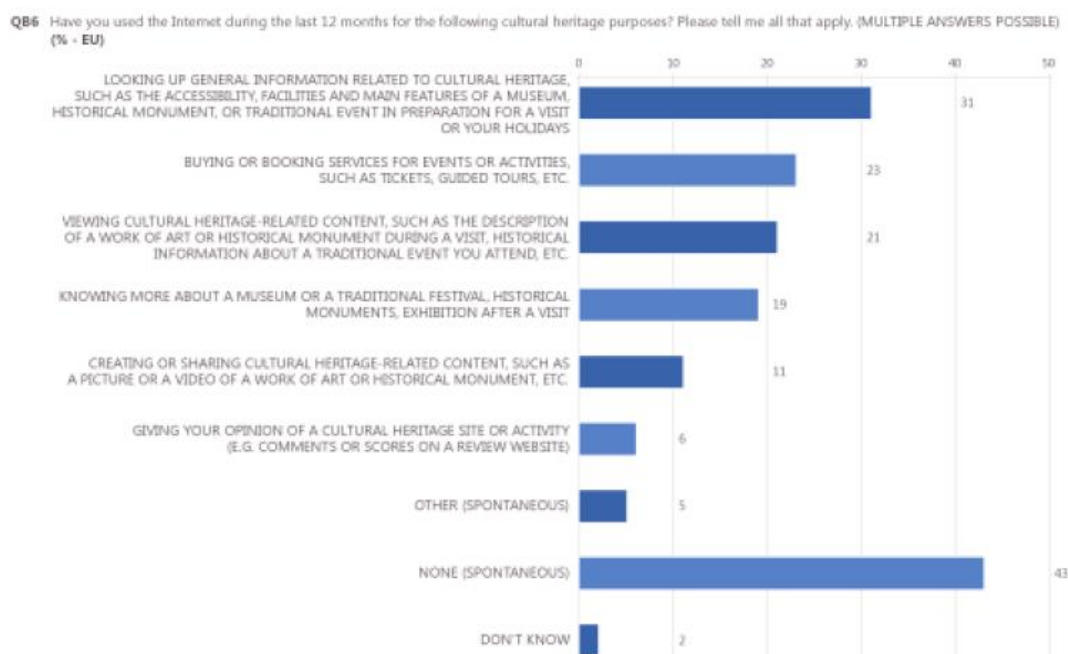
4.3 Special Eurobarometer 466

The Special Eurobarometer 466 – Cultural Heritage, which was published at the end of 2017 to inaugurate the 2018 European Year of Cultural Heritage, is an extra important data source for the context of this investigation. This article provides fascinating insights into, among other things, European citizens' perceptions of cultural heritage as an identity-builder and economic asset. Eurobarometer 466 provides information applicable to our question regarding the use of the Internet for cultural heritage-related activities.

³⁹ The last part of the Cultural Statistics – Use of ICT for cultural purposes proposes an analysis of the attitude to purchase cultural goods through internet but it is not relevant for the purposes of the present investigation.

Just over half (55 percent) have used the Internet in the last 12 months for at least one of a range of cultural heritage purposes. Respondents are most likely to have used the Internet to look up general information related to cultural heritage, such as the accessibility, facilities and main features of a museum, historical monument, or traditional event in preparation for a visit or their holidays (31 percent). Almost one quarter (23 percent) used the Internet for buying or booking services for events or activities, such as tickets, guided tours, etc., while 21 percent used it for viewing cultural heritage-related content, such as the description of a work of art or historical monument during a visit, historical information about a traditional event they attend and so on. Almost one in five (19 percent) used the Internet to know more about a museum or a traditional festival, historical monuments, exhibition after a visit, while just over one in ten (11 percent) have created or shared cultural heritage-related content, such as a picture or a video of a work of art or historical monument, etc. Respondents are least likely to have given their opinion of a cultural heritage site or activity (6 percent). Just over four in ten (43 percent) say they have done none of these things on the Internet in the last 12 months. Please refer to Figure 3 for a visual representation of the aforementioned data.

Figure 3 – Use of internet for cultural heritage related purposes



Base: all respondents (N=27,881)

Source: European Commission 2017b

With regard to age, which is the specific interest of the current analysis, respondents younger than 55 years are the most likely to have used the Internet in at least one of these ways. For example, 65 percent of those aged 15-24 have done so, compared to 44 percent of those aged 55 and over. The youngest respondents (aged 15-24) are overall most likely to have used the internet for cultural heritage purposes. This pattern applies for all the uses of the Internet asked about.

With regard to the educational attainment, data show that the longer a respondent remained in education, the more likely they are to have used the Internet in at least one of these purposes: 74 percent of those who completed their education aged 20 or after have done so, compared to 27 percent of those who did so aged 15 or younger. This pattern applies for all the uses of the Internet asked about. Table 2 below synthesizes the data about the usage of internet for cultural heritage related purposes by age and educational attainment.

Table 2 – Use of internet for cultural heritage related purposes by age and educational attainment

QB6 Have you used the Internet during the last 12 months for the following cultural heritage purposes? Please tell me all that apply. (MULTIPLE ANSWERS POSSIBLE)
(% - EU)

	None (SPONTANEOUS)	Total 'At least in one way'
EU28	43	55
Age		
15-24	33	65
25-39	34	64
40-54	39	59
55 +	54	44
Education (End of)		
15-	70	27
16-19	50	48
20+	25	74
Still studying	27	72

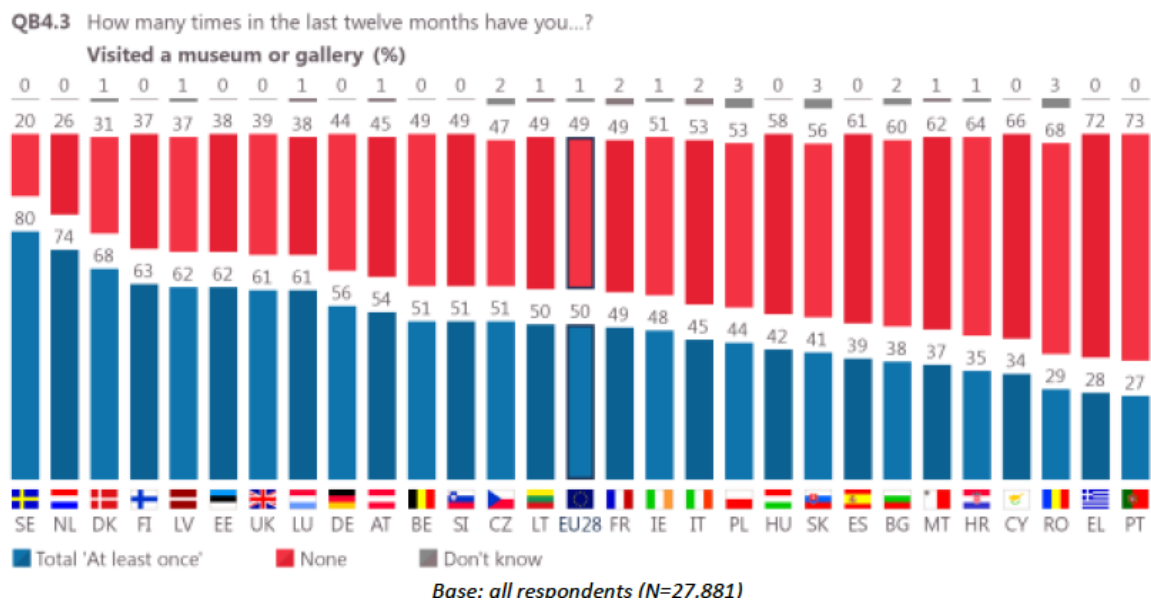
Source: European Commission 2017b

Albeit very briefly, Eurobarometer 466 provides interesting insights into the relationship between technologies and cultural heritage, which will be further explored later with the analysis of the data collected.

This publication provides as well other information which are object of analysis of the present work.

Starting with participation in cultural heritage and museums, data show how in the twelve months prior to the investigation, the majority of respondents have visited a historical monument or site, attended a traditional event, or visited a museum or gallery. With regard to museum or gallery visits, participation vary widely across the EU. In fourteen Member States, a majority of respondents have visited a museum or gallery in the last twelve months, with respondents in Sweden (80 percent), the Netherlands (74 percent) and Denmark (68 percent) the most likely to have done this, compared to 27 percent in Portugal, 28 percent in Greece and 29 percent in Romania. Figure 4 offers a wide panoramic.

Figure 4 – Participation in museums



Source: European Commission 2017b

With regard to age respondents under the age of 55 are the most likely to have done each of these activities at least once in the past 12 months. For example, 59 percent of those aged 15-

24 have visited a museum or gallery, compared to 41 percent of those aged 55 and over. In addition, the youngest respondents (aged 15-24) are also the most likely to have visited a historical monument or site, attended a traditional or classical show, visited a library or archive, or to have been to the cinema or a film heritage festival to see a classic European film produced at least 10 years ago. Except for visiting traditional craft workplaces, the youngest respondents (aged 15-24) are most likely to participate in cultural heritage activities compared to other age groups.

With regard to educational attainment, the longer a respondent remained in education, the more likely they are to have done each of these activities at least once in the past 12 months. For instance, 78 percent of those who completed their education aged 20 or after having visited a historical monument or site, compared to 34 percent who completed their education aged 15 or younger. Table 3 shows how both age and educational attainment are strong predictor of cultural participation.

Table 3 – Participation in different cultural activities by age and educational attainment

QB4 How many times in the last twelve months have you...?
(% - EU)

	Visited a library or archive (e.g. to consult manuscripts, documents, ancient maps, etc.)		Visited a historical monument or site (palaces, castles, churches, archaeological sites, gardens, etc.)		Visited a museum or gallery		Attended a traditional event (e.g. food festival, carnival, puppet theatre, floral festival, etc.)		Visited a traditional craft workplace (e.g. weaving, glass blowing, decorative art, embroidery, making musical instruments or pottery, etc.)		Been to the cinema or a film heritage festival to see a classic European film produced at least 10 years ago		Seen a traditional or classical performing arts event (e.g. music, including opera, dance or theatre, folk music, etc.)	
	None	Total / At least once ¹	None	Total / At least once ¹	None	Total / At least once ¹	None	Total / At least once ¹	None	Total / At least once ¹	None	Total / At least once ¹	None	Total / At least once ¹
EU28	69	30	38	61	49	50	47	52	69	30	73	26	56	43
Age														
15-24	54	45	31	68	40	59	41	58	71	28	64	34	51	48
25-39	65	33	32	67	44	55	40	59	67	32	67	32	54	45
40-54	71	28	34	65	47	53	42	57	66	33	72	27	53	46
55+	76	23	46	53	58	41	57	42	71	27	79	19	62	37
Education (End of)														
15-	87	12	65	34	78	21	66	33	83	15	86	12	76	22
16-19	76	23	42	57	57	42	50	49	71	27	76	22	62	37
20+	58	41	21	78	30	69	37	62	59	40	65	34	43	56
Still studying	45	54	25	74	29	70	36	63	66	33	61	37	44	55

Source: European Commission 2017b

Lastly, according to the Eurobarometer 466 findings, regarding barriers to participation, lack of time is the most common one to accessing cultural heritage sites or activities (37 percent),

while more than one third of respondents mention cost (34 percent) and 31 percent cite a lack of interest. For one quarter (25 percent), a lack of information is a barrier. Peculiarly, respondents aged 15-24 are almost equally likely to mention a lack of time (40 percent) and a lack of interest (39 percent) as barriers, followed by cost (34 percent) and a lack of information (28 percent). This means that, although not being still – partially – economically independent, it is not the cost the reason for not participating: a merit could be attributed to cultural policies which foster cultural participation of youngster by subsidizing it.

4.4 Conclusions

The three cited data collections and analyses offer the most comprehensive and systematic data source on cultural participation and the usage of technologies connected to cultural participation in heritage at the European level.

Several studies have been conducted regarding the cultural participation of young people (Nagel, 2009; Wood, 2010; Willekens and Lievens, 2014; Hansen et al., 2015; Smyth, 2020; Kacane, 2021; Segre and Morelli, 2021), but none specifically refers to Generation Z and digital nativity and links digital capital and participation. In addition, the majority of the evidence has a national viewpoint or refers to particular cultural activities, and the results are contradictory. To conclude, the data presented cannot provide answers to the research questions posed by our investigation. Moreover, the peculiarity of the analysis we are pursuing enables us to advance the knowledge of the literature with regard to a variety of issues, such as digital participation, participation in digital museums, and the participation of a specific age group – Generation Z – with regard to a variety of cultural activities and capital types. In addition, we will provide information regarding non-binary individuals whose participation has never been investigated. The relevance and opportunity of creating an ad hoc survey therefore results as pertinent. In the following chapter, we will show the survey and then analyse the acquired data.

5. The survey

In the part that follows, we detail the procedure that led to the development of the accompanying survey,⁴⁰ whose results serve as empirical evidence for this study.

We will now begin with the analytical description of the data set before describing the various components of this survey. Next, we will discuss the relationship between the present survey and the literature in order to demonstrate the theoretical foundation from which the reasons for conducting this survey arose and to highlight its novel aspects in the landscape of cultural participation analysis; we will then discuss how its strengths are related to its absolute novelty. In the final section, we discuss the research questions associated with the design of the survey and the anticipated outcomes of the data analysis.

5.1 The analytical description

The purpose of this research is to investigate the participation patterns of Generation Z in museums, with a focus on the digital aspects of museums, known as digital museums. We view the museum as a producer of tangible, intangible, and digital outputs and assets. Digital museums are physical institutions that simultaneously provide their services via digital media. In other words, for the sake of this study, we consider traditional (physical) museums with a digital presence to be digital museums. In addition to virtual tours, digital collections, and online services designed to augment the physical offerings of museums, we define digital museums to include digital communication tools.

The present survey on digital museums was developed between the end of 2021 and the beginning of 2022 in accordance with the available literature and in light of the various gaps

⁴⁰ For more details see APPENDIX A – The Survey

identified. After completion of the survey, it was published on February 16, 2022. Avoiding bias in data gathering necessitated careful attention during the survey's dissemination phase.

An initial, rejected hypothesis involved distributing the survey through one's personal contacts. This approach, which is not recommended for data collection, carries the weight of many potential biases tied to social bubbles associated with the survey writers.

A second, also rejected, hypothesis involved distributing the survey to the author's academic communities of interest. This possibility would have significantly altered the character of the inquiry, since the target group would not have been representative of Generation Z as a whole due to geographical, age, and educational level limitations.

A third hypothesis for the distribution of the survey, which was ultimately rejected, involved the potential of disseminating the survey to the online communities of various museums and requesting their cooperation. In this instance as well, the results of the survey would have been weaker and more skewed, since only those members of Generation Z already interested in museums would have been surveyed.

Therefore, it was decided to take a broader approach and go where Generation Z is. According to the data, this generation is an avid user of the Internet and Social Networks (Yadav and Rai, 2017), hence we have opted to distribute the survey through them. It was determined that a Facebook page dedicated to the distribution of the survey should be created. On the Meta platform, five sponsored posts were therefore made for the distribution of the survey on Instagram, Facebook, and Messenger. From the final week of March 2022 to the second week of April 2022, these sponsorships were active sporadically for roughly three weeks. The decision to alternate the publication of the pieces was taken to prevent the posts from duplicating and consuming their own potential audience. Regarding audience targeting, particular decisions were made to allow the audience to be as vast as feasible while also permitting the collecting of a sample that was as large and representative as possible. Regarding the geolocation of sponsored postings, multiple regions were selected for each European nation with the objective of achieving a balance of respondents from areas of higher and lower urban density. Accordingly, the age range was restricted to members of Generation Z. Initially, sponsorships were aimed at the full age group of interest; later, they were changed to target the portion of Generation Z that had responded less to the initial sponsorship effort. In order to ensure the representativeness of the sample, gender balance was also considered by collecting data from a sample representative of the gender distribution currently found in

official rankings, or in other words, for a balance between the number of male and female respondents. A prize draw incentive system was incorporated as a thank you for completing the survey in order to further engage respondents and encourage their participation. There are two identical versions of the survey, one in Italian and one in English. The Italian edition was distributed only in Italy, while the English version was distributed throughout Europe. The presence of Italian respondents was well balanced by avoiding a disproportionate presence of responses from this country.

The two major limitations of the distribution of this survey in the modality described are (i) the digital distribution; (ii) the language of the questionnaire in English.

Regarding the distribution of the survey, the digital methods – via social networks – allowed us to contact just Generation Z individuals with internet access and social network usage. However, official data can convince us that this sample is representative. According to statistics from the 2019 Standard Eurobarometer 92 – Media Use in Europe (European Commission, 2020), 94 percent of Generation Z utilises the internet daily in Europe, with 95 percent using social networks weekly. On the basis of these data, we may conclude that the Generation Z represented on social networks is representative of the entire generation.

Regarding language, the English survey allowed us to reach just those members of Generation Z who speak English, with the exception of Italians, who could take benefit of an Italian version. Although only English-speaking members of Generation Z were contacted, according to Special Eurobarometer 386 – Europeans and their languages (European Commission, 2012b), English is the most widely spoken foreign language in Europe, particularly among members of this generation. It would have been too expensive and difficult to create a questionnaire version in each of the official languages of the many European nations. We viewed English as a reasonable compromise for the viability of the survey.

While retaining the scientific rigor required for a scientific publication, it was chosen to tailor the tone of the survey's language to its intended audience. The decision proved to be successful. In roughly three weeks, the total number of responses was 1,812; of these, 717 were members of the target population – Generation Z from Europe – and completed the survey in full.

5.2 The structure of the survey

The survey consists of twenty-five questions, distributed in four different sections: (i) about you; (ii) about your digital activities; (iii) about your digital cultural activities; (iv) about your cultural activities.

The first section is designed to gather information regarding the socio-demographic characteristics of the respondents. Through this information, in addition to profiling the respondents, it is possible to compare the evidence already present in the literature with the results of the survey.⁴¹

The second section is apt to measure the digital capital of the respondents, through a joint method derived from the study of the literature and an adaptation by the author of DigComp 2.1, the European e-skills survey tool. This is of the utmost importance to the current investigation, as we seek to determine the potential relationship between digital capital and cultural participation.

The third segment focuses on the respondents' digital cultural practises, particularly their participation in the digital museum. This section also aims to ascertain how respondents assess the significance of museum digital services and their impact on the educational role of museums. Moreover, a brief subsection is dedicated to memes. Memes, generally understood as digital items – such as a captioned picture or video – which are spread widely online especially through social media, are a new mode of expression – or language – of contemporaneity and are widely used by Generation Z. They consist of an iconic and a textual part, which serve as message and as context, and are almost exclusively humorous in nature and tone. Through this sub-section we try to survey the opinion of Generation Z with respect to culturally themed – or artistic – memes, which are already widespread in social networks, to understand their potential as a tool for the digital museum. At the same time, the aim of this sub-section is to measure participants' levels of cultural capital in order to link them with levels of cultural participation. In order to detect the participants' cultural capital, it was

⁴¹ As mentioned, multiple times in the first chapter, a significant portion of the literature on cultural participation emphasises the importance of relating different socio-demographic characteristics to cultural participation, thus attempting to profile users in order to better describe the phenomenon, have tools to predict participation, and create policies based on these results.

decided to act in a completely original way. The participants were asked to observe three memes and to answer yes-no questions designed to detect their knowledge of the artistic context of reference – specifically the name of a painter, the location of a fresco and the recognition of a specific painting movement. By clustering the number of correct answers, it was possible to define four different levels of cultural capital of the respondents. The choice of using memes as a visual tool to detect the respondents' cultural capital was also intended as a means of lightening the survey to facilitate levels of completion. In this section, we also attempt to determine if the digital shift caused by the spread of Covid-19 has affected the use and perception of the digital museum, as well as the primary reasons for interacting with it.

In the fourth section on general cultural participation, with specific reference to the museum in its physical form, we examine Generation Z's participation patterns in culture. There are also questions that have already been included in other official European surveys in order to facilitate comparisons between the results gathered from this survey and those from other official surveys.

Most of the questions are closed-ended divided between multiple chooses questions and matrix tables. This choice is due to the fact that questionnaires with closed answers have much higher completion rates than open-ended questionnaires. In addition, closed-ended answers are more agile and shorter to complete and allow more information to be gathered in less time. The different options given with respect to the answer to a question almost always result from a systematization of the evidence in the literature or from personal intuition – a minority of cases. There are only two open-ended questions with specific reference to digital museums. In this case, it was considered essential to allow respondents to freely provide answers with respect to this topic, also and especially in light of the novelty of this concept, which is not yet fully standardized in the literature.

5.3 The theoretical framework and the novelty elements

Previously, we anticipated that the present investigation includes three innovative aspects, which supports the decision to create an ad hoc survey.

The first reason relates to the theoretical framework and the capital reasoning. As demonstrated in the first chapter, cultural participation may be described by two major theories: the theory of information processing and the theory of status seeking. Cultural participation is dependent on many forms of capital, according to these theories. For the information theory, levels of cultural and human capital are necessary to explain cultural participation, while for the status theory, levels of social and economic capital are crucial. Surprisingly, the level of digital capital has not been correlated with cultural participation to this point. In a technologically mediated society, digital advancements are used daily to every industry, including the cultural industry. Currently, official statistics provide information with respect to, for instance, the use of the internet for cultural heritage related purposes, but do not ontologically go into aspects related to the digital nature of cultural heritage or museums. In other words, investigating digital capital as a possible predictor of cultural participation is the first element of novelty of this thesis.

The second aspect of the investigation's originality is its analysis of Generation Z as the first generation that can claim the true digital native status: the behaviours and habits of this generation can help us understand how the digital habits of the present are expressed and how choices could be oriented to better integrate technology into the cultural sector.

For the third reason of the present work's originality, we must add another tile. To discuss cultural participation is to discuss a wide range of human activities, including singing, writing, watching films, attending the theatre, playing video games, reading books, etc. Cultural participation is a very broad activity that encompasses the consumption of cultural products and participation in cultural activities. It is also a tool for individuals to increase their own cultural and informational capacity and capital, which aids in defining their identity and/or permits personal expression. In official statistics, the data from these many activities are frequently grouped together and referred to as cultural participation. When conducting a sector-specific study, however, this amalgamation is unproductive. For this reason, in this work, instead of dealing with cultural participation as participation in one or more of the many activities or consumption of products that fall under the label of culture, we have decided to focus on participation in heritage, and more specifically participation in museums, with the addition of a special focus on aspects of the digital museum. The current state of the art, especially with regard to data from official institutions, does not provide comprehensive information on participation in museums, and on the contrary, museums are often lumped in

with other cultural heritage institutions, such as historical or archaeological sites, and are investigated and labelled as cultural heritage. Surveys on specific participation in the digital museum are not encountered neither. In addition, we have focused our investigation on the demand side. It is plain for all to see how the digitization of all production sectors is the mantra of our present. While for many sectors – cultural and non-cultural – the very significant economic implications of this process have already been demonstrated and are linked to a demand requirement, as far as museums are concerned this is not, as things stand, entirely clear. The digitalization of museums has begun, primarily due to the willingness of governments to upgrade this sector in order to maintain it competitive with other industries. Therefore, we are experiencing a top-down digital approach of museums in the absence of market demand evidence for this digitization. without any counterevidence of the actual market demand for this digitization. In the presence of this mechanism of government intervention, it is reasonable to question if digitization is a genuine market necessity or whether the digital museum, in the wave of digital for digital's sake, is more the outcome of governmental intervention. In other words, is the digital museum a consequence of supply-induced demand? Answering this question has substantial economic and policy implications. This is the fourth factor of this survey's novelty and relevance.

In conclusion, given the unique nature of this investigation, the data previously accessible in the literature or from official institutions would never have been sufficient to conduct such an investigation; consequently, it was necessary for us to compile our own dataset.

5.4 Research questions and analysis expectations

Every survey stems from one or more research questions. It is valid from a methodological standpoint that such study questions derive from a comprehensive literature evaluation. This was the route that led to the development of this survey.

As indicated previously, the literature review revealed several gaps that needed to be filled. To discuss digital capital, Generation Z appeared to be the appropriate audience. The same holds

true for an investigation into the digital museum and the future of the museum: who better to represent future museum visitors than the youthful generation of today? The analysis of this generation's participation patterns is anticipated to aid in answering these problems. Consequently, the objective of this survey is to examine hypotheses derived from specific research topics. The initial study question is whether digital capital levels influence cultural participation. With this question in mind, it is natural to investigate whether high levels of digital capital – or digital nativity – influence cultural participation in a digital rather than physical direction, or at the very least influence the disposition and consideration of digital aspects of a field such as cultural heritage and museums. And, as was previously mentioned, Generation Z is ideal for conducting research in this area.

Three are the main hypotheses investigated in the present thesis: (i) cultural participation is related to the level of capitals of Generation Z participants and digital capital – in addition to human and cultural capital – is associated to it, especially when it comes to digitally mediated forms of cultural participation; (ii) beholding high level of digital capital, the individuals of the Generation Z do not uncritically participate in digital forms of culture – in this specific case museums; (iii) social media and art memes represent a competitive tool for digital museums to spread their learning function.

6. The data analysis and the main results

The current thesis aims to contribute to a better understanding of the role of technologies applied to museums. In order to provide a preliminary evaluation of the potential and modalities for applying the digital to museums, we analysed the participation of Generation Z, in light of their digital native status and since they represent the future cultural participants. Contrary to conventional opinion, the first major addition of our data analysis is that this generation is critical, discriminating, and selective when it comes to digitally mediated participation in culture. Possessing both high levels of digital and cultural capital – which our

findings indicate are associated with cultural participation – this generation possesses all of the skills necessary to participate in digital museums. In contrast to conventional belief, they exhibit less passion or interest in the use of technology to physical museums and digital museums. This generation does not appear to be totally receptive to the modalities in which technologies are being utilised in museums. The policy implications are various and emerges the necessity for a systematic evaluation of the effectiveness of digital instruments. The findings seem to indicate that the way technology is applied to museums is not effective, at least in the sense of attracting new audiences.

The question is not whether museums should utilise technology, but rather how they could do so. In other words, we believe – and data seem to suggest that – development of the digital museum as a service is still necessary.

This research indicates that the implementation of technologies in museums is not uncritically accepted. This generation believes that digital engagement is not determined by the technology itself, but rather by what or how it drives users to participate. Individuals in Generation Z are not enthusiastic and do not completely participate in digital museums in terms of what is now available, but there is a solid affinity for museums and all digital competencies to become dedicated digital museum participants. In other words, the digital museum as a game-changing application of technology to increase museum participation has yet to emerge.

More precisely, as a result of the data analysis, and in answering our initial three hypotheses,⁴² we observed that:

- (i) The capital logic is confirmed to apply to Generation Z's cultural participation. Individuals endowed in capitals – primarily cultural and digital, then human – are those who participate more in culture, in a greater variety of physical and digital cultural expressions, and with greater intensity;

⁴² The three main hypothesis of the present work can be summarized as follow: (i) cultural participation is related to the level of capitals of Generation Z participants and digital capital – in addition to human and cultural capital – is associated to it, especially when it comes to digitally mediated forms of cultural participation; (ii) beholding high level of digital capital, the individuals of the Generation Z do not uncritically participate in digital forms of culture – in this specific case museums; (iii) social media and art memes represent a competitive tool for digital museums to spread their learning function.

- (ii) For the Generation Z individuals, technology does not matter as such when applied to culture and more precisely to museums. They do not participate in digital culture uncritically. Generation Z is dissatisfied with the current state of things and the methods in which the digital museum is supplied as a service. This is not due to a lack of resources, capacity, or desire; they frequently visit museums and are digitally savvy as native digital users. Consequently, the dissatisfaction might likely be traced to a supply-related factor rather than a demand-related one.
- (iii) As parts of digital services associated to museums and as a new cultural expression, social media and art memes appear to be able to contribute to the learning process in museums.

6.1 The various indicators

The following text presents the analysis of the data collected through the survey specifically designed for the present thesis. The first section presents the operationalization of key concepts, and the later sections discuss the analysis and results.⁴³

In order to associate the various forms of capital with cultural participation, it is necessary to operationalize and quantify the concept of capital. Following is a breakdown of the many levels of the three capital types of interest:

- (i) To capture participants' human capital, the level of education socio-demographic variable was utilised as a proxy, as common practice in the literature (Oxley et al., 2008; European Commission, 2017). The number of individuals with higher education (university degree) and secondary education

⁴³ In APPENDIX B – Complementary Data Analysis is an investigation of elements unrelated to our initial three hypotheses.

(high school diploma) may have been underestimated due to the fact that Generation Z constitutes a very young fraction of the population. In actuality, a significant portion of this age cohort has an age that corresponds to the medium level of education (high school) as their present and unfinished degree of schooling. In order to have a sufficient number of participants from the higher education and middle education tiers, which correspond to the higher and middle levels of human capital as defined in the present work, we decided to ask the participants about their completed level of education, including their current level of education. Thus, people in their fourth or fifth year of high school are placed inside the intermediate education tier (high school) and are regarded to have developed the same amount of human capital as those who recently graduated from high school and chose not to continue their education. Those who are now enrolled in college or university are considered to be in the midst of a process in which they are building a level of human capital that is, to a good approximation, closer to that of those who have already graduated from college. In other words, we view both the completion and attendance at a particular level of education as a sign of a particular level of human capital. Given the age restrictions imposed by the specificity of our investigation, we deemed it important to employ the current education level method, even though this strategy may sound controversial and is in some ways novel.

- (ii) To capture digital capital, we have decided to develop a composite indicator comprised of two distinct sub-indicators. The first sub-indicator, through the question six (Please tell me about your digital activities and mark True or False in the following statements), aims to detect the digital competences of the participants. We have utilised and adapted DigComp 2.1, the Digital Competence Framework for Citizens made accessible by the European Commission, which provides a common definition of digital competence (European Commission, 2017). One of the suggested aspects of the framework is its adaptability and flexibility; accordingly, we have customised the framework to encompass both cultural participation and digital cultural participation. Respondents were asked to indicate whether nine claims were true or false. Based on the responses, an indicator of digital literacy, and thus

digital capital, was developed. Literature also provides examples of the adaption and application of the DigComp to detect digital capital (Ragnedda et al., 2019). The second sub-indicator for measuring digital capital is the ownership of the physical and digital assets required for digital access to cultural content. Respondents were questioned regarding their ownership of six distinct assets. A sub-indicator of digital literacy declined in this direction has thus been obtained. The concept of the ownership of tools and assets as a measure of capital may also be found in the literature (Willekens and Lievens, 2014), and it has been revised and modified to the scope of this investigation. The composite digital capital indicator is based on the average of the results of the two discovered sub-indicators; this means that we have opted to assign equal weight to the two digital capital components we have sought to assess.

- (iii) To capture cultural capital, we have decided to develop a composite indicator comprised of two distinct sub-indicators. The first sub-indicator, through the questions thirteen, fourteen and fifteen (Watch the meme. Does it represent a famous fresco in the Louvre Museum?; Watch the meme. Is this famous painter Pablo Picasso?; Watch the meme. Is this a Dadaist painting?) attempts to assess respondents' understanding of artistic and cultural content. The choice to decline the knowledge of artistic and cultural content as cultural capital indicator found its bases in the literature (Bourdieu, 1979; McCarthy, 2004). Based on the number of right responses supplied by respondents, we have generated a sub-indicator depicting the cultural capital gradient they possess. In light of the many criticisms of reductivism arising from Bourdieu's approach to cultural capital as art related knowledge (Sullivan, 2007), we have decided to create a second sub-indicator based on the concept of cultural omnivorousness (Peterson, 1992; Peterson and Kern, 1996; Peterson 2005; de Vries and Reeves 2021) – which is extensively discussed in Chapter 2. More precisely respondents were asked about their general cultural participation in the last twelve months prior to the epidemic, ⁴⁴ in thirteen distinct cultural activities, and a sub-

⁴⁴ The reference to a pre-pandemic period is due to the extraordinariness of the pandemic period which has registered an increase of participation in certain cultural contents and a decrease in others. Moreover, in light

indicator of their level of cultural omnivorousness was developed to measure their cultural capital. The composite indicator of cultural capital is based on the average of the results of the two sub-indicators; this means that we have assigned equal weight to the two components of cultural capital that we have attempted to measure.

In besides testing the correlation between the levels of capital and cultural participation – which is the specific topic and contribution of the present work – we have collected data about some of the socio-demographic characteristics of the respondents in order to compare our results to those which can be found in the literature. More specifically we are interested in comparing the results to the consolidated knowledge with regard to *age* (Gray, 2003; Borgonovi, 2004; Scherger, 2009; Willekens and Lievens, 2014; Gray 2013; Borowiecki and Prieto-Rodriguez, 2014; Falk and Katz-Gerro, 2015; Evans, 2016; European Commission, 2017b; Mihelj et al., 2019; Sokolov 2019; Ateca-Amestoy 2020; ISTAT, 2020), *gender* (Bihagen and Katz-Gerro, 2000; López Sintas and García Álvarez, 2002; Seaman, 2005; Ateca-Amestoy, 2008; Gray 2013; Muñiz et al., 2014; Ateca-Amestoy and Castiglione, 2016; Willekens and Lievens, 2016; European Commission, 2017b; Sokolov 2019; ISTAT, 2020; Suárez-Fernández, 2020) and *the size population of the place of living* (López Sintas and García Álvarez, 2002; Borgonovi, 2004; Ateca-Amestoy 2008; Scherger, 2009; Chen, 2015; Gray 2013; Borowiecki and Prieto-Rodriguez, 2014; Muñiz et al., 2014; Ateca-Amestoy and Castiglione, 2016; Brook, 2016; Evans 2016; O’Hagan, 2017).

With regard to age, we have specifically identified the Generation Z as the age cohort of the present investigation, so the respondents were born between 1995 and 2012. With regard to gender, we recognize and acknowledge the presence of a richer spectrum of genders that goes behind the binary classification of male-female which has been investigated so far in the literature. For this reason, we have included a third spectrum – non-binary – to this specific

of the recency of the pandemic, the literature on the subject shows conflicting results. At times it claims that only participation by the usual audience of participants has intensified (Pellegrini, 2020; Feder et al. 2022), at others that the audience has expanded (Bakhshi et al., 2022). Contributing to the knowledge of whether the digital shift caused by the pandemic has driven museum visitors towards digital can be viewed as a minor contribution of our research.

aspect of investigation. ⁴⁵ With regard to the size population of the place of living, this aspect is here linked to the presence of possible infrastructures and more supply favouring cultural participation in infrastructurally more endowed places. ⁴⁶

In the section that follows, we will provide some general information on the composition of the collected dataset. Afterwards, we will first analyse the investigation's findings in terms of general cultural participation, before moving on to the specific cultural participation in museums and digital museums.

6.2 Methodological limitations

This sample does not promise to detect universal facts about the target group, Generation Z. This study employs a method of data gathering that, by its very nature, has inherent constraints that are beyond the data collector's control. This is a summary of the primary argument:

- (i) The level of human capital taking into account the current education and not the completed level of education.
- (ii) The threshold of 50,000 inhabitants as an element defining cities and infrastructures.
- (iii) The algorithm favouring places where online advertisements are cheaper and the impossibility to reach nine to twelve years old participant.

⁴⁵ As far as we are aware, this is the first time that this aspect of cultural participation has been investigated. In addition, this factor contributes to the supplementary richness of the current investigation and calls for further exploration in this direction in the future.

⁴⁶ The European Commission (2012a) appears to recognise a population cap of 50,000 as the defining characteristic of a city.

Accordingly, from this point forward, every statement we make will refer to the collected sample and might be applied to the general population with the necessary care.

6.3 The general composition of the dataset

As noted previously, the total number of gross responses obtained during the survey was 1,812. After cleaning, there were 717 legitimate responses remaining. The respondents were very evenly distributed in terms of age along the range of Generation Z, however the youngest were underrepresented. In general, the research performed thus far indicates that the distribution of responses within the sample is balanced and corresponds to the distribution of the European population, according to official figures (Eurostat 2017; 2019; 2021a). Regarding gender, female and male replies were comparable (about 44 percent and 41 percent respectively). We obtained 14 percent of responses from respondents who identify as non-binary as a novel aspect in the literature. With respect to the place of living, about 3 out of 4 respondents live in places with more than 50,000 inhabitants.⁴⁷

6.4 About the respondents and their levels of capital

The sample's capital levels are described in the next three paragraphs.

⁴⁷ For more details see APPENDIX B – Complementary Data Analysis

6.4.1 Human capital distribution

To measure human capital, we have deployed the level of completed and current education as a proxy, distributing respondents within three main levels of education, corresponding to three tiers of human capital: (i) Up to middle school – 11.85 percent of the respondents; (ii) High school – 55.23 percent of the respondents; (iii) University degree (Bachelor, Master, PhD) – 32.91 percent of the respondents. On a side note, respondents living in cities and female ones show the highest share of higher education. On the contrary, non-binary respondents are the less educated ones.⁴⁸

6.4.2 Digital capital distribution

As anticipated, to evaluate digital capital – which Park (2017) defines as the factors that govern how people access, use, and engage with digital technology – we have decided to develop a composite indicator comprised of two sub indicators.

The first sub-indicator evaluates digital capital as the respondents' level of digital competencies (Ragnedda et al., 2019). The second sub-indicator evaluates digital capital as the respondents' ownership of various physical and digital assets that could facilitate their digital participation in culture (Willekens and Lievens, 2014). As a result, we have developed a composite indicator of digital capital based on the average of the results of the two sub-indicators described above. The average level of digital capital of the respondents as competences is 0.73, while the one measured as ownership is slightly lower, 0.58.⁴⁹ The average result is 0.66 – measured from 0 to 1. The age within this age cohort appears not to influence the level of digital capitals, showing that the years' threshold of this generation based on digital nativity is consistent.

⁴⁸ For more details see APPENDIX B – Complementary Data Analysis

⁴⁹ This may depend on factors related to income.

When it comes to gender, the respondents behold almost the same level of digital capital as competences – male slightly higher before rounding off the results, but female respondents behold a higher level according to ownership. Respondents living in cities behold higher levels of digital capital.⁵⁰

6.4.3 Cultural capital distribution

To operationalize cultural capital, we have created a composite indicator consisting of two sub-indicators. The first sub-indicator measures cultural capital as the respondents' level of knowledge related to artistic and cultural contents (Bourdieu, 1979; McCarthy, 2004). The second sub-indicator measures cultural capital as the level of cultural omnivorousness (Peterson, 1992; Peterson and Kern, 1996; Peterson 2005; de Vries and Reeves, 2021) behold by respondents. Accordingly, we have created a composite cultural capital indicator based on the average of the two abovementioned sub-indicators. The cultural capital of the respondents measured as cultural knowledge is 0.60, while the one measured as omnivorousness is higher, 0.69. The average result is 0.64. Female respondents behold higher capital with regard to both sub-indicators, followed by non-binary ones. Neither age nor population size appear to influence the level of cultural capital.⁵¹

⁵⁰ For more details see APPENDIX B – Complementary Data Analysis

⁵¹ See APPENDIX B – Complementary Data Analysis for more details.

6.4.4 Relationship between the different types of capital

In terms of the interaction between human capital and digital capital, we do not observe significant differences between the least and most educated. Nevertheless, given that the average year of birth for respondents with the lowest level of education is 2006, for respondents with the average level of education it is 2004 and for respondents with the highest level of education it is 1999, it appears that age has a greater impact on digital capital than education. Younger respondents possess the same level of digital capital as older respondents: one would hypothesise that in a few years, after acquiring more human capital, these same respondents could create additional digital capital, resulting in a higher level of digital capital for the same age and degree of education.

When it comes to the relationship between the level of education and cultural capital, the higher the level of education, the higher the cultural capital as knowledge – as for the literature presented in the previous chapters – with a big gap: 0.52 for the lowest level of education and 0.69 for the highest. Nevertheless, there is almost no difference when it comes to omnivorousness – 0.68 and 0.69 respectively: omnivorousness, as for literature, is related to age and not to human capital. No relationship has been found when it comes to levels of digital capital and cultural capital.

We may now proceed to the analysis of the core of our survey, Generation Z's cultural participation. We shall progress from a general to a specific level. In other words, we will explore what the collected data reveal about the cultural participation of Generation Z, before analysing participation in museums and the digital museum, respectively. Regarding the digital museum, we will analyse its different features and then provide input regarding its entertainment and educational potential as a collection of digital services provided by museums. This will allow us to proceed to a further and more specific aspect of this investigation, a link between entertainment and learning, culture and the internet, through an expressive language that represents one of the primary codes of expression of Generation Z on the web, memes, which have been defined as this generation's slang (Jeresano and

Carretero, 2022). We will conclude with a summary of the investigation's key results and potential future research directions.

6.5 The Cultural Participation of the Generation Z

To delve deeper into the analysis of generation Z's cultural participation, we will begin by examining this generation's general participation in various cultural activities. The topic, as anticipated, represents a gap in the literature that we want to address.

6.5.1 *General Cultural Participation*

Official data (European Commission, 2017b) and published research (Van Rees et al., 1999; López Sintas and Garca lvarez, 2002; Scherger, 2009; Weingartner and Rössel, 2019) demonstrate that the younger generations are the most enthusiastic cultural participants and cultural omnivores. We have opted to collect data regarding this issue via question number twenty-two. (*In the last twelve months prior to the pandemic have you...? (please estimate)*), which we have used to create one of the sub-indicators of the cultural capital. Table 4 displays the various degrees of participation in the various cultural activities investigated.

Table 4 – Participation rates of respondents in different cultural activities

Cultural Activities	Participating respondents
Listened to music	99%
Watched television	86%
Read a book for pleasure (including e-book, web novel, etc.)	86%
Played videogames	86%
Been to the cinema	85%
Visited a museum, exhibition, or cultural heritage site	83%
Painted or drawn	73%
Visited a library or archive	72%
Visited a fair or a festival	56%
Been to the theatre	52%
Sung in a choir or played a musical instrument	49%
Been to a concert	47%
Watched a ballet or opera or a modern dance performance	25%

Source: Author’s elaboration on survey data

The findings indicate that Generation Z is quite omnivorous. Ballet, opera and modern dance are the most unpopular cultural activities among this generation. One in two responders participates in concerts, fairs and festivals, sings or plays an instrument, and assists to theatrical performances. At least seven out of ten respondents participate in each of the remaining cultural activities, with the majority participating in more than eight out of ten. The most popular cultural activity is music.

According to our data study, the level of education – human capital – has a favourable relation with cultural participation of up to plus 9 percent. The sole exception is active cultural

participation (painting or drawing, singing in a choir or playing a musical instrument, and playing videogames), where the tendency is reversed with as much as a 19 percent decrease for painting and drawing. In other words, the levels of human capital are related to general cultural participation.⁵²

The average level of cultural capital as knowledge of participants is nearly identical for each cultural activity, ranging from 0.66 to 0.69, but it is greater than that of the general population, which is 0.60. In terms of cultural capital as omnivorousness, the less popular an activity is, the greater the average degree of cultural capital as omnivorousness of its participants. In this instance, the gap is greater, and the average score for cultural capital as omnivorousness ranges from 0.70 for activities such as listening to music and playing videogames to 0.85 for watching ballet, opera, or modern dance performances; the average score for the entire population is 0.69. In other words, the levels of cultural capital are associated with widespread cultural engagement.

In addition to linking capital levels to cultural participation, we are interested in linking these levels to the motivations for participation. We asked participants why they connect with cultural content in question twenty-one. On the basis of the literature (Jarness, 2015), we have determined four primary reasons to participate. Follows Table 5 displaying the outcomes of this linkage.

⁵² For more details see APPENDIX B – Complementary Data Analysis

Table 5 – Reasons for participating in culture by sociodemographic and capitals

	because they inspire me to learn something	because they represent me and tell society who I am	only when they represent forms of art	only when they represent pleasant experiences
General	51%	16%	12%	21%
Female	58%	17%	13%	12%
Male	45%	14%	12%	29%
Non-Binary	49%	19%	10%	23%
Less than 50,000 inhabitants	49%	12%	14%	24%
More than 50,000 inhabitants	52%	17%	11%	19%
Up to Middle school	45%	20%	20%	15%
High school	52%	16%	11%	21%
University degree (Bachelor, Master, PhD)	53%	15%	10%	22%
Average Cultural Capital Knowledge	0.61	0.59	0.61	0.54
Average Cultural Capital Omnivorousness	0.70	0.70	0.70	0.65
Average Cultural Capital	0.66	0.65	0.65	0.60
Average Digital Capital Competences	0.74	0.74	0.71	0.72
Average Digital Capital Ownership	0.58	0.61	0.56	0.57
Average Digital Capital	0.66	0.67	0.63	0.64

Source: Author's elaboration on survey data

Participation in culture is primarily motivated by the desire to gain knowledge, followed by the pursuit of pleasurable experiences. The higher the levels of human capital, the greater the

participation for educational and pleasure-seeking purposes. In contrast, the need to participate in culture that expresses one's identity or which represents an art form appears to increase as levels of education decrease. For both sub-indicators, it appears that the highest degree of cultural capital is possessed by people who participate in culture for learning purposes, followed by those who participate in culture when it represents an artistic form. Moreover, respondents with the lowest levels of cultural capital are those who engage in cultural activities in pursuit of pleasurable experiences. Regarding participation as a pleasurable experience and as an art form in and of itself, these results are intriguing because they appear to decouple levels of cultural capital and levels of human capital – which are always positively correlated in the literature – in a manner that contradicts the literature. This result may suggest a trait of inclusiveness in cultural participation. Furthermore, this might suggest that – contrary to common beliefs – cultural participation as a form of entertainment is not a distinctive trait of those with a low educational level. In contrast, legitimising cultural participation through the term of art participation appears to be more prevalent among less educated respondents, most likely as a type of external legitimation, more or less as a social coping mechanism or as a sort of ostentatious spending (Camic and Hodgson, 2011). If this is a result of the fact that, as previously noted, Generation Z appears to have initiated a process of emancipation of cultural participation from the highbrow-lowbrow dichotomy, is something we can only surmise: further investigation is required.

When it comes to the level of digital capital, those participating for learning purposes and to express themselves are those with the highest levels of capital.

In conclusion, the higher the level of all analysed capitals – human, digital, and cultural – the greater the levels and variety of general cultural participation, corroborating prior findings. When it comes to participation as an educational experience, the same patterns emerge. These results support our first hypothesis.

After analysing these features of Generation Z's general cultural participation, it is time to examine the specific topic of this investigation: museum participation. In the following section, we will discuss museums in general – both physical and digital – before delving into the digital museum.

6.5.2 Cultural Participation in Museums

According to our results, participation in museums is a very popular activity among members of Generation Z; 83 percent of respondents are museum-goers. It is a more feminised activity – 87 percent of female respondents, 79 percent of male respondents, and 82 percent of non-binary respondents – and it appears to be more popular in areas with a larger population – 85 percent of respondents living in areas with more than 50,000 inhabitants as opposed to 78 percent of those living in areas with fewer than 50,000 inhabitants.

In the literature (Ateca-Amestoy, 2008; Falk and Katz-Gerro, 2015) frequency of participation appears to be more influenced by sociodemographic than spot participation. We have decided to investigate it and have broken down participation into five frequency options. The majority of responders participate a few times for year (57 percent), followed by those who participate once per year (30 percent). Only 7 percent have stated they do not participate at all. Regarding the sociodemographic features and level of capitals held by respondents, Table 6 provides numerous confirmations of what has already been discovered in the literature.

Table 6 – Frequency of Museum Participation by Sociodemographic Characteristics and by Capitals

	Never	Once a year	A few times per year	Once a month	More than once a month
General	7%	30%	57%	4%	2%
Female	4%	27%	61%	5%	3%
Male	9%	33%	53%	4%	1%
Non-Binary	9%	27%	58%	3%	3%
Less than 50,000 inhabitants	8%	35%	53%	3%	1%
More than 50,000 inhabitants	7%	28%	58%	5%	2%
Up to Middle school	5%	27%	64%	5%	0%
High school	9%	30%	56%	4%	1%
University degree (Bachelor, Master, PhD)	5%	31%	56%	5%	4%
Average Cultural Capital Knowledge	0.47	0.53	0.63	0.69	0.88
Average Cultural Capital Omnivorousness	0.55	0.63	0.73	0.80	0.78
Average Cultural Capital	0.50	0.58	0.68	0.74	0.83
Average Digital Capital Competences	0.69	0.71	0.74	0.73	0.76
Average Digital Capital Ownership	0.47	0.57	0.59	0.66	0.68
Average Digital Capital	0.58	0.64	0.67	0.69	0.72

Source: Author's elaboration on survey data

Regarding all types of capital, the trend is that the higher the intensity of participation, the higher the average amount of capital owned by respondents. When it comes to cultural capital,

the gap is significantly wider: 0.47 is the average cultural capital defined as knowledge for those who never visit museums, whereas 0.88 is the average for those who frequent museums the most. The lone exception relates to human capital and the frequency of a few times each year, since individuals with the lowest degree of education have the highest proportion for this frequency. Nonetheless, this result could be explained by the fact that for this level of education, when ongoing, the respondents are influenced to participate more in museums due to school programming: this is not the case for respondents attending the highest level of education, whose attendance is almost never influenced by educational programming and may be more a matter of personal choice. In contrast, the tendency is unidirectional with relation to cultural capital and digital capital. The greater the average capital, the greater the participation intensity. In addition, the gap is persistent, as the cultural capital of those who participate with the greatest intensity is nearly double that of those who do not participate at all, ranging from plus 89 percent for the knowledge sub-indicator to plus 43 percent for the omnivorousness sub-indicator. The same association exists between digital capital and participation frequency, albeit with a smaller gap – plus 43 percent for the competencies sub-indicator and plus 10 percent for the ownership sub-indicator, respectively. In general, these results are not surprising given the addictive nature of cultural activities: participation frequency increases with experience and capital acquisition, both of which influence one's tastes. One final observation is warranted: it appears that those with the greatest human, cultural, and digital capital are the most active participants in culture and museums. These people could be regarded a special group, a capital *elite*, as they possess extremely high amounts of each capital type.⁵³ The concept of capital elite could be a further contribution of the present research and deserve further analysis in the future.

In addition to the intensity of participation in museums, we are interested in determining the characteristics of museums Generation Z participants prefer, in accordance with the demand-driven declination that this investigation reveals.

We have decided to survey this aspect through question twenty-three (*On a 1 to 5 scale (where 1 means "not at all" and 5 means "very much"), how important are the following aspects in your decision to visit a physical museum?*), consisting of a matrix table with eight items on a

⁵³ Please note that we are not referring to capital in the economic sense, as we have not investigated the respondents' income levels.

five-point Likert scale. According to the opinions of our respondents, we have ranked the various components of the physical museum explored from most to least important in Table 7.

Table 7 – Rate of importance of the different aspects of the physical museum

Physical Museum Aspects	Rate of importance on a 1 to 5 scale
The specific topic of the museum and its informative contents	4.2
The chance to learn something or to research	4
The possibility to spend time having fun	3.89
The ease of access or proximity	3.61
The opportunity to find inspiration	3.49
The sense of well-being that the visit can convey	3.34
The desire to spend time with my family and/or friends	3.14
The presence of technologies and innovations in the museum	2.73

Source: Author’s elaboration on survey data

According to Generation Z, the most essential component of a museum is its topic, indicating that cultural participation depends on tastes and that theories of taste formation are relevant to explain cultural participation (Becker and Murphy, 1988; Levy-Garboua and Montmarquette, 1996). The second most essential feature of museum participation is the opportunity to study and do research. According to this result, cultural participation confirms its role as an instrument for lifelong learning, for personal (Varbanova, 2011) and societal (UNESCO, 2019) advancement. In general, the role of museums as educational institutions is

well-established (Falk, 1999; Allen, 2003; Braund, 2004; Cook et al., 2010; Alajlan, 2020; ICOM, 2022), as is its role as a civic institution, given that culture is regarded a human right (United Nations, 1948; Kochoska and Petrovski, 2015). According to Generation Z, the opportunity to have fun is the third most important component of a museum, almost as significant as the opportunity to learn something. Since Generation Z is an experience-seeking generation (Olson and Ro, 2021), it appears that, when it comes to museums, this experience, in addition to satisfying individual preferences and being informative, must also be enjoyable. This could depend on the fact that museums – as a free time experience – are in competition with many activities, from cultural to entertainment ones.

The presence of technologies and innovation in the museum is the least important aspect among the respondents. The presence of technologies in the physical museums does not correspond to the concept of digital museums. Even though the definition of the digital museum is still evolving, it does not simply equate to a physical museum improved by in-situ technologies or the digital twin of a real museum.

When it comes to the topic of museums, which is a matter of taste, we observe that the greater the cultural capital, the greater the significance accorded to museums. Given that 0.45 is the average knowledge cultural capital value of respondents who answered 1 on the Likert scale and 0.62 is the average knowledge cultural capital value of respondents who answered 5 on the Likert scale, we can assert that knowledge of culture – thus cultural capital – is related to and could influence one's tastes.

Again, when it comes to participation in museums as a learning opportunity, the greater the cultural capital, the greater the priority assigned. The average omnivorousness cultural capital of respondents who answered 1 on the Likert scale is 0.57, whereas the average omnivorousness cultural capital of respondents who answered 5 is 0.62. This appears to indicate that the greater one's cultural capital, the greater one's capacity to appreciate and comprehend cultural content and to benefit from the educational aim of museums (ICOM, 2022). On the other hand, this could imply that museums have opportunity to increase their inclusion in order to accommodate those with lesser cultural capital – who are typically less likely to participate in this type of culture – and to help them grasp the institution's educational potential.

For both cultural capital and digital capital – the four sub-indicators and the two general indicators – the higher the capital level, the greater the inspiration-related factor. The average knowledge cultural capital of respondents who responded with a 1 on the Likert scale is 0.43, whereas the average knowledge cultural capital of respondents who responded with a 5 is 0.63. The reason appears to be straightforward. According to the theory of information, the greater the cultural capital, the greater the capacity to comprehend culture. Consequently, the capacity to comprehend and benefit from the cultural value – which improves with participation – is necessary for inspiration.

Regarding the presence of technologies in physical museums, we observe that the appreciation increases with decreasing levels of human capital and cultural capital. The use of technologies in museums could be a means for museums to be more inclusive and to draw the participation of individuals who have historically been less involved. When it comes to digital capital, which is the capital who may logically be more tied to this feature, we see that neutral responses score the highest amount of capitals. This could indicate that tech-savvy respondents do not prioritise technologies in museums and that participation in museums is not associated with technologies in a positive or negative way. In conclusion, it may appear that technologies in physical museums could be a means for these institutions to communicate its content, which could attract individuals who normally participate less – those with poorer human and cultural capital – in an effort to promote greater inclusivity.

Equally important as the motivation for cultural participation is the investigation of barriers to participation (Suárez-Fernández, 2020). We have investigated this aspect through question twenty-five (Sometimes people find it difficult to access museum sites or activities. Which of the following, if any, are the main barriers for you? (Multiple choices possible)) utilising European Commission-provided categories (2017b). Table 8 contains the results obtained.

Table 8 – Barriers to access museum sites or activities by sociodemographic characteristics and by level of capitals

	Lack of interest	Lack of time	Cost	Lack of information	Lack or limited choice in my area	Too remote or difficult to access	None
General	42%	54%	36%	22%	39%	22%	7%
Female	38%	55%	37%	26%	40%	19%	7%
Male	48%	52%	30%	19%	36%	23%	9%
Non-Binary	36%	61%	49%	20%	43%	27%	4%
Less than 50,000 inhabitants	40%	52%	43%	20%	56%	28%	4%
More than 50,000 inhabitants	42%	55%	33%	23%	33%	19%	8%
Up to Middle school	49%	55%	34%	16%	47%	16%	5%
High school	44%	56%	35%	23%	35%	22%	8%
University degree (Bachelor, Master, PhD)	35%	51%	37%	22%	43%	23%	7%
Average Cultural Capital Knowledge	0.54	0.60	0.56	0.64	0.61	0.63	0.57
Average Cultural Capital Omnivorousness	0.65	0.69	0.67	0.70	0.70	0.68	0.69
Average Cultural Capital	0.60	0.65	0.62	0.67	0.66	0.65	0.63
Average Digital Capital Competences	0.71	0.73	0.71	0.72	0.73	0.72	0.77
Average Digital Capital Ownership	0.56	0.58	0.56	0.59	0.58	0.58	0.62
Average Digital Capital	0.63	0.65	0.64	0.66	0.66	0.65	0.69

Source: Author's elaboration on survey data

Lack of time, lack of interest, lack of or limited choice in my area, and cost are the four primary barriers cited, accounting for 54 percent, 42 percent, 39 percent, and 36 percent, respectively.

When it comes to their positioning, the first two reasons conform to the official data (European Commission, 2017b), whereas Cost is the third most frequently cited reason according to official data.⁵⁴

When analysing the barriers to museum access, additional confirmations of our n.1 hypothesis – the capital rationale – are encountered.

When it comes to lack of interest – so to the respondents' preferences – the greater the level of education, the lower the likelihood of not being interested in museum participation, with a 14 percent gap between the greatest and lowest level of education. In addition, for all sub-indicators and the overall indicator, these same respondents possess the lowest average level of cultural capital among all respondents. If, according to the information theory, the greater the capital, the greater the capacity to comprehend and appreciate culture, this lack of interest could be (partially) attributable to an inability to fully comprehend and appreciate the cultural contents of museums.

Before moving on to the analysis of participation in digital museums, we would like to mention one more factor. Lack of interest and lack of time can be regarded demand-oriented barriers to museum participation, but lack of information, lack of limited choice in my area, and too remote or difficult to access can be considered supply-oriented barriers. If we cluster and analyse these possibilities, we find that supply-oriented barriers are significantly more influential in relation to population size – 75 percent versus 50 percent – whereas demand-oriented barriers are more impactful when respondents' educational attainment decreases. For the levels of cultural capital, a similar trend can be observed: demand-oriented barriers are related with lower levels of cultural capital, whereas supply-oriented barriers are associated with greater levels of cultural capital – this is true for both sub-indicators and the complete indicator. A possible explanation for the population size results could be the higher presence of infrastructures, whereas for the last two results, we can infer that the greater the level of capitals – both human and cultural – the greater the ability of respondents to understand culture and place value on it, thereby participating more and searching for products of ever-

⁵⁴ The percentages of official data are slightly different: 40% for Lack of time, 39% for Lack of interest, and 34% for Cost.

increasing quality. In other words, the analysis of the barriers to cultural participation seems to confirm our hypothesis n.1.

6.5.3 Cultural Participation in Digital Museums

The current section's analysis will serve a triple purpose: (i) testing if the patterns of participation in digital museums reflect those of cultural participation – both in general and in museums;⁵⁵ (ii) test if the level of digital capital are related to digitally mediated participation; (ii) detecting the attitude of Generation Z towards the application of technologies to digitally mediated culture.

As anticipated, the definition of the digital museum is still an ongoing process. In our view, which we hope will contribute to the concept's definition, digital museums are physical organisations that offer their services online via digital means. In other words, for the sake of this study, we consider traditional (physical) museums with a web presence to be digital museums. Other than virtual tours and digital collections, or online services aimed to enhance the physical offer of museums, we include digital communication tools within the definition of digital museums.

In the first half of this paragraph, we investigate how respondents feel about both physical and virtual museums. We asked respondents if they only attend physical museums, digital museums, or both, as well as whether they began visiting museums before or after the COVID-19 restrictions and lockdowns. The findings are presented in Table 9.

⁵⁵ Where the level of capitals is related to participation and frequency of participation.

Table 9 – Preferences and habits of museum participation

Preferences and Habits of Participation	Share of Respondents
I only interact with physical museums	67%
I engage with both physical museums and museums digital services	25%
I started to engage in museums digital services as a result of physical museums closing due to COVID-19 restrictions and lockdowns	17%
I used to interact with museum digital services before COVID-19 restrictions and lockdowns	8%
I only interact with museum digital services	2%

Source: Author's elaboration on survey data

Table 9 reveals that 67 percent of Generation Z respondents favour physical museums over digital ones, while 25 percent visit both types of museums. In other words, participation in museums appears to be connected to the physical aspect of this kind of cultural supply and to a fondness for the materiality of cultural heritage. Contrary to conventional belief, the digital native generation is fond of the materiality of cultural legacy. Nonetheless, it should be noted that the proportion of respondents who joined the digital participation of museums as a result of COVID-19 restrictions and lockdowns appears to be nearly double the proportion of those who were already participating. According to the literature, these participants are not a new audience for the museum, but they have likely transitioned from physical to hybrid participation (Feder et al., 2022). As far as emerges from the analysis of our results, the profiles of those who moved to a hybrid form after the pandemic are rather similar to those of those who already participated, in terms of all capitals: this result appears as a confirmation of such statements.

Other than the general considerations on these shares and results, could be interesting to analyse the socio-demographic stratification of these approaches to physical and digital museums.

Table 10 – Preferences and habits of museum participation by sociodemographic characteristics and by level of capitals

	After Covid	Only Physical Museums	Already before Covid	Only Digital Museums	Both Forms of Museums
Female	17%	70%	8%	2%	21%
Male	14%	68%	7%	1%	23%
Non-Binary	23%	52%	15%	2%	32%
Less than 50,000 inhabitants	16%	69%	10%	2%	20%
More than 50,000 inhabitants	17%	66%	8%	1%	25%
Up to Middle school	17%	65%	10%	1%	24%
High school	16%	68%	7%	2%	22%
University degree (Bachelor, Master, PhD)	17%	64%	11%	2%	27%
Average Cultural Capital Knowledge	0.63	0.59	0.60	0.48	0.62
Average Cultural Capital Omnivorousness	0.72	0.68	0.74	0.68	0.72
Average Cultural Capital	0.68	0.63	0.67	0.58	0.67
Average Digital Capital Competences	0.74	0.72	0.73	0.79	0.76
Average Digital Capital Ownership	0.63	0.57	0.59	0.56	0.61
Average Digital Capital	0.68	0.65	0.66	0.67	0.69

Source: Author's elaboration on survey data

Those who solely visit physical museums do not score the highest levels of cultural capital, but rather the lowest levels of digital capital. Those who participate exclusively in digital museums have the lowest level of cultural capital. Nonetheless, the most consistent finding of Table 7 is that those who visit both types of museums have the highest average amounts of both digital and cultural capital. This could suggest that when respondents have sufficient digital and cultural literacy, they enjoy the full physical and digital museum experience. These results may indicate that, in addition to the knowledge and experiences related to the specific cultural content, digital knowledge and skills are also required for participation, since they are related to the mediated cultural contents that are expressed through digital means nowadays. This result raises a significant concern. In fact, it is reasonable to assume that digital capital could be a new socio-demographic stratification element when it comes to cultural participation in digital form, signifying a disadvantage for older individuals or those who lack sufficient digital capital. If this is the case, our first hypothesis is further supported: digital capital appears to be associated with cultural participation.

In conclusion, it is crucial to note that our data appear to show that physical museums are the most popular, but that an upward trend in digital museum participation is anticipated – the doubling of participants following the pandemic. Will the digital museum substitute the physical museum? It does not appear to be the case at all. Instead, the hybrid museum seems to be the natural emerging preference.

Moving further, we have investigated reasons for participating in the digital museums through question twenty (*What is the main reason you interact with digital services of a museum?*). Table 11 contains the results.

Table 11 – Reasons for participating in digital museums

Reasons for Participating in Digital Museums	Shares of Respondents
I do not interact digitally with museums	42%
They allow me to interact with museums I cannot visit	18%
Do not know what to answer	13%
I engage with them for research purposes	7%
They increase my learning of physical museums	4%
I like technologies and innovations in general	3%
Cannot get around them	2%
I find them more relaxed and safer as museum experience	2%
I like them and actively seek to interact with them	2%
They allow me to interact with museums I have visited	2%
They are fun	2%
They inspire my creativity	2%
They allow me to interact with people who think like me	1%

Source: Author’s elaboration on survey data

In agreement with previous findings, people who do not participate in digital museums have the greatest response rates. The high number of options provided for the question has diluted the respondents among the different options. We have opted for such a high number of answers because we wanted to explore this issue in the wider form possible, with the intention to actually track a possible trend among the Generation Z. In other words, this inquiry is exploratory in nature. However, we can examine in further depth the five responses that collected the most responses, from more than thirty respondents up to three hundred, with

percentages ranging from 4 percent to 42 percent. The study of these five answers, compiled in Table 12, provides additional corroboration of earlier findings and of the hypothesis n.1.

Table 12 – Reasons for participating in digital museums by level of capital

	Do not know what to answer	I do not interact digitally with museums	I engage with them for research purposes	They allow me to interact with museums I cannot visit	They increase my learning of physical museums
Up to Middle school	15%	42%	6%	15%	1%
High school	13%	44%	6%	18%	4%
University degree (Bachelor, Master, PhD)	12%	39%	7%	18%	6%
Average Cultural Capital Knowledge	0.54	0.60	0.65	0.62	0.65
Average Cultural Capital Omnivorousness	0.65	0.68	0.76	0.72	0.76
Average Cultural Capital	0.60	0.64	0.70	0.67	0.70
Average Digital Capital Competences	0.68	0.73	0.76	0.75	0.76
Average Digital Capital Ownership	0.58	0.56	0.63	0.60	0.61
Average Digital Capital	0.63	0.64	0.69	0.67	0.69

Source: Author's elaboration on survey data

When it comes to the digital museum as a *possibility to increase the learning of physical museums* reason, it seems that the higher the respondents' level of education, the greater their preference for this answer.⁵⁶ Moreover, these respondents possess one of the highest

⁵⁶ Please keep in mind that this response earned only 4 percent – 30 responses.

levels of both cultural capital and digital capital — for all four sub-indicators and the two full indicators. Regarding digital capital and cultural capital, the same reason can be noticed for the participation for research purposes. Upon closer inspection, these two responses connect to the learning role of museums as institutions (ICOM, 2022) and demonstrate how participants with greater digital and cultural capital are able to leverage the digital museum as a tool to learn from museums and enrich the museum experience.

In contrast, those who did not know how to respond and those who exclusively visit physical museums have the lowest averages of digital capital and cultural capital, consistent with earlier findings. It appears from these results that participation in digital museums is related to the level of capitals one possesses. This could imply, in other words, that nonparticipation reflects a genuine inability to value this type of cultural source. If the ability to enjoy culture, participate in it, and place value on it has always been considered to be linked to cultural capital – or, in other words, the ability to comprehend it, as we have stated numerous times in this work – then the ability to participate in digital museums appears to be linked to both the level of digital and cultural capital. Therefore, it might be concluded that participation in a digital museum is not possible or intense if an individual lacks both cultural and digital capital, that is, if they lack the necessary capital of both culture and technology, at least when it comes to using museums as a tool for learning.⁵⁷

After analysing the reasons for participation in digital museums, it is necessary to examine the reasons for nonparticipation. We have explored this issue through question nineteen (What is the main reason you do not interact with digital services of a museum?). Results are displayed in Table 13.

⁵⁷ Please note that we are not implying that all nonparticipants are incapable of doing so. Non-participation is influenced by tastes and other factors as well.

Table 13 – Reasons for not-participating in digital museums

Reasons for Not-Participating in Digital Museums	Shares of Respondents
The experience of the museum I look for is not possible digitally	31%
I do not like the digital experience of a museum	17%
I do not think of this possibility	14%
I do not know what to answer	12%
I do interact digitally with them	11%
I do not have time	8%
I do not know how and where to interact with them	8%

Source: Author’s elaboration on survey data

31 percent of respondents stated that the museum experience they seek cannot be replicated digitally: they do not engage and do not believe the digital experience could ever appeal to them. Nevertheless, we registered a large share of respondents – 47 percent, clustering I do not have time, I do not know how and where to interact with them, I do not like the digital experience of a museum and I do not think of this possibility – which belongs to the category of non-participants who could participate under different circumstances – potential participants.⁵⁸ Table 14 allows us to consider non-participants and possible participants of our sample in greater detail.

⁵⁸ We have already anticipated this concept in 1.6 Barriers and reason for not participating: from occasional to frequent participants.

Table 14 – Reasons for not-participating in digital museums by sociodemographic characteristics and by level of capitals

	Do not know what to answer	I do interact digitally with them	I do not have time	I do not know how and where to interact with them	I do not like the digital experience of a museum	I do not think of this possibility	The experience of the museum I look for is not possible digitally
Female	10%	10%	5%	10%	16%	15%	34%
Male	16%	11%	9%	5%	19%	13%	26%
Non-Binary	7%	12%	10%	12%	16%	11%	33%
Less than 50,000 inhabitants	12%	9%	7%	12%	14%	15%	30%
More than 50,000 inhabitants	12%	11%	8%	7%	18%	13%	31%
Up to Middle school	12%	9%	12%	13%	13%	8%	33%
High school	13%	10%	7%	9%	19%	13%	29%
University degree (Bachelor, Master, PhD)	11%	12%	7%	6%	16%	16%	33%
Average Cultural Capital Knowledge	0.55	0.65	0.50	0.60	0.59	0.56	0.64
Average Cultural Capital Omnivorousness	0.65	0.73	0.64	0.66	0.72	0.67	0.71
Average Cultural Capital	0.60	0.70	0.57	0.63	0.65	0.61	0.67
Average Digital Capital Competences	0.72	0.75	0.73	0.72	0.73	0.71	0.73
Average Digital Capital Ownership	0.58	0.62	0.53	0.56	0.57	0.56	0.59
Average Digital Capital	0.65	0.68	0.63	0.64	0.65	0.63	0.66

Source: Author's elaboration on survey data

Not knowing where and how to participate in digital museums, which may be related to a lack of supply in reaching the target audience, appears to be associated with lower educational attainment. Human capital levels are greater among those who do not consider the digital

museum a possibility. In addition, their cultural capital levels are below average. Those who lack time to participate score the lowest levels of cultural and digital capital. On the other hand, those not liking the digital experience of museums, as it is currently offered, show high levels of cultural capital and of digital capital as well. ⁵⁹

In order to explain non-participation on the base of our data we can hypothesise that digital museum may not be able to reach this audience because (i) it lacks inspiring and engaging content; (ii) social bubbles are magnified on the web, making the serendipity principle and casual encounters online extremely difficult; and (iii) the audience lacks the necessary financial resources to comprehend it. Given that the capital levels of possible participants are so diverse, it appears that many could be the reasons and that the digital museum has a variety of opportunities to interact with them. This could be a chance for museums to develop. In other words, new stories, or more precisely, new methods in which digital museums might represent museal contents and functions, could potentially attract new participants. Nevertheless, when it comes to completely disengaged non-participants, they exhibit significant amounts of digital capital and cultural capital. Reasonably, this can be explained by taking into account the fact that participation is not only a matter of incapacity, but that – as we all know – tastes matter in cultural contexts. ⁶⁰

The last results we want to underline is that the actual participant in digital museums – those who underlined their participation when asked why not participating – are those with the highest levels of both cultural capital and digital capital and this confirms the capital rationale.

To conclude, the analysis of the reason for not participating seem to confirm both our hypothesis n.1 and n.2. In fact, it appears that Generation Z members who are most endowed with cultural and digital capital are those who are already engaged in digital museum participation. However, many other individuals with a high level of digital and cultural capital do not engage, possibly because they are dissatisfied with the service digital museums

⁵⁹ According to the capital rationale, they possess the potential to both understand the contents and the media.

⁶⁰ To be more precise, another interpretation and clustering of the answers is possible: 11% of the participants already participate, 42% are not reached or appealed by the museums in its digital form – clustering I do not know, I do not have time, I do not know how and where, and I do not think of this possibility – and 47% is actually dissatisfied with the digital museums services – clustering I do not like the digital experience and the experience I look for is not possible digitally. Nevertheless, those with the highest level of all capitals are still those participating in digital museums.

currently provide. This could suggest that individuals of Generation Z, who own both strong cultural and digital capital, are not neutral and are critical of how technology is applied to their experiences, at least in museums. Given the high digital capital of Generation Z participants, there is (substantial) space for improvement in how museums utilise technologies to communicate their material in an educational or recreational setting.

To conclude, it appears that while it is true that the digital transformation has been very beneficial for many productive sectors, including the cultural and creative sub-sectors, it also appears to be true that the technologies applied to museums – in the manner in which they are currently applied – are not engaging all the potentially interested participants. Participants who, beginning with Generation Z, appear to possess both cultural capital and digital capital to participate in this form of culture.

Moving further, we have investigated the intensity of participation in digital museums through question eight (Please tell me about your digital cultural activities: in the last twelve months how many times have you...? (Please estimate)), comprised of a matrix table of eight activities that we consider participation in digital museums and corresponding levels of participation frequency. In Table 15 we provide an overview of this intensity level.

Table 15 – Intensity of participation in different digital museums activities

Digital Museums Activities	Reported Intensity of Participation			
	Never	1-2 times	3-5 times	More than 6 times
Searching for information online about a museum (opening hours, ticket prices, location, etc.)	18%	30%	24%	29%
Searching (on museum websites, wikis, etc.) for information about a museum, a piece of art, a collection etc. for research or educational purposes	23%	26%	22%	29%
Searching for more information regarding a museum, a piece of art, a collection etc. AFTER seeing or interacting with a social media content of a museum	50%	26%	13%	11%
Interacting with a museum social network profile (reaction to stories, likes, comments, reposts)	57%	22%	8%	12%
Following any museum profiles on Social Network	62%	24%	7%	7%
Taking part in a virtual tour or visiting a digital exhibition of a museum	64%	27%	6%	3%
Taking part in digital classes or courses organized by a museum	84%	11%	2%	3%
Donating money to a museum digital crowdfunding campaign or joining a museum membership program	94%	5%	1%	1%

Source: Author's elaboration on survey data

Digital tours, crowdfunding and digital classes are the least popular activities, while logistics aspects and the research for information as a learning aspect are the most popular ones. This may depend on the pervasiveness of the platforms where these services are offered – such as Google – in the daily lives of the digital generation. Accordingly, the frequency of all social network-related activities falls in the middle.

Moreover, an additional noteworthy takeaway from this table is that participants had participated in digital museums significantly more than they indicated in the other questions.

⁶¹ This result is not unexpected, and we devised this question as a control one. In fact, since

⁶¹ Table 9 indicates that 67 percent of respondents exclusively visit physical museums.

the digital museum does not have an official definition – and appears still to not be part of the collective imaginary – what is perceived as participation in digital museums still must be defined and still is not perceived as such by participants. In fact, the spectrum of participation in museums is wide (Ateca-Amestoy et al., 2021) and sometimes definitions and borders blur: when guided through the meaning of digital museums, the participants declare themselves as taking part in activities which they did not know were participation in digital museums.

From the sociodemographic analysis of participation frequency, we observe the following: (i) the higher the human capital, the higher the intensity of participation and the lower the likelihood of nonparticipation; (ii) with the exception of the least popular activities – digital classes, virtual tours, and crowdfunding – the higher the capital, the higher the frequency; and (iii) with the exception of crowdfunding, the higher the digital capital, the higher the frequency.

These findings confirm earlier findings and our first hypothesis: Capitals, especially digital one, are associated to cultural participation in digital contexts. The greater a person's capital, the greater their likelihood of engaging in digital forms of culture and the greater the intensity of their participation. Consequently, the digital service offering of museums appears to have growth potential.

When it comes to cultural participation, preferences are an influential aspect. Based on this awareness, we have chosen to explore whether features of the digital museum are seen by our respondents to generate a joyful and meaningful museum participation, and to what extent. In Table 16 we report the level of appreciation of different digital museums services, which reports the results of question nine (On a 1 to 5 scale (where 1 means “not at all” and 5 means “very much”), how much the following museum services create a more meaningful and enjoyable museum visit to you?), consisting of a five-point Likert scale eight items matrix table.

Table 16 – Reported level of appreciation of different digital museums services

Digital Museum Services	Reported level of appreciation						
	Never tried it	1	2	3	4	5	Average
The museum website and related general information (opening hours, ticket prices, location, etc.)	9%	5%	8%	18%	23%	38%	3.9
Online ticket shop	19%	8%	9%	18%	22%	25%	3.6
Digital catalogue of the collection	20%	10%	12%	22%	19%	17%	3.3
The contents published on the social networks profile of the museum	19%	14%	16%	24%	17%	10%	2.9
Museum web community (social networks, wikis, etc.)	24%	15%	17%	20%	15%	9%	2.8
Additional virtual tours and digital exhibitions offered by the museum	29%	15%	14%	19%	15%	8%	2.8
Online museum shop (merchandising, gadget, etc.)	24%	24%	16%	17%	12%	6%	2.5
Museum newsletter	28%	30%	18%	14%	8%	3%	2

Source: Author's elaboration on survey data.

The most popular digital services are related to the *website* and to the *online ticket shop*, which can be considered as logistic services provided by museums to improve accessibility. As content related services, the *digital catalogue*, the *social media contents*, the *virtual tours* and the *web communities* seem to show similar appreciation by the respondents, with the *digital catalogue* scoring highest. The *newsletter* and the *online museum shop* are the services contributing the least to an enjoyable and meaningful experience of the museum.

When it comes to the analysis of the level of capitals behold by the respondents, the trend is clear: (i) beside newsletters and the shop, the higher the level of human capital, the higher the appreciation; (ii) beside the shop, the higher the cultural capital, the higher the appreciation;

(iii) beside the virtual tour, ⁶² the higher the digital capital, the higher the appreciation. Moreover, those who never tried each specific service score the lowest for both the digital and the cultural capital. These outcomes appear to support the hypothesis of hypotheses n.1 and n.2. As we have recalled, one of the main functions of the museums is related to the learning (ICOM, 2022) of their participants. As museums contribute to the education of their participants, their contribution to the growth of societies is not insignificant (Fan et al., 2016; Eurostat, 2021b; Sheykhi, 2021). With this in mind, we decided to investigate this precise function of the museum in relation to the digital museum through question ten, a five-point Likert scale six-item matrix table (On a scale of 1 to 5 (where 1 means "not at all" and 5 means "very much"), what is the impact of the following activities on the learning aspects of your museum experience?). The outcomes are shown in Table 17.

Table 17 – Reported level of contribution to the learning aspect of the different digital museum

Digital Museum Activities	Reported level of contribution learning						
	Never tried it	1	2	3	4	5	Average
Search for information online about a museum (museum website, wikis)	12%	8%	12%	20%	26%	22%	3.5
Consult the digital catalogue of a museum	33%	14%	13%	19%	14%	6%	2.8
Interact with the Social Network pages of a museum	32%	18%	17%	18%	9%	6%	2.6
Take part in virtual tours or visit digital exhibitions of a museum or collection	40%	18%	15%	13%	8%	5%	2.4
Take part in digital classes or courses organized by a museum	48%	19%	10%	10%	8%	5%	2.4
Donate money to a museum digital crowdfunding campaign or decide to join a museum membership program	57%	24%	9%	6%	3%	1%	1.7

Source: Author's elaboration on survey data

⁶² This exception could be explained by the fact that virtual tours could be viewed as a simplistic digitalization of the physical exhibition, necessitating very low amount of digital capital.

As can be seen, the website is considered as having the most impact on the learning process of museums' digital experiences. The other services regarded to contribute the most to the learning process are the digital catalogue and engagement with social network pages. Interaction with social media is viewed as having a greater impact on education than traditional educational offerings like virtual tours and visits and classes and courses. This could imply that the potential of social media as learning tools warrants further investigation and could create new opportunities for museums, providing some support for hypothesis no. 3. Simultaneously, these results seem to assess the usefulness of the efforts put into the digital presence on social networks of museums (NEMO, 2021).

When it comes to the analysis of the level of capitals behold by the respondents, we register various trends: (i) besides virtual tours, the higher the human capital, the higher the perception of the impact of the service on the learning experience; (ii) besides crowdfunding and digital classes, the highest level of cultural capitals belongs to respondents who perceive as neutral or positive the impact of the services on the learning aspects;⁶³ (iii) the highest level of digital capitals belongs to respondents who perceive as neutral or positive the impact of the services on the learning aspects.

Moreover, those who never tried the services are those with the lowest level of all capitals with few exceptions. It is worth mentioning that those with the highest appreciation of virtual tours are those with the lowest level of both cultural and digital capital, lower than those who do not participate. This could mean that (i) this specific technology could be perceived as obsolete by the participants of the Generation Z, and it could not be appreciated by those with higher capital; (ii) the technology is accessible and is appreciated by those who behold lower levels of capitals, resulting into an inclusive way of museums to involve traditionally excluded participants.⁶⁴

⁶³ When analysing Likert scales, we acted in two ways: (i) by analysing the responses with regard to the degree conferred by the respondents – on a scale from 1 to 5; and (ii) by merging the negative answers (1 and 2), leaving option 3 as a neutral answer, and merging the positive answers (4 and 5) as suggested by the literature (Marradi and Gasperoni, 2002).

⁶⁴ This correlation between low levels of capital and virtual tours is consistent with the findings of question nine and appears to provide additional support for hypothesis no. 2.

In conclusion, when it comes to the learning potential of digital museums, these data appear to validate what we have previously emphasised: (i) participation in digital museums is related to both digital capital and cultural capital – in this case, the relationship to human capital also appears straightforward; (ii) participation in digital museums appears to exhibit barriers of access: below a certain level of capital – with a gap of up to 25 percent – the individuals do not appear to participate, possibly due to an inability to comprehend the media or the content; and (iii) the social media as aspect related to learning – hypothesis n.3 – show some potentiality deserving further exploration.

6.5.4 Open questions analysis

No official definition of digital museum exists. In order to grasp the perspective of the first native generation on this digital form of culture, we have prepared this survey in an exploratory approach. In order to accomplish this, we have decided to supplement the quantitative research with a concise qualitative analysis, utilising two open-ended questions to investigate which aspects of the digital museum Generation Z prefers the most. – question eleven (Please tell me: what is your favourite digital element of a museum?) – question twelve (Why?).

6.5.4.1. Informative in-box on the method to cluster open questions

After collecting and analysing the answers to both the open-ended questions – eleven and twelve – we have decided to cluster them into various general categories through a semantic clustering. Analysing the semantic dimension of the concept of classification, in relation especially to its implications in the field of social research, one can essentially identify two large

families, which within them include (i) operations by which the extension of a concept to a given level of generality is divided into two or more narrower extensions, each corresponding to a concept placed at a lower level of generality; (ii) operations by which the objects or events of a given set are grouped into two or more subsets according to perceived similarities in their states on one or (more frequently) more properties. These subsets may then be grouped into larger subsets (Marradi, 1993). The family that we are most interested in highlighting here is the second, the one that allows us to identify groups with respect to the known properties concerning the object of investigation.

After the registration and ascertainment of the data entered in the matrix, these operations make it possible to constitute a number of types, in respect of which one proceeds by identifying a unifying concept (with related term or expression) for each particular combination (of states on the properties considered) that defines a group (Marradi, 1993). The product of this process is called a type. In order to choose the most relevant variables with respect to the research objectives, and not to exceed the number of variables, first of all the problem of selecting the relevant dimensions of the typology to be constructed must be addressed. This selection amounts to identifying what can be defined as *fundamenta divisionis* (Marradi, 2007) that will characterise the groups emerging from the classification process. In this sense, Biorcio (1993) suggests following a path that should include (i) a preliminary clarification of the sense of the classification and its purposes; (ii) the identification of the relevant aspects (the dimensions) in respect of which two 'objects' are deemed similar, on the basis of previous research and the theoretical perspective adopted; (iii) the choice of a variable, or (preferably) the construction of an index on the basis of an appropriate number of indicators, for each of the dimensions to be investigated in the group analysis process. Accordingly, we have conducted our clustering of the open questions.

When it comes to the favourite aspect of digital museums – in other words, to what is a digital museum according to the Generation Z and what they like about the application of technologies – we have encountered two approaches. The first one refers to the kind of functions, perks, or pros that the digital museums unable when it comes to participation in museums in general and the second one refers to actual *material* and *immaterial* aspects of museums taking shape through technologies. In other words, some respondents perceive the

digital museum as *how* a museum can be participated and enhanced by technologies and other respondents as *what* a digital museum is, its actual digital conformation or shape as a museum in the digital realm. ⁶⁵ A third category of respondents is composed by those not providing a favourite aspect of the digital museum – digital museum as a *not* – lacking experience, positive taste or opinion about digital museums.

Table 18 displays the distribution of respondents across the three main categories of digital museums – how, what, and not – as well as the sub-distribution of the categories discovered by clustering the responses to the survey's open-ended questions.

Table 18 – Distribution of favourite aspects of digital museums according to the respondents

Distribution of respondents' favourite aspects of digital museums	
Digital Museum as a <i>how</i>	
Logistic instrument	29%
Richness of information	24%
Storytelling and visual aspects	16%
Enhanced accessibility	9%
Digital Museum as a <i>what</i>	
Exhibitions, tours, and immersive and interactive tools	20%
Website	12%
Digital catalogue	7%
Social media contents	6%
Learning tools: classes, courses, workshops, and research related aspects	3%
Digital Museum as a <i>not</i>	
Do not know	10%
Do not like museums	9%
Never tried a digital museum	6%

Source: Author's elaboration on survey data

⁶⁵ In most instances, respondents cited more than one feature of digital museums as their favourite, indicating that a digital museum is both a what and a how.

The 25 percent of respondents who did not express an opinion on digital museums for the three reasons outlined above constitutes a not approach to digital museums. Nonetheless, this result is far lower than the 67 percent shown in Table 9. However, as already mentioned for the analysis of question eight, the explanation may appear straightforward: the boundaries of what constitutes participation in digital museums are unclear, and many participants do not realise they are actually participating in digital museums.

78 percent of respondents regard the digital museum as a how, while 48 percent consider the digital museum as a what. In other words, this indicates that Generation Z is more interested in what technologies may do to enhance their museum experience, based on their needs and preferences, than in the form that the technologies take. For instance, improving the visit is logistics appears to be the most essential component of digital museums (29 percent), followed by the wealth of information (24 percent). Exhibitions, tours, and interactive technologies are the most popular parts of museums (20 percent), followed by the website (12 percent).

When it comes to the analysis of the level of capitals, participants with the lowest level of education identify *exhibitions, tours and immersive and interactive tools (what)* and *storytelling and visual aspects (how)* as their favourite aspect. This could mean that the just mentioned categories – digital tours and storytelling – could be an instrument to include traditionally excluded cohorts of population into participation in digital museums. When it comes to the *not* of digital museums, the higher the level of education, the lowest the possibility to belong to these respondents.

When it comes to the level of capitals – both digital and cultural – we have a confirmation of the previous results. The lowest average level of all capitals – for the four sub-indicators and the two complete indicators – are all encountered in the *not* of digital museums.

When it comes to the differences between the *how* and the *what* of the digital museums' categories and the average distribution of capitals, we register none in cultural capital. On the contrary, those who reported a preferred aspect of the digital museum related to the *what* show higher levels of digital capital. This may depend on the fact that the higher the digital capital, the higher the ability to connect the experience of participation to a specific digital tool or to actually recall it when asked.

Continuing our analysis of capital, we note that the highest level of cultural capital as knowledge is recorded for those who indicated the *digital catalogue* as their favourite aspect of the digital museum. However, these same respondents show the lowest level of digital capital as ownership. Furthermore, together with those who indicated *learning tools: classes, courses, workshops and research related aspects*, they possess the lowest levels of all digital capital in general, after the respondents of the *not* of the digital museum. These two aspects are the elements of the digital museum as *what* relate to a simple digitization of physical museum services. In this sense it is not surprising that high levels of cultural capital and low levels of digital capital are found in these respondents. A hypothesis for this result is that a simple digitisation of a classic museum tool is the preferred aspect of those who have high cultural capital to appreciate cultural content, but low digital capital to the extent that they cannot imagine the use of technology other than as a simple tool for the digital transposition of heritage.

Overall, these results confirm both hypothesis n.1 and n.2, linking both the cultural and the digital capitals to the ability to appreciate and participate in digital culture and museums. Moreover, it appears that the higher the digital capital, the higher the ability to comprehend technologies whose scope go beyond the simple digitalization. In this we envision the critic spirit on the behalf of the Generation Z participants when technologies are applied to heritage. In other words, the results appear to suggest us that a certain digital literacy is necessary to participate and enjoy digital museums and to cross the barrier of *not* participation, while higher digital literacy affects the ability to imagine and recognize the digital culture as something beyond a simple digitization, envisioning the need to employ technologies beyond the simple digitalization.

To conclude, the highest average cultural capital levels belong to those who reported *social media contents* as their favourite aspect of the digital museum. These respondents behold the highest – or the second highest with low gap – of all digital capital indicators as well. These respondents seem to be able to understand the potential of everyday technologies – such as social media – and bend it specifically to the needs of culture, as in the specific case of the museum. In other words, it is the ability to understand the capability of tools that permeate reality such as social networks to serve the functions of museums and embrace their potential to disseminate culture and learning (hypothesis n.3).

The complementary analysis of open responses to the *how*, *what*, and *not* of the digital museum confirm our three hypotheses.⁶⁶ It also seems to suggest that some digital cultural tools possess a high *barrier of entry* inferred from the high levels of capital registered among our sample participant respondents and from the low levels of capital registered among our sample nonparticipant respondents. Lastly, digital museums participants seem to confirm themselves as the best endowed according to their level of both cultural and digital capital, which seems to bring to participation, understanding, appreciation and exploitation of the learning possibilities of digital forms of cultural contents.

To complete our study, we must now go on to the second open-ended question of the survey – question twelve – which relates to why the digital museum, in that we asked respondents to explain why one or more of the digital museum's aspects were their favorite(s). As previously stated, the answers to questions eleven and twelve have been clustered. For the latter, we found six answer patterns, the distribution of which is shown in Table 19.

Table 19 – Distribution of respondents' reasons for their preferences of the different aspects of the digital museum

Distribution of respondents' explications on the favourite aspects of digital museums	
Digital Museum as a <i>why</i>	
Designing and expectation	38%
Accessibility	33%
Enrichment and enhancement of the museal experience	18%
Learning and research	16%
Coolness and fun	10%
Tech for tech's sake	4%

Source: Author's elaboration on survey data

⁶⁶ In a way, this qualitative analysis with a more prominent sociological matrix complements the previous quantitative analysis by validating the choice of a multidisciplinary approach to deal with cultural participation.

The first element to note from Table 19 is that the respondents have proposed more than one reason to appreciate digital museums. The main ones are related to the *designing and expectation* related to the museum visit and the *accessibility* of the museum experience enabled by technologies. The *enrichment and enhancement of the museal experience* and the *learning and research* are popular reasons as well. The least popular are related to the *coolness and fun* of technologies and to technologies as an end in itself (*tech for tech's sake*).

In the case of the answers to question twelve, the respondents were very aware and explanatory, and the categorizations were almost driven. In general, we can affirm that Generation Z seems to know exactly what they expect from the digital experience of a museum, confirming hypothesis n.2.

Below a sample of the most emblematic answers for each category of museum as *why*, for a greater understanding of the semantic clustering of the open questions.

Table 20 – Digital Museum as a why – List of illustrative answers

Digital Museum as a <i>why</i>
Accessibility
<i>I don't always have the time or resources to visit a museum in-person, so a digital exhibition is a great way to get rid of such restrictions</i>
<i>An online museum trip takes less time an effort than a physical one, and provides a similar experience</i>
<i>Pretty self-explanatory: everything is within reach of your thumbs</i>
<i>I like to have access to information wherever I might be</i>
<i>[Digital museum] allows me to save time and travelling expenses</i>
<i>I personally live in a cultureless area, so it's really a relief to be able to see things I can't go to for real</i>

I can show some of the art from catalogue to my grandmother, who doesn't have the ability to visit museums by herself

It [digital museum] means a lot, especially if you rarely have a chance to visit any

I'm autistic and I quickly get overwhelmed in real life museums where there is too much going on at the same time

Designing and expectation

It saves time. It is a great advantage to make plans and manage time

It helps choose, whether to go to the museum or not

It allows you to avoid wasting time and you can plan your actual visit more easily if you decide to go

Because the museums I visit are outside the area where I live and knowing a range of information is necessary for me to better organize my visit

Because from there I can understand if it is a mediocre or modernized museum and decide whether to visit it or not

Usually when wanting to go to a place in general (not just to a museum) it is more convenient to search for tickets on the website rather than a physical place, which saves time and energy. In addition, after a trip to a museum, it is fun to further study the exhibitions I have looked at.

I am on the spectrum so knowing what exactly I am gonna do and see in a certain place is extremely helpful to me

Tech for tech's safe

Because we live in times where technology is important

I think they [museums] can novelty present their vibe and what they can offer

It is the "language" of my generation

Because a digital design is important for first impressions

Coolness and fun

Because they make the subject more relatable, interesting and fun

<i>Because digital is cool</i>
<i>They're [digital exhibitions] cool</i>
Enrichment and enhancement of the museal experience
<i>The comfort of my home allows me to thoroughly appreciate, discuss and share thoughts or fun facts with other people – such things are typically frowned upon in real life museums, as other people typically want to enjoy the quiet atmosphere of the place rather than hear other people ramble about an exhibition piece.</i>
<i>The experience is more personalized, it is made for you</i>
<i>Interactivity makes a museum more interesting where you can personalize your experience and make it your own</i>
<i>They are opportunities to enrich the experience by also favouring inclusion, creativity, dialogue with culturally and physically distant people</i>
<i>Because they make the subject more relatable and interesting</i>
<i>Because we live in a digital world, our attention spans and brain psychology are more suitable to short-spanning engaging content.</i>
<i>It helps to spark an interest in me to visit a particular museum and makes me have something to look forward to when visiting the museum</i>
Learning and research
<i>It helps gain information before the visit, and then after the visit, to remember what you've seen and learnt and to be able to make references later in schoolwork</i>
<i>Digital museum encourages me to go and learn</i>
<i>It helps to learn and research and sparks the interest in learning</i>
<i>Because it helps me to keep up to date with what is going on, to learn and increases my exposure to different art forms</i>
<i>You get to learn. Even if you can't go there, it's nice to see it online. That's one of the nicest parts of things being online. You get to see things that otherwise would be in other countries and learn things you couldn't have before</i>
<i>They help me learn new information from a reliable source and thus become more professional</i>

Allows me to learn more about various subjects relating to the arts and gives me inspiration for my own creativity without geographic or mental health related limitations

Source: Author's elaboration on survey data

When it comes to digital museums as a why, 33 percent of respondents mention accessibility. This reason for participating in digital museums is mostly influenced by time, money, and distance. The fact that respondents perceive digital museums as a solution for a problem associated with a resource-intensive activity such as cultural participation (Gray, 2003) is not surprising and demonstrates how technologies appear to favour cultural participation and help to overcome these limitations to participation – along with lack of interest, these were the most frequently cited barriers to participation according to our findings. Digital museums appear to be a strategy for museums to be inclusive, not only when it comes to long-distance visits, but also when it comes to the inclusion of residents of low-density culturally attractive areas and people who cannot – for various health-related reasons – participate in physical museums. According to the Council of Europe (2016), inclusive societies are intrinsically desirable, and culture can contribute to achieving this goal and the 2030 Sustainable Development Goals (UNESCO, 2019).

Within the *designing and expectation* – 38 percent of responses – we have clustered all the answers which refer to the time management, the information seeking and the actual decision to whether visit or not a museum based on the information preview made available by the digital settings of museums. When it comes to cultural participation in museums, Generation Z recognises that the digital museum minimises the information asymmetry. Since culture can be considered an experience good (Lévy-Garboua and Montmarquette, 1996; O'Hagan, 2017), the digital appears to assist in overcoming the information asymmetry posed by participants unable to judge quality prior to participation (McKenzie and Shin 2020). Moreover, although cultural participation is a resource-intensive activity, Generation Z appears to have surmounted the limits associated with participation in museums (Grey, 2003) through the use of digital technology. As stated by our respondents, the digital museum looks to be the museum's business card for Generation Z, which determines whether or not to visit based on its graphic design and information accessibility. This is also an element to be taken into account: as it has been recognised that cultural participation is addictive (Becker and Murphy,

1988) – being able to break down the first major barrier of the "first time" is an element that favours participation consistently.

The categories of tech for tech's safety and coolness and enjoyment had the fewest responses (4 percent and 10 percent, respectively). In overall, these responses indicate that a portion of Generation Z, according to their preferences, needed technologies and fun in order to enjoy museums. Technologies are regarded as a factor necessary beyond their specific function and a means of communicating with and connecting with this Generation. According to Table 16, the ability to have fun at museums is the third most important reason for Generation Z to participate. This aspect of enjoyment appears to be fostered and realised by digital technology even for those with limited financial resources.

The enrichment and enhancement of the museal experience – 18% of the respondents – collects the answers of respondents who think that the digital enriches the physical museum experience in the sense that allows a different modality to interact with artefact and a customizable experience which resonate with one needs. Generation Z being an experience-seeking generation (Olson and Ro, 2021), this component of the personalization of the museum experience through digital must be considered when it comes to museums' ability to communicate with this generation. This set of responses also appears to demonstrate that digital museums are not substitutes for traditional ones, but rather complements.

The learning and research aspects (16 percent of respondents) are also related to the dissemination of information and the educational function of museums (ICOM, 2022). According to Generation Z, the digital museum stimulates their interest in museums, enables them to recall information, and assists them in studying, learning, and conducting research. In other words, digital museums appear to be a tool for making knowledge more accessible, surpassing various resource limitations while retaining the authoritative function of museums, which continues to be acknowledged in its digital guise. The analysis of the socio-demographic stratification of the respondents⁶⁷ and their levels of capital according to their *why* of digital museums is provided in Table 21 and additionally confirm our hypotheses.

⁶⁷ The table indicates that male respondents value accessibility significantly less than their female counterparts, 25 percent versus 38 percent. On their side, female respondents place a higher value on the narratives of digital museums and the enhancement of the experience than male and non-binary respondents – 21 percent versus 16

Table 21 – Digital Museum as a why by sociodemographic and level of capital

	Accessibility	Designing and expectation	Enrichment and enhancement of the museal experience	Learning and research	Tech for tech s safe	Coolness and fun
Female	38%	37%	21%	15%	4%	8%
Male	25%	39%	16%	15%	5%	12%
Non-Binary	38%	34%	14%	22%	1%	12%
Less than 50,000 inhabitants	32%	35%	18%	17%	2%	9%
More than 50,000 inhabitants	32%	38%	18%	16%	4%	10%
Up to Middle school	29%	24%	19%	9%	3%	22%
High school	31%	39%	16%	17%	2%	10%
University degree (Bachelor, Master, PhD)	36%	39%	21%	17%	6%	6%
Average Cultural Capital Knowledge	0.63	0.65	0.68	0.65	0.44	0.51
Average Cultural Capital Omnivorousness	0.70	0.73	0.75	0.70	0.62	0.70
Average Cultural Capital	0.67	0.69	0.71	0.68	0.53	0.61
Average Digital Capital Competences	0.75	0.75	0.77	0.73	0.68	0.75
Average Digital Capital Ownership	0.59	0.60	0.60	0.59	0.60	0.60
Average Digital Capital	0.67	0.67	0.69	0.66	0.64	0.68

Source: Author's elaboration on survey data

percent and 14 percent, respectively. It appears that non-binary respondents value the learning and research aspects of digital museums more. It does not appear that the size of the place of living influences preferences in the why of the digital museum.

When it comes to the level of education, the higher the human capital the pickier the participant, in the sense that they put importance in the management of their time and experiences and prefer to design the visit and know what to expect from participation. Consequently, accessibility is valued more highly as educational attainment increases. The same holds true for education and research. In contrast, coolness and fun appear to be associated with less educated participants: as with earlier findings, this suggests that including enjoyable components into the museum experience could help include those who have traditionally been excluded from museums.

Regarding the level of cultural and digital capital, we may notice two distinct developments. The first pertains to respondents whose preferred reason for participating in digital museums is related to tech for tech's sake: they behold the lowest average level of all cultural indicators, with an extremely low score for cultural capital based on knowledge and a gap of minus 53 percent, as well as the lowest level of digital capital. This could imply that persons participating in digital museums without adequate skills – both cultural and digital – could be driven by external factors such as the assumption that digital is a necessity of the present without understanding how to maximise its potential (Van Deursen and Van Dijk, 2013; Van Deursen and Van Dijk, 2015). The second trend we can detect relates to individuals seeking richer and enhanced experiences made possible by digital storytelling: they demonstrate the highest level of all cultural and digital sub-indicators and indicators. As for the second hypothesis, Generation Z does not value the technology applied to digital museums per such, but they are selective on how technologies might enhance their experience of the past.

To summarise our findings, the ability to comprehend the possibilities of digital museums is linked, among other things, to the level of cultural and digital capital one possesses. Furthermore, as we have seen, the ability to appreciate and benefit from the storytelling enabled by level appears to be a proper ability and to belong to the best endowed cohort of population in terms of capitals.

6.6 Art Memes: digital opportunity for museums

Generation Z's appreciation of technology applied to culture and heritage – digital museum – is not uncritical, as demonstrated by the quantitative and qualitative analyses – hypothesis n.2. Since we have always been interested in the learning aspect of the digital museum, we decided to study whether and how social media may contribute to the learning function of museums. To achieve this, we chose to investigate the appreciation and use of a specific tool – art memes, understood as an expressive language that represents one of the main codes of expression of Generation Z on the web, a proper slang of this generation (Jeresano and Carretero, 2022) – as a means of disseminating the educational aspects of the museum.

Regarding the analysis of question ten, when interacting with the social media pages of a museum, individuals with the highest level of cultural omnivorousness and digital competence have the highest perception of learning. However, the results of these sub-indicators are not reflected in the overall indicator of both digital and cultural capital, which indicates that respondents with the highest level of capital view this interaction as neutral.

After viewing or interacting with a museum's social media content, over fifty percent of respondents, to varied degrees, claimed that they had searched for additional information about a museum, an artwork, a collection, etc. – see Table 18. This seems to show that museums can use social networks to convey knowledge beyond their physical locations. Our third hypothesis is based on the idea that knowledge can be disseminated when participants are simply browsing the Internet in accordance with the serendipity principle of knowledge diffusion (Cremonini, 2016). For this reason, we decided to question respondents about their habits towards art memes, which are those memes that most seem to pertain to museums, given their art related contents. In other words we are interested in two aspects: (i) try to investigate the potential of art memes for digital museums as knowledge dissemination and participants engagement tools on social networks, catching if they spark the curiosity for knowledge; (ii) in light of the awareness that the environment of social networks and cultural and creative industries is characterized by co-creation in the digital era (Bruns, 2006), question if and how the community members and participants of this generation can become active

agents in the dissemination of museums' related culture and can ignite through their actions the spark of curiosity, which could bring to further learning.

In other words, we want to examine how Generation Z interacts with art memes, what they think about them, and under what circumstances they share them, eventually becoming active agents of potential knowledge dissemination – question seventeen (Under what circumstances do you share art memes with friends or on social networks? Mark the answer that is most representative). These results may confirm for museums the opportunity to invest in this facet of the digital museum.

As shown in the Table 22, the most prevalent perspective of art memes is that they are funny (65 percent), followed by the perception that they constitute a new artistic language or method of expression (58 percent). In addition, nearly half of respondents (45 percent) believe that memes increase their interest in art. This is an encouraging result indicating the potential for art memes to be a vehicle for the diffusion of culture and a prospective instrument for the educational role of museums. As shown in Table 22, only the 3 percent of respondents find art memes useless and do not like them.⁶⁸

⁶⁸ When it comes to sociodemographic distribution, we do not observe significant gender differences, except that non-binary respondents are significantly more likely than male respondents to view art memes as a new artistic language or form of expression – 63 percent and 54 percent, respectively. Regarding the size of the place of living, we observe virtually no differences.

Table 22 – Opinion on art memes by sociodemographic and level of capitals

	They are useless and I do not like them	They are funny	They are contents that stimulate my interest in art	They are a new artistic language or form of expression
Average Share of Responses	3%	65%	45%	58%
Female	3%	62%	45%	58%
Male	4%	67%	44%	54%
Non-Binary	3%	71%	46%	63%
Less than 50,000 inhabitants	3%	68%	45%	55%
More than 50,000 inhabitants	3%	64%	45%	58%
Up to Middle school	1%	60%	33%	56%
High school	4%	65%	46%	55%
University degree (Bachelor, Master, PhD)	3%	67%	47%	62%
Average Cultural Capital Knowledge	0.68	0.59	0.59	0.60
Average Cultural Capital Omnivorousness	0.60	0.68	0.71	0.71
Average Cultural Capital	0.64	0.64	0.65	0.66
Average Digital Capital Competences	0.66	0.72	0.73	0.74
Average Digital Capital Ownership	0.60	0.56	0.59	0.59
Average Digital Capital	0.63	0.64	0.66	0.67

Source: Author's elaboration on survey data

In terms of human capital, those with the highest level of education appear to profit substantially more from memes' potential to stimulate their interest in art than those with the

lowest level of education - 47 percent versus 33 percent, respectively. Similarly, albeit with a lesser gap, memes are perceived as a new artistic language or mode of expression by 62 percent and 56 percent, respectively.

Regarding the levels of both cultural capital and digital capital, we notice an almost uniform trend. Those that believe art memes to be a new artistic language or form of expression have the highest level of all capitals, with gaps reaching up to 19 percent. Immediately following, with a minute gap, we find those who believe artistic memes boost their interest in art. Those who value the hilarious quality of memes the most exhibit the lowest levels of all capitals. However, there are exceptions: in terms of cultural capital as knowledge, persons with the most cultural capital appear to despise memes. In terms of omnivorousness, these same individuals exhibit a very low level of cultural capital, which may be indicative of their limited elasticity in cultural participation.

However, in general, the data repeatedly seem to return results in the same direction. The greater one's level of capital – cultural, digital, and, in this case, especially human – the greater one's ability to perceive memes as a new artistic language and form of expression and to feel one's artistic interests stimulated. According to the prior interpretations, capital levels appear to be required to comprehend these new cultural manifestations as creative forms and to be able to use their potential as a learning tool.

From the analysis of our data, it appears that social networks and memes have the potential to stimulate further research and interest in culture and art – fifty percent and forty-five percent, respectively. Crossing this data further, it appears that 57 percent of those who felt their interest in art was stimulated by art memes searched – to varying degrees of intensity – for more information after interacting with social media contents. More specifically, it appears that 26 percent of the total sample interacts with memes and finds them stimulating for their interest in art while also searching – to varying degrees of intensity – for more information about contents after interacting with museum's social network contents. As a result, it appears that the potential of memes on museum social networks, not only as communication tools but also as learning tools, has been confirmed: this could be advantageous for museums, especially given the relatively low economic investment required for this type of storytelling. In light of this result, it appears even more important to investigate how to potentially include

Generation Z in the process of art meme sharing, given the latter's contribution to the learning function of museums in their digital forms and sharing being one of the primary functions of social media. As anticipated, we have investigated this aspect through question seventeen (Under which circumstances do you share art memes with friends or on Social Networks? Mark the answer that is most representative). The distribution of respondents' responses about their sharing behaviours for art memes by sociodemographic variables and capital levels is shown in Table 23.

Table 23 – Habits on art memes sharing by sociodemographic and level of capital

	I usually do not share art memes	When they are funny	When they inspire me to learn something	When they represent forms of art	When they represent me and tell the society who I am
Average	18%	61%	3%	2%	16%
Female	15%	60%	2%	2%	21%
Male	18%	65%	3%	2%	13%
Non-Binary	25%	56%	4%	1%	15%
Less than 50,000 inhabitants	17%	64%	2%	2%	15%
More than 50,000 inhabitants	18%	60%	3%	2%	17%
Up to Middle school	21%	59%	4%	1%	15%
High school	20%	60%	2%	1%	17%
University degree (Bachelor, Master, PhD)	11%	64%	4%	3%	17%
Average Cultural Capital Knowledge	0.53	0.61	0.63	0.69	0.60
Average Cultural Capital Omnivorousness	0.67	0.69	0.77	0.76	0.70
Average Cultural Capital	0.60	0.65	0.70	0.73	0.65
Average Digital Capital Competences	0.69	0.74	0.78	0.73	0.74
Average Digital Capital Ownership	0.58	0.57	0.64	0.53	0.60
Average Digital Capital	0.63	0.65	0.71	0.63	0.67

Source: Author's elaboration on survey data

As shown, the presence of amusing features is the primary motivator for cultural meme sharing. This is an important factor because the benefits of fun-related environments and modalities have been demonstrated (Tisza et al., 2021). As a result, they may help to increase content reception. The ability of memes to represent an individual's personality and convey a social message is the second major factor. Art and education-related drivers score very poorly. The habits to not share art memes belong to less than one out of five respondents.⁶⁹

When it comes to the level of human capital, the lower the level of education, the higher the chance of not sharing art memes. Moreover, the element of fun seems to be more important for those with higher education. It seems so that fun art memes are more appreciated and share the higher the level of education of the individual interacting with them: this could mean as well that the most educated individuals of this generation could be using this language as an escapism mechanism.

When it comes to the level of capital, those who do not share art memes have the lowest level of all capitals, aside from digital capital as ownership. It appears that, as with digital museums, art memes are understood and appreciated at the highest level of capitals. As a result, it is possible that individuals below a certain level of capital do not participate or are unable to capitalise on the meanings and possibilities of this cultural form. Moreover, those sharing memes when inspired to learn something show the highest level of digital capital and of cultural capital as omnivorousness.⁷⁰

According to our findings, there appears to be a barrier to understanding, accessing, and appreciating art memes, as we recorded with digital museum participation in general: in other words, art meme appreciation – as cultural participation – is related to one's level of capital.

⁶⁹ When it comes to the gender of the respondents, females appear to be more likely to share, while non-binary individuals are more likely to not share. Female respondents use art memes to express themselves significantly more than male respondents do – 21% versus 13%. This may be attributable to the stereotypical perception of cultural and artistic expressions and activities, as well as the fact that artistic content tends to represent – and thus be more representative of – female bodies and identities.

⁷⁰ Please note that those who share art memes when representing art have the highest amount of cultural capital as knowledge and as a composite indicator. Still, they constitute a negligible part of the sample (2 percent)

In other words, with respect to hypothesis n.3, ⁷¹ we note that art memes appear to have the potential to engage participants and spread the spark of curiosity and knowledge, thereby influencing individual learning. This could be a huge opportunity for digital museums.

6.7 Main results

Following such a lengthy analysis, it appears necessary to go over the main findings.

To begin with, our findings appear to have confirmed all of our initial hypotheses. As a result, we can affirm that (i) cultural participation of Generation Z is related to the level of capitals of individuals; (ii) participation in digitally mediated forms of culture – digital museums – is related to digital capital other than cultural and human capital; and (iii) Generation Z is not uncritical when it comes to the application of technologies to heritage: they do not appreciate technologies as such in light of their digital nativity; As a direct consequence, we have seen (iv) a general disaffection of Generation Z with digital museums; and (v) the potential of social networks – and art memes – as a digital service of museums to enhance their learning function appears to be confirmed.

The main concepts that emerged from our data analysis are summarised below.

In terms of capitals, the digital one appears to be unaffected by gender and to be more concentrated in more populated areas. When it comes to cultural capital, female respondents appear to hold higher levels of this capital. The size of one's living space appears to have no effect on the accumulation of cultural capital. When it comes to the relationship between

⁷¹ The two stated aims were: (i) try to investigate the potential of art memes for digital museums as knowledge dissemination and participants engagement tools on social networks, catching if they spark the curiosity for knowledge; (ii) in light of the awareness that the environment of social networks and cultural and creative industries is characterized by co-creation in the digital era (Bruns, 2006), question if and how the community members and participants of this generation can become active agents in the dissemination of museums' related culture and can ignite through their actions the spark of curiosity, which could bring to further learning.

different types of capital, it appears that digital capital and human capital are not related: in this sense, we infer that age has a much greater impact on the formation of digital capital than human capital. When it comes to the relationship between cultural capital and human capital, we can confirm that level of education appears to be a good predictor of cultural participation.

In terms of general cultural participation, we can see that Generation Z is omnivorous. Participation is confirmed to be more feminised, with videogames being the only cultural activity with a high proportion of male participants. The average cultural participation rates of non-binary respondents are comparable to those of female respondents. When it comes to education, some activities appear to be positively correlated, while others appear to be negatively correlated. Nonetheless, positive correlations are not found only in traditionally considered highbrow activities, and negative correlations are not found in traditionally considered lowbrow activities. This result convinced us that the traditional distinction between highbrow and lowbrow culture could no longer hold true when it comes to Generation Z.

For museum participation, 83 percent of respondents are actual participants, and the higher the level of education, the higher the rates of participation. Furthermore, female respondents appear to participate more intensely, as do individuals from more populous areas. Male respondents appear to place a higher value on the presence of technology and innovation in physical museums.

In most cases, the higher the level of each capital, the greater the likelihood of participation. The greater the intensity of participation in all types of capital, the greater the average amount of capital owned by respondents. The most capital-endowed individuals are the most powerful participants.

Contrary to popular opinion, we discovered that Generation Z prefers physical museums to digital ones. Those who participate in digital museums do so mostly in a hybrid form (both digital and physical): these individuals have the highest average for all levels of capital, both digital and cultural. Furthermore, those who only participate in physical forms have the lowest average of digital capital, while those who only participate in digital forms have the lowest average of cultural capital. We tend to interpret these findings by assuming that those with greater digital and cultural capital can access both the physical and digital museums without bias or prejudices. Furthermore, those who participate only in physical museums appear to

lack the ability to value digital forms of culture, because participation in digital museums is not possible when the individual lacks sufficient cultural and digital capital, that is, when they lack a proper understanding of both culture and technology.

Other than age, gender, spatial infrastructures, and so on, tastes still play an important role when an individual decides to participate in museums. Other than the specific topic of a museum, learning and inspirational aspects are linked to capitals: the higher the capitals, the greater the importance attributed to these factors. Furthermore, the digital museum appears to be valued for its ability to enhance the physical museum experience: the higher the capitals, the higher the appreciation. Still, in terms of preferences, male respondents, those with lower levels of education, and those with the lowest level of cultural capital appear to value the presence of technology and innovation in museums more. As a result, technologies in museums can help these institutions become more inclusive and attract the participation of those who have traditionally been underrepresented. These findings support the idea that museums could take advantage of the storytelling enabled by technology to reach out to those who have previously been excluded.

We investigated whether social media could serve as a tool for museums to spread their content because we are interested in the learning function of museums. Generation Z perceives social media interaction as having a greater impact on education than traditional educational services such as virtual tours and visits, classes and courses. Furthermore, approximately half of the respondents – with varying degrees of intensity – stated that they had searched for more information about a museum, a piece of art, a collection, etc. AFTER seeing or interacting with a museum's social media content. This appears to imply that social networks are a good digital tool for museums to use to spread knowledge even beyond their physical boundaries.

Another finding from our analysis appears to show that 26 percent of the total sample interacts with memes and finds them stimulating for their interest in art while also searching – to varying degrees of intensity – for more information about contents after interacting with museum's social network contents. The higher the level of capitals, the more people perceive that artistic memes stimulate their interest in art. Furthermore, our findings indicate that, while art memes appear to have the ability to engage participants and spread the spark of curiosity and

knowledge, the possibility of making participants active agents of knowledge dissemination appears not so close.

Finally, our exploratory questions revealed that Generation Z perceives digital museums in four distinct ways: the how, the what, the not, and the why. The digital museum is perceived as a how by 78 percent of respondents, while the digital museum is perceived as a what by 48 percent. Moreover, Generation Z is less interested in the raw application of technology to heritage and is more interested in what technologies can do to improve their experience of the museum based on their needs and preferences, rather than the form in which the technology takes shape, which is still an important aspect of digital museums. Those who do not participate in digital museums have the lowest rates of human, digital, and capital capital.

In general, we observe that, despite Generation Z's disaffection with digital museums, there is a large share of potential participants among Generation Z, with both the digital and cultural abilities to understand and enjoy this form of culture. Our findings may inspire museums to develop digital strategies to reach this cohort: respondents do not appear to dislike digital museums, but the current digital museums do not appeal to them.

6.8 Future Insights of Research

In order to address a gap in the literature, the current data analysis highlighted certain significant characteristics of Generation Z's cultural participation. Additionally, other elements that are visible in the data analysis need more research and data gathering to perhaps support the linked statements and implications that were hypothesised. In fact, the volume and depth of the data highlighted the potential for undertaking new study based on additional gaps in the body of knowledge. Below is a list of the elements of interest that will be investigated in more detail in the future:

- I. Digital capital seems to have more of an influence on digital cultural participation than does human capital. Therefore, it is still unclear if digital technology will represent a new level of social stratification or a means of democratising cultural participation for the future generation.
- II. In terms of the population size of the respondents, the results just presented seem to indicate that, despite the fact that more populated areas contain a relatively higher concentration of cultural assets, the development of cultural capital by individuals is not overly reliant on such agglomerations, at least in the case of Generation Z. This could depend on a sort of democratisation made possible through technologies when it comes to spatial proximity or to the higher mobility of this generation: further investigation is needed in this direction.
- III. The members of Generation Z are extremely omnivorous. Our findings suggest that there is a *base* of cultural activities in which the majority of respondents participate and an *extra* of cultural activities in which a lesser percentage of the age cohort engages. Does participation in this foundation of cultural activities suffice to describe omnivores, or does Generation Z advise we expand the definition?
- IV. Linked to cultural omnivorousness is the questioning of the distinction between highbrow and lowbrow culture. Historically, cultural activities are classified as either highbrow or lowbrow. Our findings suggest that this tiering is less functional among members of Generation Z. In fact, among extra cultural participation, we find cultural activities traditionally regarded as lowbrow, such as fairs and concerts, whereas museums, exhibitions, and cultural heritage areas are popular despite cultural heritage being traditionally regarded as a highbrow cultural activity. In contrast, cultural expressions such as memes tend to be associated with those who possess the highest levels of capital. Therefore, memes should be viewed as a form of highbrow cultural activity. Is it still relevant to discuss highbrow and lowbrow culture?
- V. According to our respondents, art memes are a new form of artistic expression. Further research is required in this direction.
- VI. In light of the consistent number of respondents who identify as non-binary, the investigation into the cultural participation of non-binary individuals represents a significant opportunity for further study.

VII. In accordance with our results, in the absence of an official definition of the digital museum, there is a lack of understanding of what a digital museum is. In other words, the digital museum does not belong to the collective imaginary. Nevertheless, we discovered that individuals participate in it without knowing they are doing so. A definition is then needed. We propose to investigate the digital museums as what, how, why and not.

Conclusions

This thesis contributes to a deeper understanding of the function of technology applied to cultural heritage, namely (digital) museums, by examining cultural participation. In doing so, this thesis examines the participation of Generation Z as the first generation of digital natives: current and future participants. Previous research has examined various aspects of cultural participation, such as the determinants of participation and the reasons for non-participation, in order to provide insights on how to bring audiences closer to cultural contents so that individuals can reap the full benefits of cultural participation. The present research continues in this direction, with a particular emphasis on digitization.

Literature on cultural participation identifies cultural and human capital as major determinants of cultural participation. In the present study, we questioned whether this holds true for future cultural participants and whether digital capital is also a factor in cultural participation, particularly in digitally mediated forms of culture. This was the aim of hypothesis No. 1 (Cultural participation is related to the level of capitals of Generation Z participants and digital capital – in addition to human and cultural capital – is associated to it, especially when it comes to digitally mediated forms of cultural participation). Our findings contribute to the confirmation that the capital rationale applies to Generation Z's cultural participation. Individuals rich in

capitals – primarily cultural and digital, then human – are those who participate more in culture, in a greater variety of physical and digital cultural expressions, and with greater intensity.

In the literature on the application of technology to cultural heritage, audience growth is frequently cited as a benefit of applying technologies to the cultural sector, although an evaluation of this application is not always provided. Young people, particularly Generation Z, are frequently portrayed as the process's primary benefactors and stakeholders. We decided to explore this aspect of participation based on Hypothesis No. 2, which states that individuals of Generation Z with a high level of digital capital do not participate naively in digital forms of culture, in this case museums. Contrary to popular belief, we discovered that Generation Z seemed to prefer physical museums to digital ones. Participation in digital museums is predominantly in hybrid form (both digital and physical). Consequently, this generation looks to be quite critical regarding the employment of technologies in museums. These individuals appear to possess both the cultural and digital skills necessary for participation in digital museums. However, this form of culture does not appear to have yet discovered the most effective methods of attracting future cultural participants. In general, the digital museum tends to be valued for its capacity to enrich the physical museum's experience, regardless of the technology deployed.

Literature acknowledges the museum's educational function as one of its primary objectives. In the perspective of the present research, we have decided to investigate whether social media and art memes represent a competitive tool for digital museums to spread their learning function – hypothesis No. 3. The analysis confirms that memes are a shared language for this generation and corroborates this cultural expression's potential as a resource for the digital museum.

During data processing, findings that were not directly related to the research hypotheses surfaced. Some support what is already established in the literature. For instance, cultural participation tends to be more feminized, with female respondents possessing greater cultural capital. In addition, the concentration of digital capital appears to be greatest in densely inhabited regions. In addition, Generation Z is confirmed to be extremely omnivorous.

Other findings appear to call into question what is already established in the literature. For instance, the development of cultural capital appears unrelated to the size of the residence. Given their potential higher mobility and digital cultural participation, Generation Z seems to have liberated this form of capital from the physical infrastructure.

Other findings contribute to the investigation of undiscovered phenomena in the literature. Until now, the cultural participation of non-binary individuals has not been incorporated into the literature. Moreover, the results of the present study tend to put doubt on the conventional split of culture into brows. While museums have proven to be a popular form of culture among Generation Z, artistic memes appear to be a highbrow form whose admiration and participation are substantially correlated with the amount of capital owned.

Given the absence of official data available to assess the specificity of the investigated phenomena, the present research employed ad hoc data collecting. Despite the size of the sample, all research has inherent limitations. Aside from the possibility of (un)intentionally biased data collected through self-declared participant behaviours, the major ones concerning the present works are related to three main aspects: (i) the measurement of the level of human capital taking into account the current education and not the completed level of education; (ii) the threshold of 50,000 inhabitants as an element defining cities and, consequently, infrastructures; and (iii) the data collection through social media, which relies on the algorithms of these platforms, which favour, among other, the presence of respondents from countries where the advertisement is cheaper.

Despite these drawbacks, the current thesis fills in certain gaps in the literature and provides findings with policy implications that have significant effects. In reality, the use of technology in museums is not guaranteed to be advantageous. It is prudent to analyse the efficacy of digital technologies in a rigorous manner, given the discernment and awareness of the digital native generation. In fact, contrary to common opinion, the results suggest that Generation Z does not have a particularly strong commitment to digital museums. Ineffective, at least in terms of attracting new audiences, appears to be the current method of applying technology to museums. Generation Z appears to possess the necessary resources to participate in digital

museums; however, there is (considerable) room for improvement in how museums could apply technologies to communicate their content, whether in an educational or recreational context, when considering to attract Generation Z participants.

As a result of our data analysis, additional questions have arisen, indicating potential future directions for research. The following provides a summary:

- (i) In terms of digital cultural participation, digital capital appears to have a greater impact than human capital. Does the digital offer a sort of cultural participation democratisation for the next generation, or will it provide a new aspect of social stratification?
- (ii) It has been confirmed that Generation Z is extremely omnivorous. Our findings seem to indicate that there is a base of cultural activities in which the majority of respondents engage and a extra of cultural activities in which a lesser proportion of the age cohort participates. Is omnivorousness still an applicable term? Should we extend the omnivorousness yardstick?
- (iii) According to our responders, art memes are a new kind of artistic expression, and the higher the capital level, the greater the interaction and appreciation. Thus, may they be regarded as a new form of highbrow cultural expression? If so, are cultural brows still relevant?
- (iv) In certain instances, non-binary respondents exhibit participation patterns similar to those of female respondents, and in others, those of men. In addition, they exhibit particular patterns. What can museums do to be more inclusive about their participation?

APPENDIX A – The Survey

Dear Reader,

If you were born after 1996, please take a few minutes to complete this survey about the preferences of Generation Z with regard to participation in culture and digital cultural services.

This survey is being conducted within the framework of a PhD thesis at University of Catania. The survey is completely anonymous, and data will be used to the purpose of academic research only.

At the end of the survey, you can leave your email to participate in the extraction of Amazon Vouchers as a reward for your participation.

Thank you for your time.

i. About you

1. What year were you born? (dropdown menu)
2. What is your nationality? (dropdown menu)
3. What is your gender? (dropdown menu)
4. What is your completed level of education (including current education)?
 - i. Up to middle school
 - ii. High school
 - iii. University degree (Bachelor, Master, PhD)
5. What is the population size of the place where you live?
 - i. Less than 50.000 inhabitants
 - ii. More than 50.000 inhabitants

ii. About your Digital Activities

6. Mark true or false in the following table

	T	F
I can always identify the reliability of an information source.		
I find it easy to create a profile in digital environments for personal or professional purposes.		
I use online tools to share digital contents: Google Drive, Slide Share, e-mails, WhatsApp, Social Networks, etc.		
I feel at ease using online collaboration software to plan, track and share contents (Google Drive, Dropbox, Google Hangouts, Canva, etc.).		
I can code using programming languages (Python, Java, C++, etc.).		
I can produce complex digital content in different formats (images, audio files, text, tables, etc.).		
I respect copyright and licence rules and I know how to apply them to digital information and content.		

I regularly use online learning tools to improve my digital and creative skills (video tutorial, online courses, etc.).		
I think that what I publish on social networks condition the image that other internet users have of me.		

7. I own... (Multiple choices)

A smartphone	Y	N
A personal computer		
A tablet		
A smartwatch		
One or more subscription to streaming platforms (i.e., Netflix, Spotify, etc)		
Cloud services subscription to expand the memory of my devices (Google Storage, iCloud, etc.)		

iii. About your Digital Cultural activities

8. In the last twelve months how many times have you...? (please estimate)

	Never	1-2 times	3-5 times	5-7 times	More than 7
Searched for information online about a museum (opening hours, ticket prices, location, etc.)					
Taken part in a virtual tour or visited a digital exhibition of a museum					
Taken part in digital classes or courses organized by a museum					
Donated money to a museum digital crowdfunding campaign or joined a museum membership program					
Searched (on museum websites, wikis, etc.) for information about a museum, a piece of art, a collection etc. for research or educational purposes					
Followed any museum profiles on Social Network					
Interacted with a museum social network profile (reaction to stories, likes, comments, reposts)					
Searched for more information regarding a museum, a piece of art, a collection etc. after seeing or interacting with a social media content of a museum					

9. On a 1 to 5 scale (where 1 means “not at all” and 5 means “very much”), how much the following museum services create a more meaningful and enjoyable museum visit to you?

	Not at all 1	2	3	4	Very much 5	Never tried it / Did not know it existed

The museum website and related general information (opening hours, ticket prices, location, etc.)						
Online ticket shop						
Digital catalogue of the collection						
Additional virtual tours and digital exhibitions offered by the museum						
The contents published on the social networks profile of the museum						
Online museum shop (merchandising, gadget, etc.)						
Museum newsletter						
Museum web community (social networks, wikis, etc.)						

10. On a 1 to 5 scale (where 1 means “not at all” and 5 means “very much”), what is the impact of the following activities on the learning aspects of your museum experience?

	Not at all 1	2	3	4	Very Much 5	I have never done it
Search for information online about a museum (museum website, wikis, etc.)						
Take part in virtual tours or visit digital exhibitions of a museum or collection						
Consult the digital catalogue of a museum						
Interact with the Social Network pages of a museum						
Take part in digital classes or courses organized by a museum						
Donate money to a museum digital crowdfunding campaign or decide to join a museum membership program						

11. What is your favourite digital aspect of a museum?

12 Why?

13 Watch the meme. Does it represent a famous fresco in the Louvre Museum? (Y/N)

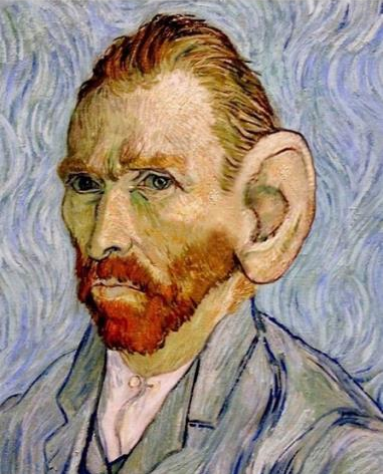
Memes cannot be art

The memes:



14 Watch the meme. Is this famous painter Pablo Picasso? (Y/N)

**When you hear your
name in a conversation**



15 Watch the meme. Is this a Dadaist painting? (Y/N)

"Your order has
been shipped"



16. What do you think about art memes? (Multiple answers possible)

- i. they are useless and I do not like them
- ii. they are just funny
- iii. they are contents that stimulate my interest in art
- iv. they are a new artistic language or form of expression

17. Under which circumstances do you share art memes with friends or on Social Networks? Mark the answer that is most representative

- v. when they represent forms of art
- vi. when they represent me and tell the society who I am
- vii. when they inspire me to learn something
- viii. when they are funny

18. What statements are the most representative for you? (Multiple answers possible)

- i. I started to engage in museums digital services as a result of physical museums closing due to COVID-19 restrictions and lockdowns.
- ii. I only interact with physical museums.
- iii. I used to interact with museum digital services before COVID-19 restrictions and lockdowns.
- iv. I only interact with museum digital services and prefer them to physical museums.
- v. I engage with both physical museums and museums digital services.

19. What is the main reason you do not interact with digital services of a museum?

- i. I do not like the digital experience of a museum
- ii. I do not think of this possibility
- iii. I do not have time
- iv. I do not know how and where to interact with them

- v. The experience of the museum I look for is not possible digitally
- vi. I do interact digitally with them
- vii. Do not know what to answer

20. What is the main reason you interact with digital services of a museum?

- i. I like them and actively seek to interact with them
- ii. Cannot get around them
- iii. They allow me to interact with museums I cannot visit
- iv. They increase my learning of physical museums
- v. I like technologies and innovations in general
- vi. They allow me to interact with people who think like me
- vii. They are fun
- viii. They inspire my creativity
- ix. I engage with them for research purposes
- x. I find them more relaxed and safer as museum experience
- xi. They allow me to interact with museums I have visited
- xii. I do not interact digitally with museums
- xiii. I do not know what to answer

iv. About your Cultural activities

21. Select the most representative answer. I usually engage with cultural contents...

- i. only when they represent forms of art
- ii. because they represent me and tell society who I am
- iii. because they inspire me to learn something
- iv. only when they represent pleasant experiences

22. In the last twelve months prior to the pandemic have you...?

	Y	N	I do not remember
visited a museum, exhibition, or cultural heritage site			
been to the cinema			
visited a library or archive			
been to the theatre			
watched a ballet or opera or a modern dance performance			
been to a concert			
listened to music			
watched television			
visited a fair or a festival			
read a book for pleasure (including e-book, web novel, etc.)			
painted or drawn			
sung in a choir or played a musical instrument			
played videogames			

23. On a 1 to 5 scale (where 1 means “not at all” and 5 means “very much”), how important are the following aspects in your decision to visit a physical museum?

	Not at all 1	2	3	4	Very much 5	I do not know what to say
The ease of access or proximity						
The specific topic of the museum and its informative contents						
The presence of technologies and innovations in the museum						
The desire to spend time with my family and/or friends						
The possibility to spend time having fun						
The opportunity to find inspiration						
The chance to learn something or to research						
The sense of well-being that the visit can convey						

24. How often did you visit physical museums prior to COVID-19 lockdowns and restrictions?

- i. Never
- ii. Once a year
- iii. A few times per year
- iv. Once a month
- v. More than once a month

25. Sometimes people find it difficult to access museum sites or activities. Which of the following, if any, are the main barriers for you? (Multiple answers possible)

- i. Lack of interest
- ii. Lack of time
- iii. Cost
- iv. Lack of information
- v. Lack or limited choice in your area
- vi. Too remote or difficult to access
- vii. None

Thank you for taking the time to finish the survey.

You are welcome to leave your email if you would like to participate in the extraction of Amazon Vouchers as a reward for completing the survey or if you would like to receive a copy of the results.

Please share the survey with your friends to support the research and to make it possible for them to participate in the lottery of Amazon Vouchers.

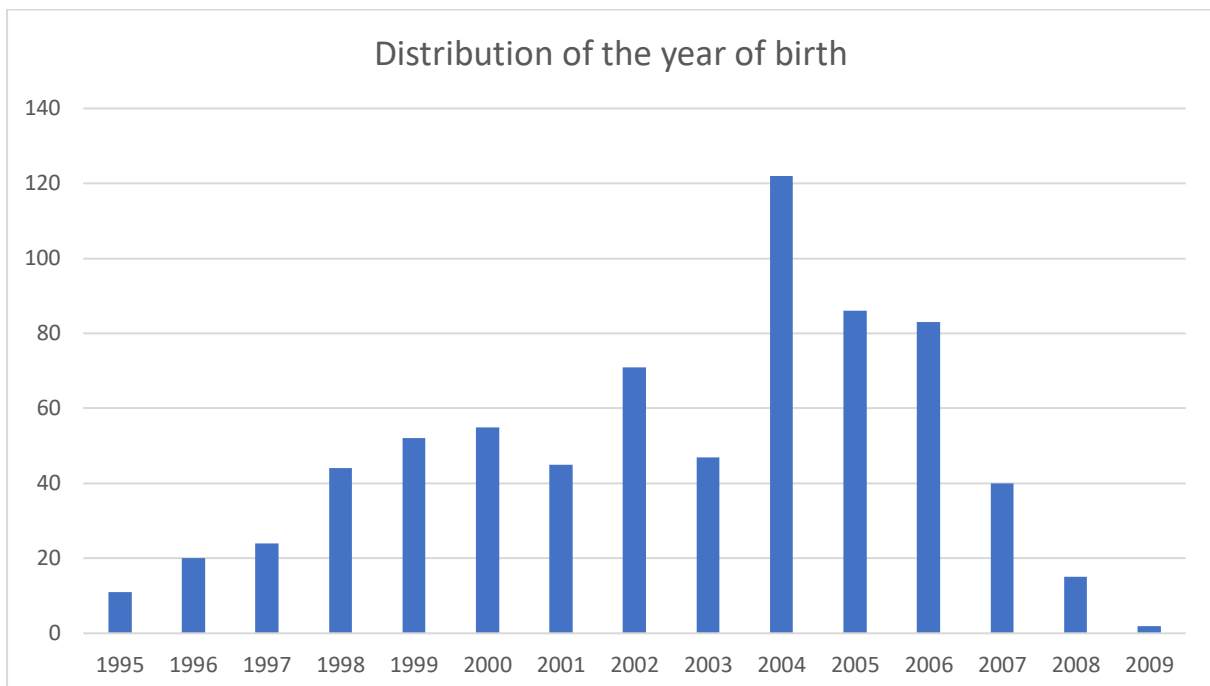
Please contact me if you have any questions at stefano.russo@phd.unict.it

APPENDIX B – Complementary Data Analysis

Our investigation focuses on Generation Z, the first digital native generation. We have decided to include all those born between 1995 and 2012 in this generation. This range was chosen based on the literature, which presents several alternatives in this regard. See Dolot for a more in-depth explanation (2018).

Trough question number one (Please tell me about you, what year were you born?) We have collected information regarding the respondents' birth years. The median birth year of responders is 2004, whereas the mean is 2003. Figure A depicts the distribution of respondents' ages at birth.

Figure A – Distribution of the year of birth of the respondents



Source: Author's elaboration of proprietary data

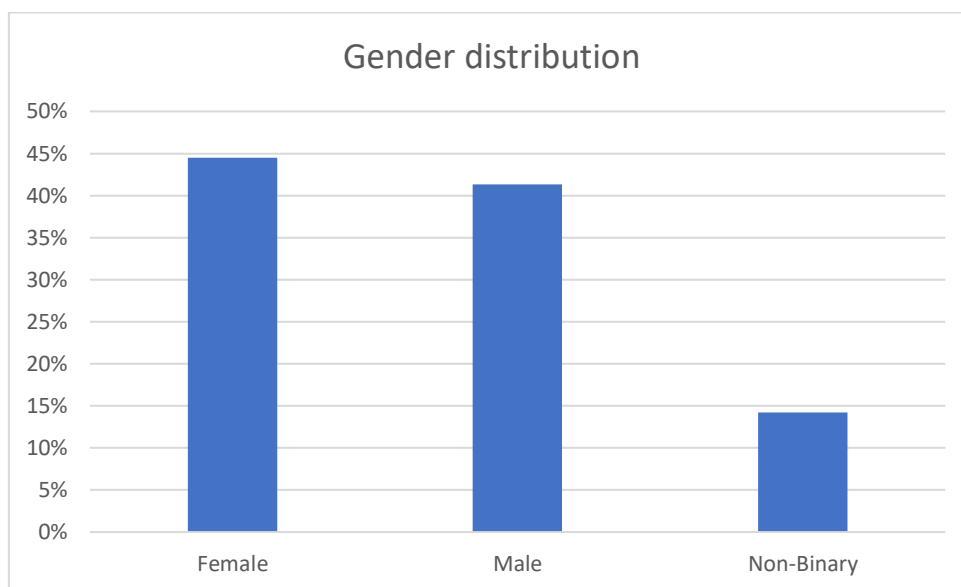
On the x-axis is the year of birth, while the y-axis represents the number of responders for each year. The distribution of respondents resembles an inverted U almost exactly. The most recent years of the age cohort are underrepresented (2009 to 2012). These respondents, ranging in age from thirteen to nine, have been difficult to reach through the social media technique

employed and, in general, would have been difficult to reach in any other way, not without challenges and legal implications due to their young age.

Since the purpose of this study was to research the cultural participation of Generation Z in Europe, another criterion for assembling and cleaning the data was the respondents' location of living. We have collected information from the entire continent. We must recognize that some countries are more largely represented in the sample than others. This may have hinged on the algorithm of Meta, which we remind the reader was the platform through which the poll was circulated, as advertising in certain regions of Europe is unquestionably less expensive than advertising in other regions. Please note that this does not depend on the author's intent, but rather on the platform's content distribution. However, all European nations are represented in the sample.

With regard to the gender – question three (*What is your gender?*) – the distribution of the respondents can be observed in Figure B.

Figure B – Gender distribution of the respondents



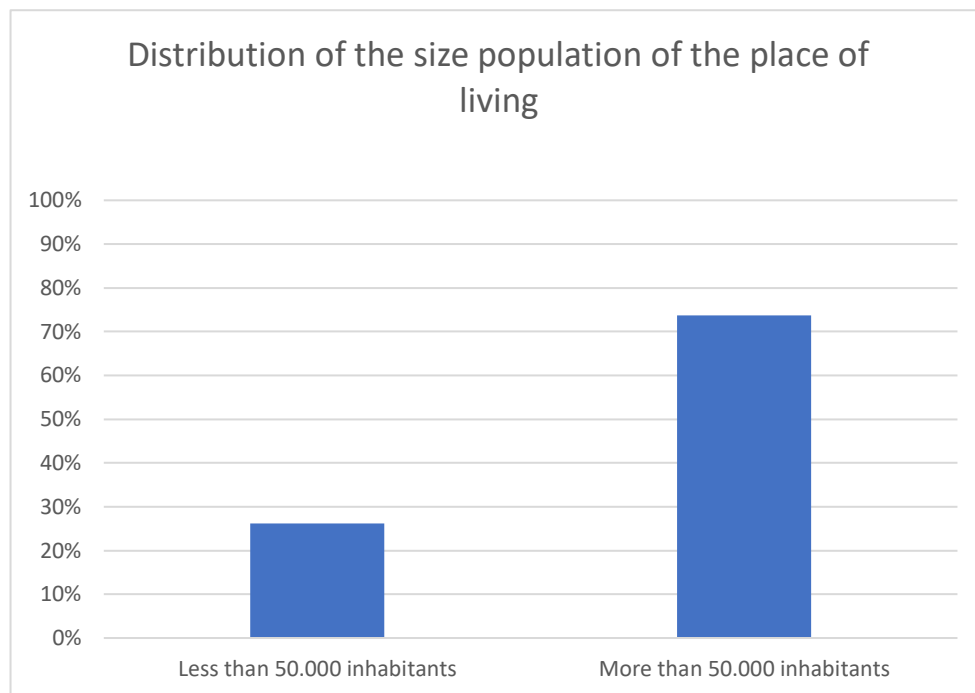
Source: Author's elaboration of proprietary data

There are nearly equal numbers of female and male respondents, with 44.49 percent and 41.28 percent, respectively. This discrepancy is comparable to that recorded at the European

level (Eurostat, 2021a). Nonetheless, a crucial piece of data was acquired from the 102 respondents who identified as non-binary, or more than 14 percent. This is a very significant result that detects societal changes that official statistics have difficulty measuring. Moreover, this data is not only a novelty and a significant contribution of the present work – since there is no research on non-binary individuals in terms of cultural participation in the existing literature – but it also opens up the possibility of using the data collected in the present work for future research.

With regard to the size of the place of living of the respondents (What is the population size of the place where you live?) – the majority live in urban centres – as for official data (Eurostat, 2019). About a quarter of the sample resides in areas with fewer than 50,000 people, while the remaining three quarters reside in areas with more than 50,000 people, as displayed in Figure C.

Figure C – Distribution of the size population of the place of living of the respondents

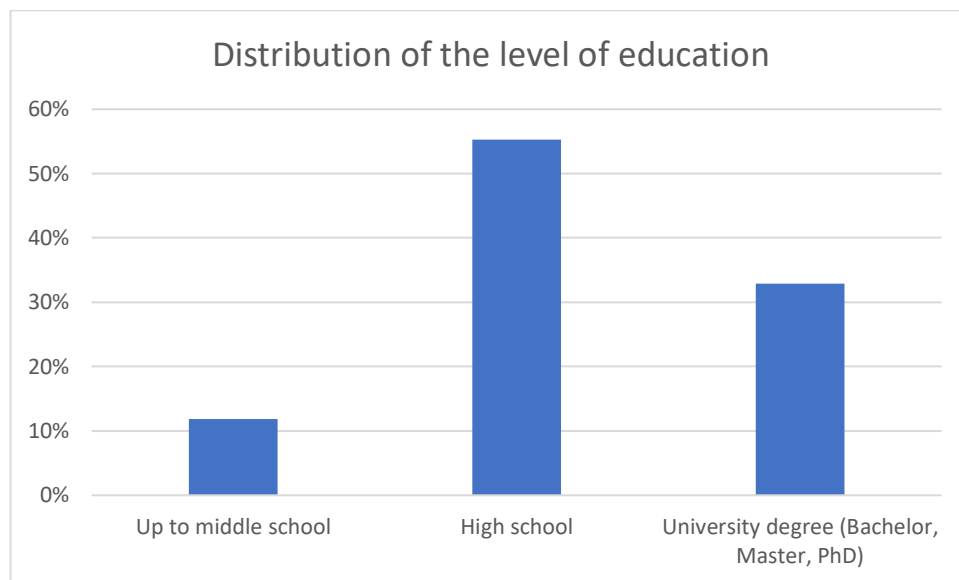


Source: Author's elaboration of proprietary data

Human Capital

Regarding human capital, we have chosen to use the socio-demographic variable of education level as a proxy (Oxley et al., 2008; European Commission, 2017). Through question four (What is your completed level of education (including current education)?) we have decided to distribute respondents within three main levels of education, corresponding to three tiers of human capital: (i) Up to middle school; (ii) High school; (iii) University degree (Bachelor, Master, PhD). Figure D depicts the distribution of respondents' levels of education.

Figure D – Distribution of the level of education of the respondents



Source: Author's elaboration of proprietary data

Because we have decided to detect the degree of education, including current education, it is difficult to locate official data to compare ours to. Nonetheless, our findings are similar to those reported in Europe (Eurostat, 2022). Given the young age of the majority of the age cohort, authoritative data on Generation Z is difficult to come by. In our sample, 11.85 percent of respondents have completed middle school, 55.23 percent have a high school diploma or are now enrolled in high school, and 32.91 percent have a university degree or are currently enrolled in university.

Aside from the simple distribution of the sample's level of education, it is useful to examine the distribution of human capital in light of the other socio-demographic parameters identified by our survey.

If we cross reference the level of education with the size of the place of living of the respondents, we observe that there is a higher level of education in centres with more than 50,000 inhabitants (see Table A).

Table A – Distribution of the level of education by the size of the place of living

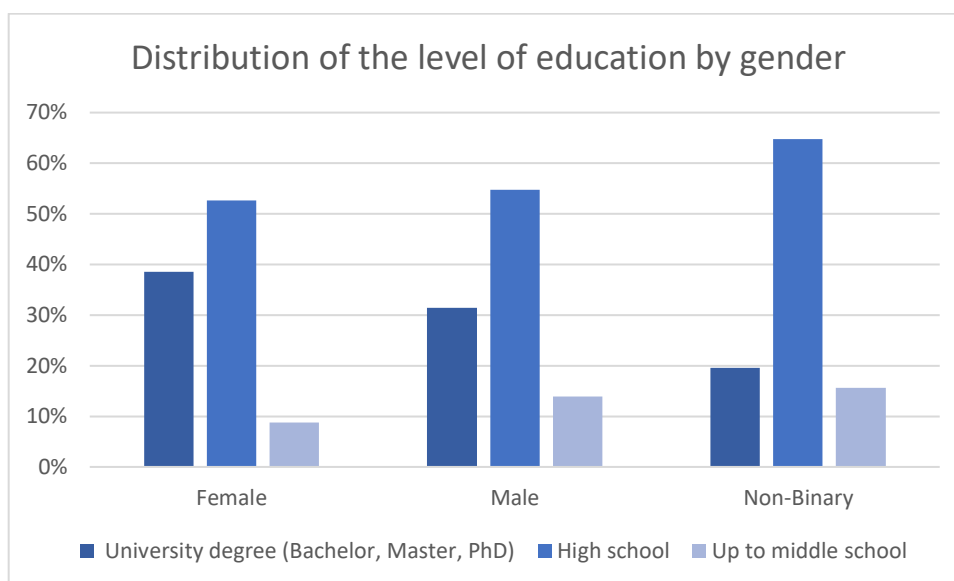
	University degree (Bachelor, Master, PhD)	High school	Up to middle school
Less than 50,000 inhabitants	30.32%	54.26%	15.43%
More than 50,000 inhabitants	33.84%	55.58%	10.59%

Source: Author's elaboration of proprietary data

The same trend can be observed in official data (Eurostat, 2017). Apparently, the size of the place of living acts as facilitator of the development of the level of education. Nevertheless, the differences are not so substantial, as official data record (Eurostat, 2017).

If we cross-reference the level of education with the gender of the respondents, we find that females have a greater level of tertiary education, which is consistent with official data (Eurostat, 2021a). The sample distribution can be examined in Figure E and Table B.

Figure E - Distribution of the level of education of the respondents by gender



Source: Author's elaboration of proprietary data

Table B - Distribution of the level of education of the respondents by gender

	University degree (Bachelor, Master, PhD)	High school	Up to middle school
Female	38.56%	52.66%	8.78%
Male	31.42%	54.73%	13.85%
Non-Binary	19.61%	64.71%	15.69%
Average	29.86%	57.37%	12.77%

Source: Author's elaboration of proprietary data

The female respondents have the highest tertiary education levels and the lowest elementary education levels (up to middle school). In contrast, non-binary respondents have the lowest tertiary education level and the greatest primary education level, making them the least educated respondents overall. If the results of female respondents confirm what has already been recorded by official statistics (Eurostat, 2021a), the results of non-binary respondents cannot be compared to any official data and are therefore somewhat surprising. The year of birth of the respondents is a potential first explanation for this phenomenon. Younger individuals may find it simpler to identify with this gender. The younger a person is, strictly

speaking, the more likely they are to rank among the lower levels of education, since age is a prerequisite for access to the highest degree of education. In fact, over fifty percent of the non-binary population was born after 2004.

Digital Capital

We have defined digital capital as the conditions that determine how people access, use, and engage with digital technology (Park, 2017). We needed to operationalize this wide concept for the purposes of our analysis. To move further, we have opted to create a composite indicator comprised of two sub-indicators.

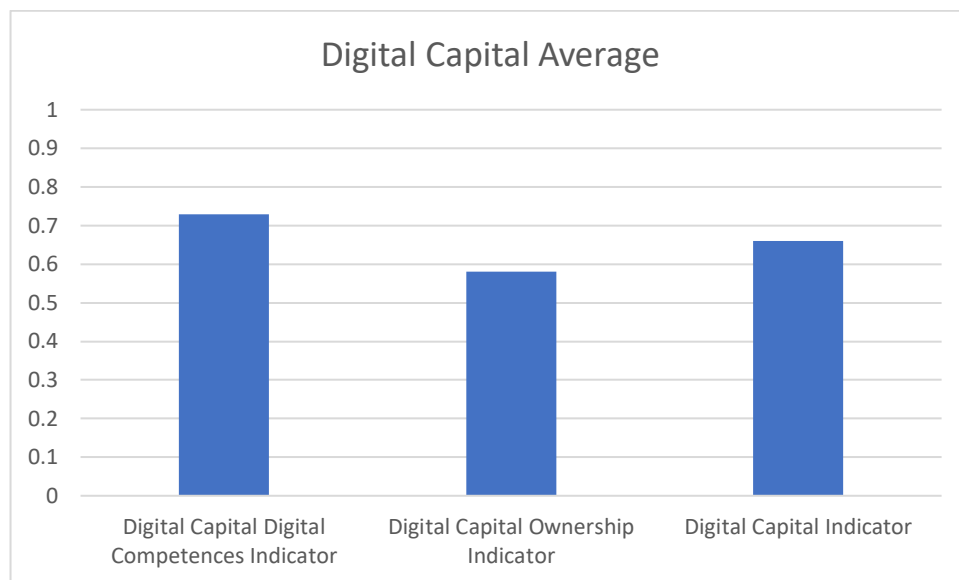
The first sub-indicator measures digital capital as the respondents' level of digital competencies (Ragnedda et al., 2019). As previously mentioned, it is based on an adaptation, designed by the author, of the DigComp 2.1 framework, the Digital Competence Framework for Citizen (European Commission, 2017). This declination of digital capital has been investigated through question six (Q6 Please tell me about your digital activities and mark True or False in the following statements), a matrix table consisting of nine items detecting the self-reported digital competences of the respondents. This sub-indicator will henceforth be known as the Digital Capital Digital Competences Indicator. The second sub-indicator measures digital capital as the respondents' ownership of various physical and digital assets that could facilitate their digital participation in culture (Willekens and Lievens, 2014). This declination of digital capital has been investigated through question seven (I own...), a matrix table consisting of six items. This sub-indicator will henceforth be known as the Digital Capital Ownership Indicator. As a result, we have produced a composite digital capital indicator based on the average of the gradient findings of the two previously described sub-indicators, allocating equal weight to the two dimensions. This metric will hereafter be known as Digital Capital Indicator.

In the following part, we will analyse the degree of digital capital of the respondents based on their socio-demographic factors. To do this, we will utilise the composite indicator, Digital Capital Indicator, as the outcomes of the two individual indicators are quite comparable. When

we identify significant variations between the outcomes of two sub-indicators, we will highlight them in the text.

Regardless of their birth year, all members of Generation Z own a comparable amount of digital capital. This outcome is positive for at least two reasons: (i) the grouping of the birth years of Generation Z, which we recall was considered a generation in terms of their digital nativity and thus their digital capital levels, is appropriate and consistent; (ii) the ways in which digital capital has been measured in the present study appears to have been appropriately designated. In addition, as shown in Figure F, the level of digital capital among respondents tends to range from moderate to high.

Figure F – Average level of digital capital of the respondents



Source: Author's elaboration of proprietary data

The respondents' digital capital, evaluated as digital competencies, is 0.73, while their digital capital, measured as ownership, is 0.58. The mean outcome is 0.66. Every outcome is measured on a scale ranging from 0 to 1. The reason why digital capital assessed as ownership is lower could be related to economic factors, as the ability to possess one or more of the analysed assets could also be contingent on the availability of economic resources. Due to the influence of another socio-demographic feature, such as income, it would be inadequate to measure digital capital based solely on equipment ownership.

The outcomes of a gender-based analysis of the distribution of digital capital among participants are presented in Table C. In this instance, as the outcomes of the various sub-indicators are clearly different and distinct from one another, we opted to add references to both sub-indicators alongside the composite indicator.

Table C – Distribution of the digital capital of the respondents by gender

	Digital Capital Competences Indicator Average	Digital Capital Ownership Indicator Average	Digital Capital Composite Indicator Average
Female	0.73	0.60	0.68
Male	0.73	0.56	0.65
Non-Binary	0.73	0.58	0.65

Source: Author’s elaboration of proprietary data

According to our findings, men respondents have a marginally higher level of digital capital based on digital competencies than their female counterparts. This result is consistent with other research (Casillas Martin et al., 2017; Equals and UNESCO, 2019; Perifanou and Economides, 2020) that has documented men's greater digital competency. Nonetheless, our result is reversed in terms of digital capital based on ownership, with female respondents having more capital with a larger difference than male respondents. This is consistent with previous findings identified in the literature, such as the utilisation of devices by females (Cozar and Roblizo, 2014) and their attitudes toward them (Casillas Martin et al., 2017). The average digital capital, as determined by the composite indicator, attributes greater digital capital to women. In terms of skills, non-binary respondents hold the same digital capital as female respondents, and in terms of ownership, they possess the same digital capital as male respondents. According to the literature (Ragnedda et al., 2019; Basantes-Andrade et al., 2020), our findings confirm that gender appears to have less of an effect on digital capital than age.

Analysing the distribution of digital capital in relation to the size of the respondents' place of living yields results consistent with official figures (European Commission, 2021a), with higher concentrations of digital capital in more populous places.

Table D – Distribution of the digital capital of the respondents by the size of the population

	Digital Capital Digital Competences Indicator Average	Digital Capital Ownership Indicator Average	Digital Capital Indicator Average
Less than 50,000 inhabitants	0.71	0.54	0.62
More than 50,000 inhabitants	0.74	0.59	0.67

Source: Author's elaboration of proprietary data

These outcomes, which appear to hold true for both the distribution of competencies and the ownership of digital devices, are also consistent with the existing literature (European Commission, 2016; Ragnedda et al., 2019). In general, a digital divide (Van Deursen and Van Dijk, 2013; Van Deursen and Van Dijk, 2015; Calderon Gomez, 2018) between urban and rural locations can be detected (Kos-Labedowicz, 2017) within our sample (Van Deursen and Van Dijk, 2013; Van Deursen and Van Dijk, 2015; Calderon Gomez, 2018). This divide may be explained by a number of systemic factors, the most significant of which are the cumulative nature of innovation and learning processes, the localised nature of spillovers, externalities, and systemic interactions in the process of generation and economic exploitation of technology (European Commission, 2016), all of which favour the development and concentration of digital capital in urban settings among individuals. The ageing of the population and the progressive depopulation of rural areas could be an additional explanation (Kos-Labedowicz, 2017) for the phenomena of the digital divide between rural and urban areas, which also appears to persist in Generation Z, albeit to a lesser extent.

Despite the fact that urban environments tend to provide better access to public services and a wider variety of options, it must be remembered that income, age, and education are more closely related with the use of information technologies than geographical location (Hindman, 2000). In this perspective, the favourable relationship between status indicators and technology use tends to strengthen over time. In contrast to utopian forecasts of the universal

advantages of the tools of the digital revolution, innovative uses of information technologies are expected to remain intimately related with social indicators (Hindman, 2000) and to exacerbate disparities (Mihelj et al., 2019).

Cultural Capital

To operationalize cultural capital, we have chosen to develop a composite indicator consisting of two sub-indicators, just as we did for digital capital.

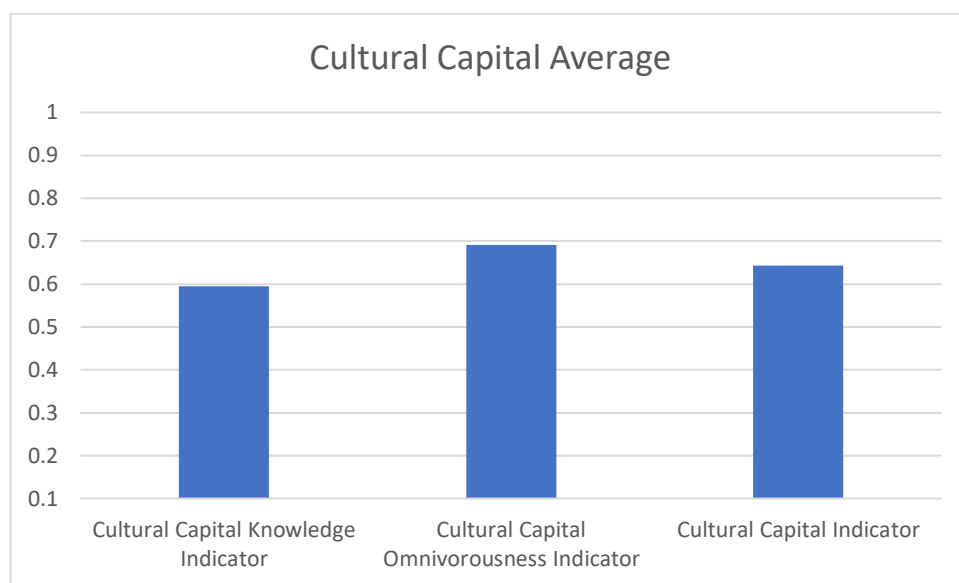
The first sub-indicator created evaluates cultural capital as respondents' artistic and cultural content-related knowledge (Bourdieu, 1979; McCarthy, 2004). This declination of cultural capital has been investigated through questions thirteen, fourteen and fifteen (Watch the meme. Does it represent a famous fresco in the Louvre Museum?; Watch the meme. Is this famous painter Pablo Picasso?; Watch the meme. Is this a Dadaist painting?), composed of texts and images – memes. On the basis of the correct responses, a gradient table representing the respondents' knowledge, and consequently cultural capital, was constructed. This sub-indicator shall henceforth be known as the Cultural Capital Knowledge Indicator.

The second sub-indicator of cultural capital assesses respondents' cultural omnivorousness (Peterson, 1992; Peterson and Kern, 1996; Peterson, 2005; de Vries and Reeves, 2021) This declination of cultural capital has been investigated via question twenty-two (In the last twelve months prior to the pandemic have you...? (please estimate)), through which the respondents were asked about their participation in thirteen different cultural activities. To quantify their level of cultural capital, a gradient measuring their level of cultural omnivorousness was developed. The theoretical basis for this decision is documented in the literature (Becker and Murphy, 1988; Levy-Garboua and Montmarquette, 1996; Seaman 2006; Castiglione and Infante, 2015). This sub-indicator shall henceforth be known as the Cultural Capital Omnivorousness Indicator.

As a result, we have produced a composite cultural capital indicator based on the average of the gradient values of the two previously described sub-indicators, allocating equal weight to the two dimensions. This indicator shall hereafter be referred to as Cultural Capital Indicator.

Figure G indicates that the amount of digital capital among the respondents appears to be moderately high.

Figure G – Average level of cultural capital of the respondents



Source: Author's elaboration of proprietary data

The respondents' cultural capital measured as cultural knowledge is 0.60, whereas that measured as ownership is 0.69. The mean outcome is 0.64. Every outcome is measured on a scale ranging from 0 to 1. In accordance with the findings of the literature (Scherger, 2009), it would appear from these results that respondents are fairly omnivorous and slightly less educated regarding cultural contents yet demonstrating a decent degree of knowledge.

When analysing the distribution of cultural capital with respect to the gender of the participants, we obtain the results contained in Table E.

Table E – Distribution of the cultural capital of the respondents by gender

	Cultural Capital Knowledge Indicator Average	Cultural Capital Omnivorousness Indicator Average	Cultural Capital Composite Indicator Average
Female	0.63	0.71	0.67
Male	0.57	0.66	0.61
Non-Binary	0.57	0.71	0.64

Source: Author's elaboration of proprietary data

Female respondents possess a greater amount of cultural capital for both sub-indicators. In terms of knowledge (Stevenson et al., 2002) and participation in general (Dumais, 2002; Sokolov, 2019; Suárez-Fernández, 2020), this represents a confirmation of the literature. One possible explanation is that traditional gender stereotypes play a role in men's lack of cultural participation, whereas women may be encouraged to use their cultural capital to succeed in school (Dumais, 2002) or in their careers (Ul Hassan et al., 2020). In fact, women's cultural capital may be more valued on the labour market, as arts and humanities-related professions tend to be more feminised (Suárez-Fernández, 2020). The results of non-binary respondents are remarkably similar to those of male respondents in terms of knowledge and to those of female respondents in terms of omnivorousness. This aspect will be investigated in future research contexts.

The results of analysing the distribution of cultural capital in relation to the size of the respondents' place of living, as shown in Table F, are encouraging, as it appears that the population size of the place of residence has no real effect on the development of cultural capital.

Table F – Distribution of the cultural capital of the respondents by the size of the population

	Cultural Capital Knowledge Indicator Average	Cultural Capital Omnivorousness Indicator Average	Cultural Capital Indicator Average
Less than 50,000 inhabitants	0.60	0.69	0.65
More than 50,000 inhabitants	0.59	0,69	0.64

Source: Author's elaboration of proprietary data

Even though urban environments have a greater concentration of cultural assets, the development of cultural capital by individuals is not overly dependent on such agglomerations, at least for Generation Z. In other words, contrary to what has been observed in the literature (Gray, 2013, O'Hagan, 2017), it appears that the population density of the living place has no bearing on cultural participation and the subsequent accumulation of cultural capital for this generation. However, it may still have an effect on the participation of other segments of the population (Evans, 2016). As mentioned, the opportunities present in an area may serve as enablers for cultural participation, given that spatial proximity-related obstacles (Scherger, 2009) and the presence of shadow costs (Borgonovi, 2004) impact a resource-intensive activity like cultural participation. Nevertheless, it must be noticed – as already mentioned – that the habitat size determines frequency but not probability of attending (Ateca-Amestoy 2008, Borowiecki and Prieto-Rodriguez, 2014), which depends more on education and income. Therefore, it may be possible to foresee how, for this digitally native generation, the internet's possibilities could compensate for the lack of physical assets and facilitate cultural participation, bridging the rural-urban divide. Cheng (2015). Another possible explanation is that this generation has a high level of mobility, as they are young and do not have work or family obligations to impede them, and moving allows them to develop cultural capital regardless of the infrastructures present in their place of living.

(Co)relations between the different types of capital

The literature suggests that the levels of human capital and digital capital are somewhat correlated (Ragnedda et al., 2019). In Table G, the average value of digital capital possessed by individuals grouped by their level of education, i.e., human capital, is displayed.

Table G – Average level of digital capital of the respondents according to their level of education

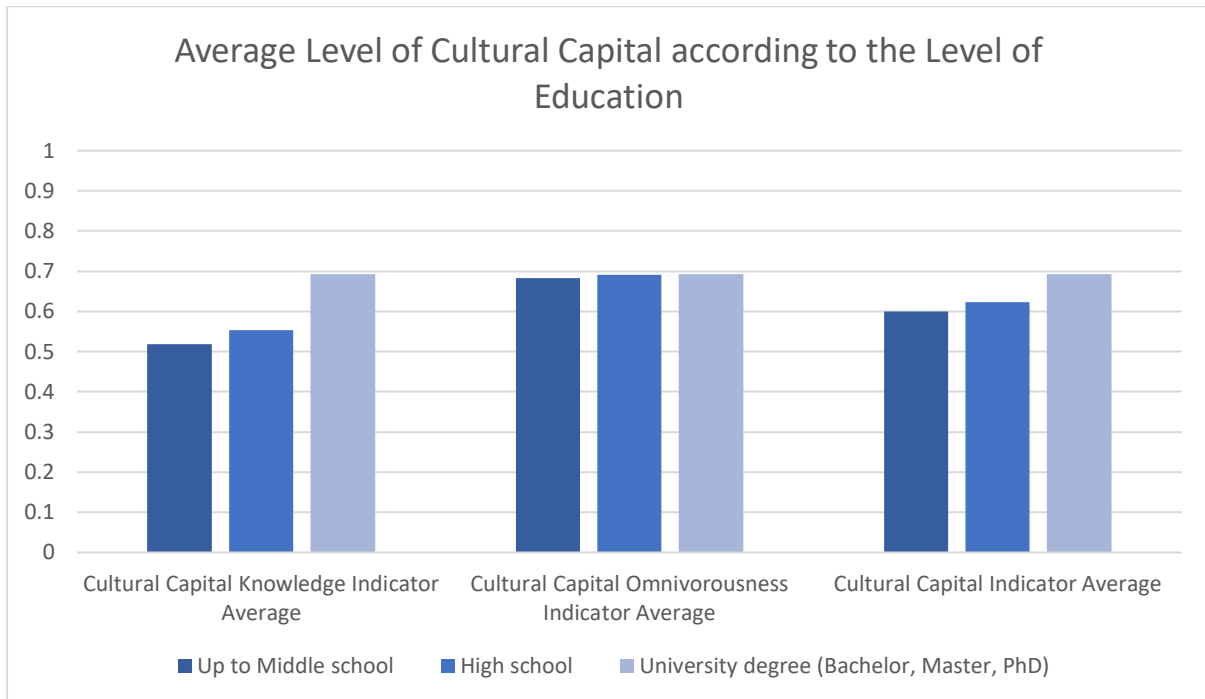
	Digital Capital Digital Competences Indicator Average	Digital Capital Ownership Indicator Average	Digital Capital Indicator Average
Up to Middle school	0.74	0.6	0.67
High school	0.72	0.57	0.64
University degree (Bachelor, Master, PhD)	0.73	0.59	0.66

Source: Author’s elaboration of proprietary data

We did not find any correspondence. Age, in this case the Generation Z age gap, influences digital capital significantly more than education (Basantes-Andrade et al., 2020). This is a logical conclusion given that this generation is defined as such on the basis of digital nativity. The average year of birth for respondents with the lowest level of education is 2006, the average year of birth for respondents with the average level of education is 2004, and the average year of birth for respondents with the highest level of education is 1999. This indicates that younger respondents already possess the same level of digital capital as older respondents, despite or because of their younger age and consequently lower education levels. If it is true that the level of human capital influences the level of digital capital (Ragnedda et al., 2019), then it is possible that in a few years, these same respondents, having acquired more human capital, will have developed additional digital capital, presenting a higher level of digital capital for the same age and educational level. This hypothesis provides the opportunity to conduct a longitudinal study on this generation in order to determine whether human capital influences the development of digital capital within a generation defined as such for digital skills.

Regarding cultural capital, it is widely acknowledged in the academic literature that the highest predictor of cultural participation is educational attainment. Figure H and Table H confirm the results found in the literature.

Figure H – Average level of cultural capital of the respondents according to their level of education



Source: Author's elaboration of proprietary data

Table H – Average level of cultural capital of the respondents according to their level of education

	Cultural Capital Knowledge Indicator Average	Cultural Capital Omnivorousness Indicator Average	Cultural Capital Indicator Average
Up to Middle school	0.52	0.68	0.60
High school	0.55	0.69	0.62
University degree (Bachelor, Master, PhD)	0.69	0.69	0.69

Source: Author's elaboration of proprietary data

Regarding the Cultural Capital Knowledge Indicator, there is a significant difference between respondents with the highest level of education and those with the lowest level of education, as well as a large difference between the most educated and those with a middle level of education. However, there is almost no difference in omnivorousness. The level of education is confirmed as a predictor of cultural participation based on the overall findings. If the above-mentioned theories explain the results of the Cultural Capital Knowledge Indicator, confirming

the literature, then the results of the Omnivorousness also confirm the literature. In fact, young age appears to be strongly associated with cultural omnivorousness (Van Rees et al., 1999; López Sintas and Garca lvarez, 2002; Scherger, 2009; Weingartner and Rössel, 2019). These results also appear to confirm the representativity of the collected sample.

The third relationship we wish to examine is the one between the levels of digital capital and cultural capital. This is a gap in the literature because, as far as we are aware, no studies have been conducted on the subject. Some studies suggest a correlation between cultural capital understood in a Bordieuan dimension (Bourdieu and Passeron, 1964a; Bourdieu and Passeron, 1964b; Bourdieu, 1983) and digital skills and competences (Paino and Renzulli, 2012) of students, which appears to be dependent on the perception of evaluators, as well as some research on the relationship between ICT and cultural capital (Tondeur and al., 2010). Our findings indicate suggest that there is no connection between these two forms of capital (Tondeur and al., 2010).

Bibliography

- Adams, B. N. and Sydie, R. A. (2001). *Sociological Theory*. Thousand Oaks: Pine Forge Press.
- Alajlan, M. (2020). Museums as Learning Spaces: A Case Study of Enhancing ESP Students' Language Skills in Kuwait University. *English Language Teaching*, 14(2). DOI: 10.5539/elt.v14n2p1.
- Alderighi, M., and Lorenzini, E. (2012). Cultural goods, cultivation of taste, satisfaction and increasing marginal utility during vacations. *Journal of Cultural Economics*, 36(1), 1-26.
- Alhassan, D. M. and Adam, O. I. (2021). The Effects of Digital Inclusion and ICT Access on Quality of Life: A Global Perspective. *Technology in Society*. DOI: 10.1016/j.techsoc.2020.101511.
- Allen, S. (2003). Review: Studying Learning in Museums. *The American Journal of Psychology*, 116(3), 488-494.
- Arregle, J. L., Hitt, M. A., Sirmon, D. G. and Very, P. (2007). The development of organizational social capital: attributes of family firms. *Journal of Management Studies*, 44 (1), 73-95.
- Ateca-Amestoy, V. (2008). Determining heterogeneous behavior for theater attendance. *Journal of Cultural Economics*, 32(2), 127-151.
- Ateca-Amestoy, V., and Prieto-Rodríguez, J. (2013). Forecasting accuracy of behavioural models for participation in the arts. *European Journal of Operational Research*, 229(1), 124-131.
- Ateca-Amestoy, V. and Castiglione, C. (2016). The consumption of cultural goods through the internet. How is it affected by the digital divide? *ACEI Working Paper Series, AWP-04-2016*. Association for Cultural Economics International.
- Ateca-Amestoy, V., V. Ginsburgh, I. Mazza, J. O'Hagan and J. Prieto-Rodríguez (Eds) (2017). *Enhancing Participation in the Arts in the EU: Challenges and Methods*. Cham: Springer.
- Ateca-Amestoy, V. (2020). Participation. In R. Towse and T. Navarrete Hernández (Eds.) *Handbook of Cultural Economics, Third Edition* (pp.399-407). Cheltenham, UK: Edward Elgar Publishing.
- Ateca-Amestoy, V., Villarroya, A. and Wiesand, A. J. (2021). Heritage Engagement and Subjective Well-Being in the European Union. *Sustainability*, 13. DOI: <https://doi.org/10.3390/su13179623>
- Bakhshi, H. and Throsby, D. (2010). *Culture of Innovation. An economic analysis of innovation in arts and cultural organisations*. Nesta Report, London.

Bakhshi, H. and Throsby, D. (2014). Digital complements or substitutes? A quasi-field experiment from the Royal National Theatre. *Journal of Cultural Economics*, 38, 1-8.

Bakhshi, H., Di Novo, S. and Fazio, G. (2022). The “Great Lockdown” and cultural consumption in the UK. *Journal of Cultural Economics*. DOI: <https://doi-org.eur.idm.oclc.org/10.1007/s10824-022-09463-6>.

Barro, R. J. and Lee, J-W. (1996). International measures of schooling years and schooling quality. *American Economic Review*, 86 (2), 218-223.

Basantes-Andrade, A., Cabezas-Gonzales, M. and Casillas Martin, S. (2020). Digital Competences Relationship between Gender and Generation of University Professors. *International Journal on Advanced Science Engineering and Information Technology*. DOI: 10.18517/ijaseit.10.1.10806.

Becker, G. S. (1962). Investment in human capital: a theoretical analysis. *The Journal of Political Economy*, 70 (5), 9-49.

Becker, G. S. (1964). *Human Capital*. New York: Columbia University Press.

Becker, G. S. and Murphy, K. M. (1988). A theory of rational addiction. *Journal of Political Economy*, 96(4), 675-700.

Bennet, T., Bustamante, M. and Frow, J. (2013). The Australian space of lifestyles in comparative perspective. *Journal of Sociology*, 49(2-3), 224-255.

Berlyne, D.E. (ed.) (1974). *Studies in the New Experimental Aesthetics*. New York: Wiley.

Bertacchini, E. and Morando, F. (2014). The future of museums in the digital age: new models of access and use of digital collections. *International Journal of Arts Management*. Available at: https://www.researchgate.net/publication/254455846_The_Future_of_Museums_in_the_Digital_Age_New_Models_of_Access_and_Use_of_Digital_Collections.

Bertacchini, E., Venturini, A. and Zotti, R. (2021). What drives cultural participants of immigrants in the host countries? *Economists talk art*. Available at: <https://economiststalkart.org/2021/03/16/what-drives-cultural-participation-of-immigrants-in-the-host-country/>.

Bihagen, E. and Katz-Gerro, T. (2000). Culture consumption in Sweden: the stability of gender differences. *Poetics*, 27, 327-349.

Bille, T. (2010). Cool, funky and creative? The creative class and preferences for leisure and culture. *International Journal of Cultural Policy*, 16(4), 466-496.

Bimber, B. (2000). Measuring the Gender Gap on the Internet. *Social Science Quarterly*, 81(3), 868-876.

- Blaug, M. (1976). The empirical status of human capital theory: A slight jaundiced survey. *Journal of Economic Literature*, 14, 827-855.
- Bonet, L. and Négrier, E. (2018). The participatory turn in cultural policy: paradigms, models, contexts. *Poetics*, 66 (February), 64-73.
- Borgonovi, F. (2004). Performing arts attendance: an economic perspective. *Applied Economics*, 36(17), 1871-1885.
- Borowiecki, K. J., and Prieto-Rodriguez, J. Video games playing: A substitute for cultural consumptions? *Journal of Cultural Economics*. DOI: 10.1007/s10824-014-9229-y.
- Bourdieu, P. and Passeron, J.C. (1964a). *Les étudiants et leurs études*. Paris-La Haye: Mouton.
- Bourdieu, P. and Passeron, J. C. (1964b). *Les héritiers, les étudiants et la culture*. Paris: Ed de Minuit.
- Bourdieu, P. (1976). Elemente einer soziologische Theorie der künstlerischen Wahrnehmung. In Silbermann, A. (Ed.). *Theoretische Ansätze der Kunstsoziologie* (pp. 58-86). Stuttgart: Enke.
- Bourdieu, P. and Passeron, J.C. (1977). *Reproduction in Education, Society and Culture*. London: Sage.
- Bourdieu, P. (1979). *La distinction. Critique sociale du jugement*. Paris: Ed de Minuit.
- Bourdieu, P. (1983). Forms of capital. In Richards, J. C. (Ed.). *Handbook of Theory and Research for the Sociology of Education* (pp. 15-29). New York: Greenwood Press.
- Bourdieu, P. (1984). *Distinction: A social critique of the judgement of taste*. Cambridge: Harvard University Press.
- Bourdieu, P. (1985). The genesis of the concepts of habitus and of field. *Sociocriticism, Theories and Perspectives*, 2 (2), 11-24.
- Braund, M. (2004). Learning science at museums and hands-on centres. In M. Braund and M. Reiss (Eds.) *Learning Science Outside the Classroom* (pp.96-110). London: Routledge Falmer.
- Brook, O. (2016). Spatial equity and cultural participation: how access influences attendance at museums and galleries in London. *Cultural Trends*. DOI: 10.1080/09548963.2015.1134098.
- Bruns, A. (2006). Towards Producers: Futures for User-Led Content Production. In F. Sudweeks & H. Hrachovec & C. Ess (Eds.) *Proceedings of the Fifth International Conference on Cultural Attitudes Towards Technology and Communication* (pp. 275-284). Murdoch, W.A.: School of Information Technology, Murdoch University.

Buheji, M. (2019). Museums and their Role in Resilient Creative Economy - The Canadian Experience. *International Journal of Economics, Commerce and Management*, 7(6), 26-36.

Butkova, O. (2020). The definition of «capital» as an economic and accounting category. *E3S Web of Conferences*, 175. DOI: 10.1051/e3sconf/202017513011.

Calderon Gomez D. (2018). The Three Levels of the Digital Divide: Barriers in Access, Use and Utility of Internet among Young People in Spain. *Interações Sociedade e as novas modernidades*. DOI: 10.31211/interacoes.n34.2018.a4.

Camic, C. and Hodgson, G. M. (Eds.) (2011). *Essential Writings of Thorstein Veblen*. London: Routledge.

Carpiano, R. M. (2006). Towards a neighborhood resource-based theory of social capital for health: Can Bourdieu and sociology help? *Social Science & Medicine*, 62(1), 165-175.

Casillas Martin, S., Cabezas-Gonzales, M., Ibarra-Sáiz, M. S. and Rodríguez-Gómez, G. (2017). Evaluation of digital competence from a gender perspective. In J. M. Doderó, M. S. Ibarra-Sáiz and Ruiz Rube I. (Eds.), *Proceedings of the 5th International Conference Technological Ecosystems for Enhancing Multiculturality*. New York: TEEM 2017. DOI: 10.1145/3144826.3145372.

Castiglione, C. and Infante, D. (2015). Rational addiction and cultural goods: the case of the Italian theatregoer. *Journal of Cultural Economics*. DOI: 10.1007/s10824-015-9247-4.

Chatterjee, J. H. and Camic, P. M. (2015). The health and well-being potential of museums and art galleries. *Arts & Health*, 7(3), 183-186.

Chen, W. (2015). A Moveable Feast: Do Mobile Media Technologies Mobilize or Normalize Cultural Participation? *Human Communication Research*, 41, 82-101.

Chillakuri, B. (2020). Understanding Generation Z expectations for effective onboarding. *Journal of Organizational Change Management*. DOI 10.1108/JOCM-02-2020-0058.

Chinowsky, P. and Carrillo, P. (2007). Knowledge Management to Learning Organization Connection. *Journal of Management in Engineering*, 23 (3), 122-130. DOI: 10.1061/(ASCE)0742-597X(2007)23:3(122).

Christin, A. (2012). Gender and highbrow cultural participation in the United States. *Poetics*, 40(5), 423-443.

Coleman, J. S. (1990). *Foundations of Social Theory*. Cambridge: Harvard University Press.

Collins, R. (1979). *The Credential Society*. New York: Academic Press.

Contucci, P. and Vernia, C. (2014). Alienation in Italian Cities. Social Network Fragmentation from Collective Data. DOI: <https://doi.org/10.48550/arXiv.1410.0501>.

Cook, B., Reynolds, R. and Speight, C. (2010). *Museums and design education: Looking to learn, learning to see*. Routledge.

Coulangeon, P. (2005). *Educational attainment and participation in Highbrow Culture. A comparative approach in European Union*. Paris: Observatoire Sociologique du Changement, OSC, Sciences-Po.

Coulangeon, P. (2013). Changing policies, challenging theories and persisting inequalities: Social disparities in cultural participation in France from 1981 to 2008. *Poetics*, 41, 177-209.

Council of Europe. (2016). *Cultural Participation and Inclusive Societies: A thematic report based on the Indicator Framework on Culture and Democracy*. Strasbourg: Council of Europe.

Cremonini, M (2016). Introducing serendipity in a social network model of knowledge diffusion. *Chaos Solitons & Fractals*, 90. DOI: 10.1016/j.chaos.2016.02.023

Cuadrado, M. and Frassetto, M. (1999). Segmentation of Cinema Audiences: An Exploratory Study Applied to Young Consumers. *Journal of Cultural Economics*, 23, 257-267.

Dagum, C. and Slottje, D. J. (2000). A new method to estimate the level and distribution of household human capital with application. *Structural Change and Economic Dynamics*, 11 (2), 67-94.

Dalle Nogare, C. and Murzyn-Kupisz, M. (2021). Do museums foster innovation through engagement with the cultural and creative industries?. *Journal of Cultural Economics*, 45(2). DOI: 10.1007/s10824-021-09418-3.

Davies, S. (2005). Still popular: Museums and their visitors 1994–2004. *Cultural Trends*, 14(1), 67-105.

DeNisi, A. S., Hitt, M. A. and Jackson, S.E. (2003). *The Knowledge-based Approach to Sustainable Competitive Advantage: Managing Knowledge for Sustained Competitive Advantage: Designing Strategies for Effective Human Resource Management*. San Francisco: Jossey Bass.

De Vries, R and Reeves, A. (2021). What Does it Mean to be a Cultural Omnivore? Conflicting Visions of Omnivorosity in Empirical Research. *Sociological Research Online*. DOI: 10.1177/13607804211006109.

DiMaggio, P. (1987), Classification in art. *American Sociological Review*, 52, 440-455.

European Commission (2017). *Special Eurobarometer 466 – Cultural Heritage*. DOI:10.2766/576064.

Dolot, A. (2018). The Characteristics of Generation Z. *E-mentor*, 2(74), 44-50.

Dumais, S. A. (2002). Cultural Capital, Gender, and School Success: The Role of Habitus. *Sociology of Education*, 75(1). DOI: 10.2307/3090253.

Eisner, R. (1985). The total incomes system of accounts. *Survey of Current Business*, 65 (1), 24-48.

Eisner, R. (1989). *The Total Incomes System of Accounts*. Chicago: University of Chicago Press.

Equals and UNESCO (2019). *I'd Blush if I could. Closing Gender Divides in Digital Skills Through Education*. Available at: <https://unesdoc.unesco.org/ark:/48223/pf0000367416>.

European Commission (2012). *Cities in Europe - The new OECD-EC definition*. Available at: https://ec.europa.eu/regional_policy/en/information/publications/regional-focus/2012/cities-in-europe-the-new-oecd-ec-definition

European Commission (2012). *Special Eurobarometer 386 – European and their languages*. Available at: <https://op.europa.eu/en/publication-detail/-/publication/f551bd64-8615-4781-9be1-c592217dad83>.

European Commission (2016). *The Distribution of Technological Activities in Europe: A Regional Perspective*. Available at: <https://op.europa.eu/en/publication-detail/-/publication/028bba5c-1893-43c1-a165-eaf57ff449ea/language-en>.

European Commission (2017a). *DigComp 2.1. The Digital Competence Framework for Citizens. With Eight Proficiency Levels and Examples of Use*. DOI: 10.2760/38842.

European Commission (2017b). *Special Eurobarometer 466 – Cultural Heritage*. DOI:10.2766/576064.

European Commission (2018). *A New European Agenda for Culture*. Available at: <https://eur-lex.europa.eu/legalcontent/EN/TXT/?qid=1527241001038&uri=COM:2018:267:FIN>

European Commission (2020). *The Standard Eurobarometer 92 (EB92) – Media in Use*. Available at: <https://op.europa.eu/en/publication-detail/-/publication/c2fb9fad-db78-11ea-adf7-01aa75ed71a1/language-en>.

European Commission (2021a). *A Long-term Vision for the EU's Rural Areas – Towards stronger, connected, resilient and prosperous rural areas by 2040*. Available at: https://ec.europa.eu/info/sites/default/files/strategy/strategy_documents/documents/ltvra-c2021-345_en.pdf.

European Commission (2021b). *Digital Economy and Society Index*. Available at: <https://digital-strategy.ec.europa.eu/en/policies/desi>.

EUROSTAT (2017). *Archive: Statistics on Rural Areas in the Eu – Statistics Explained*. Available at: https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Archive:Statistics_on_rural_areas_in_the_EU&oldid=339040.

EUROSTAT (2019). *Statistics on European Cities – Statistics Explained*. Available at: <https://ec.europa.eu/eurostat/statistics-explained/SEPDF/cache/14260.pdf>.

Eurostat (2021a). *Cultural Statistics – Cultural Participation: Statistics Explained*. Available at: <https://ec.europa.eu/eurostat/statistics-explained/SEPDF/cache/63357.pdf>

Eurostat (2021b). *Cultural Statistics – Use of ICT for cultural purposes: Statistics Explained*. Available at: <https://ec.europa.eu/eurostat/statistics-explained/SEPDF/cache/44961.pdf>

EUROSTAT (2021a). *Gender Statistics – Statistics Explained*. Available at: <https://ec.europa.eu/eurostat/statistics-explained/SEPDF/cache/22925.pdf>

EUROSTAT (2021b). *Quality of Life Indicators - Education – Statistics Explained*. Available at: <https://ec.europa.eu/eurostat/statistics-explained/SEPDF/cache/30563.pdf>.

EUROSTAT (2022). *Educational Attainment Statistics – Statistics Explained*. Available at: <https://ec.europa.eu/eurostat/statistics-explained/SEPDF/cache/32198.pdf>.

Evans, G. (2016). Participation and provision in arts and culture – bridging the divide. *Cultural Trends*, 25 (1), 2-20.

Evrard, Y. (1997). Democratizing Culture or Cultural Democracy?. *The Journal of Arts Management, Law, and Society*, 27(3), 167-175.

Evrard, Y. and Krebs, A. (2018). The authenticity of the museum experience in the digital age: the case of the Louvre. *Journal of Cultural Economics*, 42(3), 353-363.

Falk, H. J. (1999). Museums as institutions for personal learning. *Dedalus*, 128(3), pp. 259-275.

Falk, M. and Katz-Gerro, T. (2015). Cultural participation in Europe: Can we identify common determinants?. *Journal of Cultural Economics*, 40(2), 127-162.

Fan, Q., Goetz, S. J. and Liang, J. (2016). The interactive effects of human capital and quality of life on economic growth. *Applied Economics*, 48(53). DOI: <https://doi.org/10.1080/00036846.2016.1173180>

Fisher, I. (1897). Senses of capital. *Economic Journal*, 7, (2), 199-213.

Friedman, S. (2011). The Cultural currency of a good sense of humour: British comedy and new forms of distinction. *The British Journal of Sociology*, 62(2), 347-370.

Froggett, L., Farrier, A. and Poursanidou, K. (2011). Who Cares? Museums, Health and Wellbeing Research Project A Study of the Renaissance North West Programme. Available at: <https://eresearch.qmu.ac.uk/bitstream/handle/20.500.12289/4726/4726.pdf?sequence=1&isAllowed=y>.

- Ganzeboom, H. B. G. (1982). Explaining differential participation in high-cultural activities: A confrontation of information-processing and status-seeking theories. In Raub, W. (Ed.). *Theoretical Models and Empirical Analyses* (pp. 186-205). Utrecht: E.S.Publications.
- Gray, C. M. (2003). Participation. In R. Towse (Ed.). *A Handbook of Cultural Economics* (pp. 356-365). Cheltenham, UK: Edward Elgar Publishing.
- Gray, C. M. (2013). Participation. In R. Towse (Ed.) *Handbook of Cultural Economics, Second Edition* (pp.326-331). Cheltenham, UK: Edward Elgar Publishing.
- Grigorescu, A., Pelinescu, E., Ion, A. E. and Dutcas, M. F. (2021). Human Capital in Digital Economy: An Empirical Analysis of Central and Eastern European Countries from the European Union. *Sustainability*, 13. DOI: <https://doi.org/10.3390/su13042020>.
- Haq, M. (2016). Human capital resources: a review and direction for future research. *International Journal Management Development*, 1 (4), 261-286.
- Hargittai, E. and Kim, S. J. (2010). The prevalence of smartphone use among a wired group of young adults. *Working paper, Institute for Policy Research*, Northwestern University.
- Haveman, R. and Wolfe, B. (1984). Schooling and economic well-being: the role of non-markets effects. *Journal of Human Resources*, 19 (3), 377-407.
- Hindman, D. (2000). The Rural-Urban Digital Divide. *Journalism & Mass Communication Quarterly*, 77(3), 549-560.
- Hitt, M. A., Biermant, L., Shimizu, K. and Kochhar, R. (2001). Direct and moderating effects of human capital on strategy and performance in professional service firms: a resource-based perspective. *Academy of Management Journal*, 44 (1), 13-28.
- Hodgson, G. M. (2001). *How Economics Forgot History: The Problem of Historical Specificity in Social Science*. London: Routledge
- Hodgson, M. G. (2014). What is capital? Economists and sociologists have changed its meaning: should it be changed back? *Cambridge Journal of Economics*, 1. DOI: [doi:10.1093/cje/beu013](https://doi.org/10.1093/cje/beu013).
- Homans, G. C. (1974). *Human Behaviour: its Elementary Forms*. New York: Harcourt.
- ICOM (International Council of Museums) (2022). Museum Definition. Available at: <https://icom.museum/en/resources/standards-guidelines/museum-definition/>
- Ignatow, G. and Robinson, L. (2017). Pierre Bourdieu: theorizing the digital. *Information, Communication & Society*, 20 (7), 950-966.
- ISTAT (2020). *Annuario Statistico Italiano 2020*. Roma: Istituto nazionale di statistica.

Jarness, V. (2015). Modes of consumption: From 'what' to 'how' in cultural stratification research. *Poetics*, 53, 65-79.

Jeresano, E. and Carretero, M. (2022). *Digital Culture and Social Media Slang of Gen Z*. DOI: 10.1314/RG.2.2.36361.93285.

Johnes, G. (1993). *The economics of education*. New York: Saint Martin's Press.

Johnson, A. S. (1909). *Introduction to Economics*. Boston: Heath.

Judson, R. (2002). Measuring human capital like physical capital: what does it tell us? *Bulletin of Economic Research*, 54 (3), 209-231.

Katz-Gerro, T. and Shavit, Y. (1998). The stratification of leisure and taste: classes and lifestyles in Israel. *European Sociological Review*, 14(4), 369-386.

Katz-Gerro, T. (2004). Cultural consumption research: Review of methodology, theory, and consequence. *International Review of Sociology*, 14(1), 11-29.

Katz-Gerro, T. (2011). Cross-national cultural consumption research: Inspirations and disillusion. *Kölner Zeitschrift für Soziologie und Sozialpsychologie*, 51, 339-360.

Kendrick, J. (1976). *The Formation and Stocks of Total Capital*. New York: Columbia University Press.

Kestane, S. U. (2019). Perception Research on Developing Brand Identity for Small Cities. *Prizner Social Science Journal*, 3(2). DOI: 10.32936/PSSJ.V3I2.

Kiker, B. F. (1966). The historical roots of the concept of human capital. *Journal of Political Economy*, 74 (5), 481-499.

Kochoska, J. and Petrovski, D. (2015). The Role of the Cultural Institutions in the Civic Education. *International Journal of Science and Research*, 4(3), 1458-1462.

Kos-Labedowicz, J. (2017). The Issue of the Digital Divide in the Rural Areas of the European Union. *Ekonomiczne Problemy Usług*. DOI: 10.18276/epu.2017.126/2-20.

Langman, L. and Kalekin-Fishman, D. (2012). Alienation in the 21st century. *Second ISA Forum of Sociology*. Available at: https://www.researchgate.net/publication/268094059_Alienation_in_the_21st_century.

Laporte, A., Karimove, A., and Ferguson, B. (2010). Quantile regression analysis of the rational addiction model: Investigating heterogeneity in forward-looking behavior. *Health Economics*, 19(9), 1063-1074.

Laroche, M., Mérette, M. and Ruggeri, G. C. (1999). On the concept and dimensions of human capital in a knowledge-based economy context. *Canadian Public Policy – Analyse de Politiques*, 25 (1), 87-100.

Latham, F. K., Gorichanaz, T. and Narayan, B. (2018). Encountering the muse: An exploration of the relationship between inspiration and information in the museum context. *Journal of Librarianship and Information Science*, 51(9). DOI: 10.1177/0961000618769976.

Lee, J-W and Barro, R. J. (2001). Schooling quality in a cross-section of countries. *Economica*, 68 (272), 465-488.

Levine, L. W. (1988). *Highbrow/Lowbrow: The Emergence of Cultural Hierarchy in America*. Harvard University Press.

Lévy-Garboua, L., and Montmarquette, C. (1996). A microeconomic study of theater demand. *Journal of Cultural Economics*, 20(1), 25-50.

López Sintas, J. and García Álvarez E. (2002). Omnivores Show up Again: The Segmentation of Cultural Consumers in Spanish Social Space. *European Sociological Review*, 18 (3), 353-368.

Marradi A. and Gasperoni G. (Eds) (2002). *Costruire il dato 3. Le scale Likert*. Milano: Franco Angeli.

McCarthy, K., Onddaatje, E., Zakaras, L., and Brooks, A. (2004). *Gifts of the muse: Reframing the debate about the benefits of the arts*. Santa Monica, CA: Rand Corporation.

McKenzie, J., and Shin, S. Y. (2020). Demand. In R. Towse & T. Navarrete Hernández (Eds.) *Handbook of Cultural Economics, Third Edition* (pp.216-227). Cheltenham, UK: Edward Elgar Publishing.

Melinat, P., Kreuzkam, T. and Stamer, D. (2014). Information Overload: A Systematic Literature Review. *Perspectives in Business Informatics Research*. DOI: 10.13140/2.1.4293.7606.

Mihelj, S., Leguina, A and Downey, J. (2019). Culture is digital: Cultural participation, diversity and the digital divide. *New media and society*. DOI: 10.1177/1461444818822816.

Moles, A. (1971). *Informationstheorie und ästhetische Wahrnehmung*. Köln: Dumont Schauberg.

Montoro-Pons, J. D. and Cuadrado-García, M. (2011). Live and prerecorded popular music consumption. *Journal of Cultural Economics*, 35(1), 19-48.

Muñiz, C., Rodríguez, P. and Suárez, M. J. (2014). Sports and cultural habits by gender: An application using count data models. *Economic Modelling*, 36, 288-297.

Musgrave, R. (1959). *The theory of public finance*. New York: McGraw-Hill.

Nahapiet, J. and Ghoshal, S. (1998). Social capital, intellectual capital, and the organizational advantage. *Academy of Management Review*, 23 (2), 242-266.

Ndinguri, E., Prieto, L. and Machtmes, K. (2012). Human capital development dynamics: The knowledge based approach. *Academy of Strategic Management Journal*, 11 (2), 121-136.

NEA (National Endowment for the Arts). (2015). *When going gets tough: barriers and motivations affecting arts attendance*, NEA Research Report No. 59. Washington: National Endowment for the Arts.

NEMO (Network of European Museum Organizations). (2020). *Final Report. Digitalization and IPR in European Museums*. Network of European Museum Organizations.

NEMO (Network of European Museum Organizations). (2021). *Follow-up survey on the impact of the COVID-19 pandemic on museums in Europe*. Network of European Museum Organizations.

Nissenbaum, A. and Shifman, L. (2015). Internet memes as contested cultural capital: the case of 4chan's /b/ board. *New Media Soc.* 1 (19), 483–501.

Notten, N, Lancee, B, van de Werfhorst, H. G. and Ganzeboom, H. B. G. (2014). Educational stratification in cultural participation: cognitive competence or status motivation?. *Journal of Cultural Economics*. DOI 10.1007/s10824-014-9218-1.

OECD (2001). *The Well-being of Nations: The Role of Human and Social Capital*. Paris: OECD.

OECD and IRDES (2010). *Social capital, human capital and health. What is the evidence?* Available at: <https://www.oecd.org/innovation/research/45760738.pdf>.

OECD (2012). *Equity and Quality in Education. Supporting Disadvantaged Students and Schools*. DOI: <http://dx.doi.org/10.1787/9789264130852-en>.

O'Hagan, J. (2017). Attendance at/Participation in the Arts by Educational Level: Evidence and Issues. In V. M. Ateca-Amestoy, V. Ginsburgh, I. Mazza, J. O'Hagan and J. Prieto-Rodriguez (Eds.), *Enhancing Participation in the Arts in the EU: Challenges and Methods* (pp. 51-66). Cham: Springer International Publishing.

Olson, E. and Ro, H. (2021). Generation Z and Their Perceptions of Well-Being in Tourism. In N. Stylos, R. Rahimi, B. Okumus and S. Williams (Eds.), *Generation Z Marketing and Management in Tourism and Hospitality - The Future of the Industry* (pp.101-118). London: Palgrave Macmillan Cham.

Ono, H. and M. Zavodny. (2003). Gender and the Internet. *Social Science Quarterly*, 84(1), 111-121.

Oxley, L., Le, T. and Gibson, J. (2008). Measuring human capital: alternative methods and international evidence. *The Korean Economic Review*, 24(2), 283-344.

Paino M. and Renzulli, L. A. (2012) Digital Dimension of Cultural Capital: The (In)Visible Advantages for Students Who Exhibit Computer Skills. *Sociology of Education*, 86(2), 124–138.

Paino, M. and Renzulli, L. (2013). Digital dimension of cultural capital: the (in)visible advantages for students who exhibit computer skills. *Sociology of Education*, 86 (2), 124-138.

Paker, J. (2008). Beyond Learning: Exploring Visitors' Perceptions of the Value and Benefits of Museum Experiences. *Curator The Museum Journal*, 51(1). DOI: 10.1111/j.2151-6952.2008.tb00293.x.

Park, S. (2017). *Digital Capital*. London: Palgrave Macmillan.

Pellegrini, E. (2020). *The digital museum services: A guide for museums*. Available at https://zenodo.org/record/4575416/files/ElisaPellegrini_DigitalMuseumServices_Report.pdf?download=1.

Perifanou, M. and Economides, A. A. (2020). Gender Digital Divide in Europe. *International Journal of Business, Humanities and Technology*, 10(4). DOI: 10.30845/ijbht.v10n4p2

Peterson, R. A. (1992). Understanding audience segmentation: From elite and mass to omnivore and univore. *Poetics*, 21(4), 243-258.

Peterson, R. A., and Kern, R. M. (1996). Changing highbrow taste: From snob to omnivore. *American Sociological Review*, 61(5), 900-907.

Peterson, R. A. (2005). Problems in comparative research: The example of omnivorousness. *Poetics*, 33(5), 257-282.

Ployhart, R. E. and Moliterno, T. P. (2011). Emergence of the human capital resource: a multilevel model. *Academy of Management Review*, 36 (1), 127-150.

Putnam, R. D. (1995). Tuning in, tuning out: the strange disappearance of social capital in America. *Political Science and Politics*, 28 (4), 664-683.

Putnam, R. D. (2000). *Bowling Alone: The Collapse and Revival of American Community*. New York: Simon & Schuster.

Ragnedda, M. (2018). Conceptualizing digital capital. *Telematics and Informatics*. DOI: <https://doi.org/10.1016/j.tele.2018.10.006>.

Ragnedda, M., Ruiu, M. L. and Addeo, F. (2019). Measuring Digital Capital: An Empirical Investigation. *New Media and Society*. DOI: 10.1177/1461444819869604.

Reading, C. (2009). Sources of inspiration: How design students learn from museum collections and other sources of inspiration. *Art, Design & Communication in Higher Education*, 8(2), 109-121.

Rebekić, A., Lončarić, Z., Petrović, S. and Marić, S. (2015). Pearson's or spearman's correlation coefficient – which one to use? *Poljoprivreda*, 21(2), 47-54.

Redondo, T. (2015). The Digital Economy: Social Interaction Technologies - An Overview. *Int. J. Artif. Intel. Interact. Multimed.*, 3, 17-25.

Robbins, D. (2005). The origins, early development and status of Bourdieu's concept of 'cultural capital'. *The British Journal of Sociology*, 56 (1), 13-30.

Roberts, E. and Townsend, L. (2015). The contribution of the creative economy to the resilience of rural communities: exploring cultural and digital. Capital. *Sociologia Ruralis*. DOI: 10.1111/soru.12075.

Rodriguez-Ricardo, Y., Sicilia, M. and Lopez, M. (2018). What drives crowdfunding participation? The influence of personal and social traits // ¿Qué determina la participación en proyectos de crowdfunding? La influencia de las características sociales y personales. *Spanish Journal of Marketing*, 22(3). DOI: 10.1108/SJME-03-2018-004.

Rössel, J., Schenk, P., Weingartner, S. (2017). Cultural Consumption. *Emerging Trends in the Social and Behavioral Sciences: An Interdisciplinary, Searchable, and Linkable Resource*. DOI: <https://doi.org/10.1002/9781118900772.etrds0432>.

Sacco, P. L., Ferilli, G. and Tavano Blessi, G. (2018). From Culture 1.0 to Culture 3.0: Three Socio-Technical Regimes of Social and Economic Value Creation through Culture, and Their Impact on European Cohesion Policies. *Sustainability*. DOI: 10.3390/su10113923.

Sarfranz, H. (1997). *Urbanism, Ethnicity and Alienation*. DOI: 10.13140/2.1.1182.2409.

Savage, M., and Gayo, M. (2011). Unravelling the omnivore: A field analysis of contemporary musical taste in the United Kingdom. *Poetics*, 39, 337-357.

Scherger, S. (2009). Cultural practices, age and the life course. *Cultural Trends*, 18(1), 23-45.

Schlicht, R., Stadelmann-Steffen, I. and Freitag, M. (2010). Inequality Education in EU. *European Union Politics*. DOI: 10.1177/1465116509346387.

Schuller, T. (2000). Social and human capital: the search for appropriate technomethodology. *Policy Studies*, 21(1), 25-35. DOI: 10.1080/014428700113991, <http://dx.doi.org/10.1080/014428700113991>.

Schultz, T. W. (1960). Capital formation by education. *Journal of Political Economy*, 68 (4), 571-83.

Schultz, T. W. (1961). Investment in human capital. *American Economic Review*, 51 (1), 1-17.

Schultz, T. W. (1971). *Investment in Human Capital: The Role of Education and of Research*. New York: Free Press.

Schumpeter, J. A. (1954). *History of Economic Analysis*. Oxford: Oxford University Press.

Seaman, B.A. (2005). Attendance and public participation in the performing arts: a review of the empirical literature. Research Paper No. 06-25, Andrew Young School of Policy Studies, Georgia State University, Atlanta, GA.

Seaman, B. (2006). Empirical studies of demand for the performing arts. In V. Ginsburgh and Throsby, D. (Eds.). *Handbook of the economics of art and culture* (pp. 416-472). Amsterdam: Elsevier.

Sedgwick, P. M. (2015). Spearman's rank correlation coefficient. *British Medical Journal*. DOI: 10.1136/bmj.g7327.

Segre, G. and Morelli, A. (2021) Culture and the youngest. Insights for the future of cultural consumption from an Italian sample. *Il capitale culturale*, 23, 89-109.

Servon, L. J. and Nelson, M. K. (2001). Community technology centers: narrowing the digital divide in low-income, urban communities. *J. Urban Affairs*, 23 (3/4), 279-291.

Sheykhi, M. T. (2021). Human Capital vs. Quality of Life: A Sociological Appraisal. *Studies in Social Science Research*, 3(1). DOI: <https://doi.org/10.22158/sssr.v3n1p7>.

Singh, A. P. and Dangmei, J. (2016). Understanding the Generation Z: The future workforce. *South-Asian Journal of Multidisciplinary Studies*, 3(3), 1-6.

Sokolov, M. (2019). Cultural capital and social revolution: Arts consumption in a major Russian city, 1991–2017. *Poetics*, 72, 1-16.

Song, L. (2011). Social capital and psychological distress. *J. Health Soc. Behav.* 52 (4), 478-492.

Spender, J. C. (1996). Making knowledge the basis of dynamic knowledge of the firm. *Strategic Management Journal*, 17, 45-62.

Suárez-Fernández, S., Prietri-Rodríguez, J. and Perez-Villadoniga, M. J. (2019). The changing role of education as we move from popular to highbrow culture. *Journal of Cultural Economics*. <https://doi.org/10.1007/s10824-019-09355-2>.

Suárez-Fernández, S. (2020). *New perspectives in the analysis of cultural participation and its limits*. Oviedo: Universidad de Oviedo.

Sullivan, S. (2007). Cultural Capital, Cultural Knowledge, and Ability. *Sociological Research Online* 12 (6). DOI: 10.5153/sro.1596.

Stevenson, H. W., Schweingruber, H. A., and Evans, E. (2002). Gender Differences in Interest and Knowledge Acquisition: The United States, Taiwan, and Japan. *Sex Roles*, 47(3). DOI: 10.1023/A:1021047122532.

Sweetland, S. R. (1996) Human Capital Theory: Foundations of a Field of Inquiry. *Review of Educational Research*, 66 (3), 341-359.

Tao, H. L. and Stinson, T. F. (1997). An alternative measure of human capital stock. *University of Minnesota Economic Development Center Bulletin*, 97 (01), 1-31.

Tapscott, D., Lowy, A. and Ticoll, D. (2000). *Digital Capital: Harnessing the Power of Business Webs*. Massachusetts: Harvard Business School Press Boston.

Throsby, D. (1997). Seven Questions in the Economics of Cultural Heritage. In Hutter and M., I. Rizzo (Eds.) *Economic Perspectives on Cultural Heritage* (pp. 13-31). Palgrave Macmillan: London. DOI: https://doi.org/10.1007/978-1-349-25824-6_2.

Throsby, D. (2020). Cultural Capital. In R. Towse and T. Navarrete Hernández (Eds.) *Handbook of Cultural Economics, Third Edition* (pp. 168-173). Cheltenham, UK: Edward Elgar Publishing.

Toepoel, V. (2011). Cultural participation of older adults: Investigating the contribution of lowbrow and highbrow activities to social integration and satisfaction with life. *International Journal on Disability and Human Development*. DOI: 10.1515/IJDHD.2011.027.

Tondeur, J., Sinnaeve, I., van Houtte, M, and van Braak, J. (2010). ICT as cultural capital: The relationship between socioeconomic status and the computer-use profile of youngpeople. *New Media & Society*, 13(1), 151-16.

Towse, R. and Navarrete, T. (Eds.) (2020). *Handbook of Cultural Economics, Third Edition*. Cheltenham, UK: Edward Elgar Publishing.

Turner, A. (2015). Generation Z: Technology and Social Interest. *The Journal of Individual Psychology*, 71 (2), 103-113.

Tisza, G., Zhu, S. and Markopoulos, P. (2021). *Fun to enhance learning, motivation, self-efficacy, and intention to play in DGBL*. DOI: 10.1007/978-3-030-89394-1_3.

Ul Hassn, U., Parveen, I. and Saleem, S. (2020). Implications of Cultural Capital in Women's Higher Education Participation and Social Mobility. *Pakistan Journal of Education*, 36(3). DOI: 10.30971/pje.v36i3.1184.

UNESCO (1993). *World Education Report*. Paris.

UNESCO (United Nations Educational, Scientific and Cultural Organization). (2009). *The 2009 UNESCO Framework for Cultural Statistics*. Montreal: UNESCO Institute of Statistics.

UNESCO (United Nations Educational Scientific and Cultural Organization). (2012). *Measuring Cultural Participation: 2009 Framework for Cultural Statistics Handbook No. 2*. Montreal: UNESCO Institute for Statistics.

UNESCO (2017). *Working Group on Education: Digital skills for life and work*. Available at: <https://unesdoc.unesco.org/ark:/48223/pf0000259013>.

UNESCO (2019) *Thematic Indicators for Culture in the 2030 Agenda*. Paris: UNESCO.

United Nation (1948). *Universal Declaration of Human Rights*. Available at: <https://www.un.org/en/about-us/universal-declaration-of-human-rights>.

Van Deursen, A., and Van Dijk, J. (2013). The digital divide shifts to differences in usage. *New Media & Society*, 16(3), 507-526. DOI: <https://doi.org/10.1177/1461444813487959>.

Van Deursen, A., and Van Dijk, J. (2014). *Digital Skills. Unlocking the Information Society*. New York: Palgrave Macmillan. DOI: <https://doi.org/10.1057/9781137437037>.

Van Deursen, A.J., and Van Dijk, J. A. (2014). The digital divide shifts to differences in usage. *New Media and Society*, 16(3), 507-526.

Van Deursen, A., and Van Dijk, J. (2015). Toward a Multifaceted Model of Internet Access for Understanding Digital Divides: An Empirical Investigation. *The Information Society*, 31(5), 379-391. DOI: <https://doi.org/10.1080/01972243.2015.1069770>.

Van Deursen, A.J., Van Dijk, J. A. and ten Klooster, P.M. (2015). Increasing inequalities in what we do online: A longitudinal cross sectional analysis of Internet activities among the Dutch population (2010 to 2013) over gender, age, education, and income. *Telematics and Informatics*, 32 (2), 259-272.

Van Eijck, K. and Bargeman, B. (2004). The changing impact of social background on lifestyle: Culturalization instead of individualization? *Poetics*. DOI: 10.1016/j.poetic.2004.09.001.

Van Eijck, K. and Knulst, W. (2005). No More Need for Snobbism: Highbrow Cultural Participation in a Taste Democracy. *European Sociological Review*, 21(5), 513-528.

Van Rees, K., Vermunt, J.K. and Verboord, M. (1999). Cultural classifications under discussion: latent class analysis of highbrow and lowbrow reading. *Poetics*, 26, 349-365.

Varbanova, L. (2011). Cultural participation in education and lifelong learning: a catalyst for personal advancement, community development, social change and economic growth. *Working Group on Education and Learning – Access to Culture Platform*. Available at: <http://www.houseforculture.eu/upload/Docs%20ACP/AccessstoculturepolicysummaryAugust312012updatedFormatted1.pdf>.

Villi, M. and Noguera, J. M. (2017). Sharing media content in social media: The challenges and opportunities of user-distributed content (UDC). *Journal of Applied Journalism & Media Studies*. DOI: 10.1386/ajms.6.2.207_1.

Weingartner, S. and Rössel, J. (2019). Changing dimensions of cultural consumption? The space of lifestyles in Switzerland from 1976 to 2013. *Poetics*, 74. DOI: 10.1016/j.poetics.2019.01.001.

Wachtel, P. (1997). A labor-income based measure of the value of human capital: an application to the states of the US: Comments. *Japan and the World Economy*, 9 (2), 193-196.

Wang, Y. and Liu, S. S. (2016). Education, Human Capital and Economic Growth: Empirical Research on 55 Countries and Regions (1960-2009). *Theoretical Economics Letters*, 6, 347-355.

Webb, M., Kuntuova, I. and Karabayeva, A. (2018). The role of education in realising youths' human capital: social philosophical analysis. *Ensaio: Avaliação e Políticas Públicas em Educação*, 26 (100), 968-985.

Weber, M. (1949). *The Methodology of the Social Sciences*. New York: The Free Press.

Weber, M. (1968). *On charisma and institutional building*. Chicago: University of Chicago Press.

Wei, L. and Hindman, D.B. (2011). Does the Digital Divide Matter More? Comparing the Effects of New Media and Old Media Use on the Education-Based Knowledge Gap. *Mass Communication and Society*, 14 (2), 216-235.

Weingartner, S. and Rössel, J. (2019). Changing dimensions of cultural consumption? The space of lifestyles in Switzerland from 1976 to 2013. *Poetics*, 74.

WHO (World Health Organization) (2019) *What is the evidence on the role of the arts in improving health and well-being? A scoping review*. Copenhagen: WHO Regional Office for Europe.

Willekens, M. and Lievens, J. (2014). Family (and) culture: The effect of cultural capital within the family on the cultural participation of adolescents. *Poetics*, 42, 98-113.

Willekens, M. and J. Lievens. (2016). Who participates and how much? Explaining non-attendance and the frequency of attending arts and heritage activities. *Poetics*, 56(June), 50-63.

Woodhall, M. (1987). Economics of education: A review. In G. Psacharopoulos (Ed) *Economics of Education: Research and studies* (pp. 1-8). New York: Pergamon.

Woolhall, M. (2001). Human Capital: Educational Aspects. In N. J. Smelser and P. B. Baltes (Eds.) *International encyclopedia of the social & behavioral sciences*. Amsterdam: Elsevier.

Xing, Y. And Cheng, Q. (2018). Interactive Future of Museum Encouraging Youth Group to Engage with Museum. *Proceedings of the 2nd International Conference on Art Studies: Science*. DOI: 10.2991/icassee-18.2018.164.

Yadav, G. P. and Rai, J. (2017). The Generation Z and their Social Media Usage: A Review and a Research Outline. *Global Journal of Enterprise Information System*. DOI: 10.18311/gjeis/2017/15748.

Ziersch, A. M. (2005). The health implications of access to social capital: Findings from an Australian study. *Soc. Sci. Med.* 61 (5), 2119-2131.