

CONSUMING MUSEUMS: THE VALUE OF ONSITE AND ONLINE EXPERIENCE

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Abstract

The question of whether and for whom online-only museum offerings function as a complement or substitute good is of vital importance to both museums and cultural policy makers. While this question has been explored in a handful of single institution studies, or across more homogenous audience groups, there is surprisingly little research spanning a broad population of cultural consumers who consume museum offerings across multiple online and physical channels and sites. Using multiple correspondence analysis, our study provides an attitudinal, participatory, and demographic mapping of the perceptions of online museum offerings in relation to physical alternatives based on survey data of a sample (N=420) of the Norwegian population. Finding attitudes and participation structured across three axes, our results suggest that sources of scepticism towards online offerings may not be located in a specific experience of the art and cultural objects online, but rather in a more generalized rejection of online formats that is associated with demographic markers of age, education and income, as well as cultural consumption patterns indicative of 'highbrow culture'.

Online museum, substitute, complimentary good, Multiple Correspondence Analysis, museum audiences

Introduction

Of the many issues connected to the developing relation between onsite and online art and cultural heritage (herein 'art and museum') offerings, the question of whether online offerings act as a substitute or a compliment to onsite offerings has been a topic of interest in audience and culture research since Bakhshi and Throsby's (2012) study of the Tate Gallery just over a decade ago. From a

financial perspective, online offerings as a substitute product could cannibalize onsite ticket revenues, a critical component of museum funding and sustainability. Online substitution may also affect the tourism industry and the regional economy. From an aesthetic and cultural diversity perspective, online offerings as substitute raises the spectre of large international museums utilizing resources and scalability to dominate the space for audience attention in a manner not dissimilar to the 'superstar effect' that has occurred in the market for other digital cultural goods (Gombault & Allal-Chérif, 2021). From a social or educational perspective, online offerings as a substitute good may generate weaker cultural and social benefits for audiences (Cecotti, 2022; Jin et al., 2020). Tangential to the questions of substitution and complementarity is the important issue of audience diversity. Particularly important to publicly-funded museums and policy-makers is whether online offerings boost audience diversity by offering a lower threshold product (De Luca et al., 2023), or whether users of online offerings are predominantly the same audiences that visit onsite spaces. The answer to this question has implications for the public value of museum investment in digital tools and services.

Questions about substitution and audience diversity have been explored in a handful of single institution studies (e.g. Bakhshi & Throsby, 2012; Evrard & Krebs, 2018; Resta et al., 2021), or across more homogenous audience groups (e.g. Tranta et al., 2021). However, in the context of more than two decades of initiatives to digitize museum collections, the rise of open museum data and content aggregators such as Europeana and Google Arts & Culture, the proliferation of art imagery on social media, and growing use of Web 3 tools and infrastructures for consuming digital art, there is surprisingly little research spanning a broad population of cultural consumers who consume art and museum offerings across multiple online and physical channels and sites, both museum and art gallery affiliated and not. Moreover, the few studies to date typically characterize onsite and online visitors by an important but relatively restricted set of socio-economic variables. In this vein, we are unaware of research that compares onsite and online art and museum consumption with a broader set of cultural participation variables that can tell a fuller picture about a consumer group's cultural

and social preferences. Directly, our study responds to the questions of 1) What are relationships between onsite and online art and museum consumption for a representative sample of a population, where online art and museum consumption includes a broad spectrum of dissemination channels?, and 2) How do these relationships correspond to other markers of cultural consumption? By conducting a Multiple-Correspondence Analysis (MCA) mapping of attitudinal, behavioural, and demographic perceptions towards a broad spectrum of online art and museum offerings in relation to onsite alternatives from a population representative sample of art and museum consumers (N=420), and comparing these findings against a wide set of social demographic variables and other markers of social and cultural position, our study makes three key contributions to earlier studies in this field. First, moving beyond museum-developed online offerings, our study considers attitudes and participation towards a more realistic picture of online offerings used and evaluated by audiences in evaluating, amongst other things, the value of onsite visitation. If evidence suggests that museum-developed online offerings aren't diversifying audiences (Mihelj et al., 2019), our study is then able to consider whether third-party online tools are. Second, based on MCA's inductive approach, we use a broad and partly new informational set to map key dimensions of differentiation in relation to attitudes and behaviours towards onsite and online art. This contributes to a deeper understanding of the relationships between relevant attitudes and behaviours. Third, our study makes a clear conceptual and empirical connection between studies of the relation between online and onsite art and museum consumption and sociological studies of how cultural preferences, access and consumption are informed by social position.

Literature

Framing museum consumption, socio-demographics and access

The concept of cultural consumption, understood in sociological research as the enacting or making use of arts-related goods, services and experiences (Feder, 2023), is closer to the policy-oriented term 'cultural participation' (Towse, 2019). To capture the scope of onsite and online art and

museum offerings, much of which occurs without upfront monetary exchange, we adopt this broader sociological meaning of cultural consumption. As objects of consumption, art and museum offerings occur along a spectrum from purely onsite (analogue physical visitation) through to purely online (virtual visitation). This binary division is complicated by the omnipresence of digital technologies that means onsite consumption may be mediated by institution initiated (e.g. online ticketing, QR codes, audio guides, interactive screens, etc.) or visitor initiated (e.g. information searches) digital supplements. While partly resolved through an in-between category, 'hybrid visitation', own awareness of and variation in onsite technology usage further complicates categorizing museum consumption on the onsite to online spectrum. To side-step this tension, we define onsite consumption as the range of analog and hybrid offerings that occur in the site-specific physical presence of the art or museum object, while online consumption is characterized by a virtual representation of the art or museum objects which are located in a different physical space than the consumer.

A well-developed body of research in sociology and cultural economics supports the importance of socio-demographic variables in determining onsite and online cultural consumption. In relation to onsite art and museum consumption, research consistently shows consumption declines with age, particularly given the impact of school-based arts education in museum visitation (Ateca-Amestoy & Castiglione, 2023). A slightly higher proportion of women than men visit museums, and consumption is positively impacted by professional occupation, income and educational level (Ateca-Amestoy & Castiglione, 2023; Daenekindt & Roose, 2017). In a Norwegian context, these findings are mirrored in national data on onsite museum visitation by age, gender and education (Statistics Norway, 2023). The relationship between geographic distance to cultural sites and frequency of visitation is generally considered as negative in tourism research (Wong & Zhao, 2016), and there is some evidence of the positive impact of residing in an urban environment on onsite museum visitation (Ateca-Amestoy & Castiglione, 2023). However, geographic proximity to cultural heritage institutions such as museums can be modified by other factors (e.g. increased propensity to visit

museums during cultural tourism), making the effect of distance challenging to isolate. As a variable that covers physical and mental dimensions, health issues are found to negatively impact both onsite and online art and museum consumption, with no evidence of higher online consumption among this group (Ateca-Amestoy & Castiglione, 2023). Specific to online art and museum consumption, more recent studies identify a positive relationship between online cultural consumption and youth (Ateca-Amestoy & Castiglione, 2023; Evrard & Krebs, 2018), geographic distance from institution of interest (Evrard & Krebs, 2018), ease and familiarity with digital tools (Evrard & Krebs, 2018), and level of education (Ateca-Amestoy & Castiglione, 2023; Mihelj et al., 2019).

Bourdieu's model of the social patterning of cultural preferences and consumption takes a stronger position on the interrelatedness of socio-demographic variables by arguing they reflect a system of dispositions or 'habitus' that are the foundations for preferences and practices that affirm an individual's position in the social field (Bourdieu, 1984; Daenekindt & Roose, 2017). Each of the classes has its own 'legitimate' forms of culture, with the middle-classes in particular valuing cultural offerings venerated in the education system such as museums and art galleries (Hanquinet & Savage, 2012; Mihelj et al., 2019). Tradition class-based divides in *what* people consume is challenged by 'cultural omnivorousness', the act of consuming a range of high- through lowbrow cultural forms (Peterson & Kern, 1996). Although associated with the traditional higher classes, several authors argue that social distinction increasingly resides in *how* good are preferred rather than what is consumed (Daenekindt & Roose, 2017). Rather than the death of distinction, the contemporary abundance of cultural choice means the enactment of distinction is reserved for specialized contexts where certain groups will recognize a style of consumption (Daenekindt & Roose, 2017). This process is also relevant to digital consumption where there may be an observable difference between active own curatorship (e.g. searches, sharing and networking) of the cultural elite and the algorithmically directed consumption of the ordinary user (Weingartner, 2021). Applied to the present art and museum consumption context, and in keeping with Peterson and Kern's (1996) original framing of cultural omnivorousness, we consider the mixing of distribution mediums (i.e. onsite or online) is

alone insufficient for cultural omnivorousness. Rather it remains located in the hierarchical diversity of content consumed. Nevertheless, mixed onsite and online art and museum consumption is consistent with broader omnivore behaviour, and so we expect this consumption combination to be higher among those with the greatest economic and cultural capital (Weingartner, 2021). More generally, there are expected to be differences in attitudes and behaviors towards onsite and online art and museum offerings based on socio-economic determinants of social class.

Assess functions as a multidimensional quality of a cultural offering that, coupled with the potential consumer's socio-economic characteristics including social, cultural, and economic capital (Bourdieu, 1984), raises or lowers that offering's value proposition. Feder (2023) proposes cultural consumption is dependent on both taste and access, meaning that consumption is an imperfect proxy for access. Sociologists in the Bourdieusian tradition also note that both tastes and access are both at least partly informed by an individual's social position (Bourdieu, 1984; Weingartner, 2021), which further complicates efforts to isolate the impact of access. Access, for Feder (2023), consists of four dimensions: i) the fundamental legal or social *rights* to access an arts offering; ii) the *opportunity*, particularly including spatial, to participate in art and culture with reasonable effort; iii) having individual circumstances (e.g. finances, time) that permit arts *participation*; iv) the *reception* ability to appreciate and understand an arts offering. Within this access framework, digital technologies are typically viewed as both extending and contracting access. By circumventing many spatial barriers, digital tools have potential to broaden the opportunity to access the arts (Weingartner, 2021), while differences in connectivity and skills, captured under the broader topic of digital-divides, are well-documented participation barriers that can impede access for distinct social groups (Gran et al., 2020). For this reason, access divides in the physical domain may be replicated or even accentuated in online arts consumption (Mihelj et al., 2019; Weingartner, 2021). Evidence of latter is particularly problematic for museums seeking internal and external justification for investment in digital services that otherwise struggle to generate revenue in their own right. Justifying the financial and technical resources for a complete set of digital tools (website, apps,

multimedia tools, etc.) is beyond many smaller museums (Evrard & Krebs, 2018), and so digital divides also occur at an institutional level.

Despite challenges in identify the socio-economic determinants of access to onsite and online art and museum offerings, there is empirical support that opportunity for onsite consumption increases for those living in metropolitan and high population areas (Feder, 2023; Novak-Leonard & Brown, 2011). There is some evidence that income functions as an access barrier until a minimum threshold is met (Feder, 2023). There is also evidence that leisure time falls for lowest and highest income groups, while is highest for mid-range income earners (Feder, 2023). Access associated with the ability to appreciate and understand art and museum offerings has been negatively associated to own or parents' membership of an ethic minority (Feder, 2023; Kottasz, 2015), and positively associated with education (Ateca-Amestoy & Castiglione, 2023; Feder, 2023), age (Feder, 2023), and population density (Ateca-Amestoy & Castiglione, 2023; Feder, 2023). Finally, as an access dimension that impacts online cultural consumption, general digital connectivity and skills have been associated with youth (Calderón Gómez, 2021), higher education (Ateca-Amestoy & Castiglione, 2023; Mihelj et al., 2019), professional or managerial occupation (Mihelj et al., 2019), and mode of internet access (Calderón Gómez, 2021).

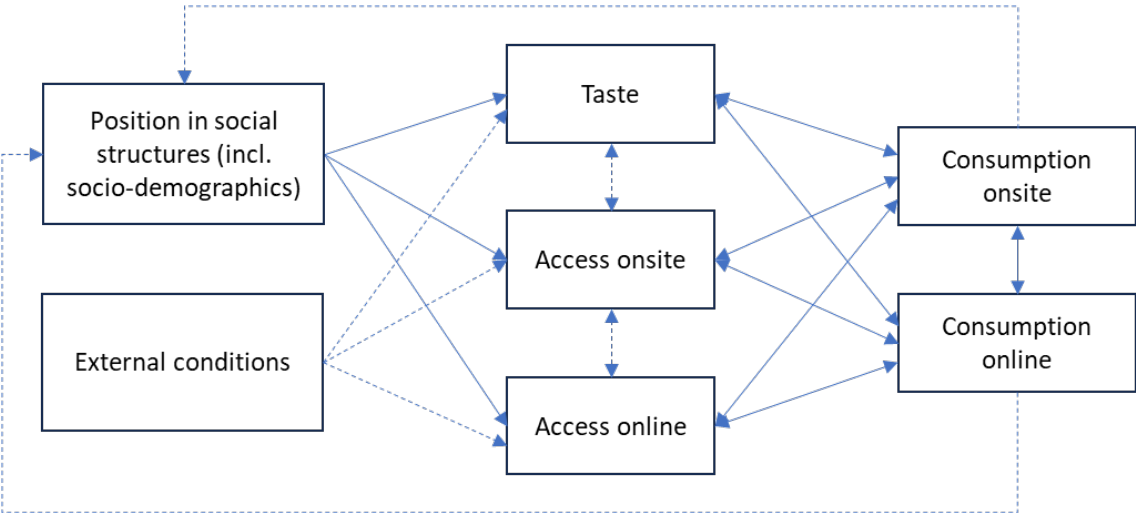


Figure 1: Relationship between social structures, taste, access and consumption

Taste and the perceived value of onsite and online museum offerings

The concepts of complements and substitutes remains surprisingly undertheorized in the handful of empirical studies of cultural consumption in the context of new digital offerings. The price-oriented definition, favoured in studies consumption, holds that the price two goods are substitutes (complements) if, keeping output constant, a reduction in the price of one good causes demand for the second goods to fall (increase). Perhaps due to complications arising from the market failure or non-pricing on many onsite and online goods, previous studies (e.g. Bakhshi & Throsby, 2014; Evrard & Krebs, 2018) have used the more rudimentary approach that substitution occurs where the supply of an (online) product reduces demand for another (onsite) product, while complementarity implies supply of an (online) product raises demand for the other (onsite) product. While a pragmatic approach, substitution and complementarity in the context of technical innovation is a more nuanced concept. For technology-based substitution, substitution transition periods are marked by uncertainty about the relative attributes of competing goods as product innovation evolves incrementally with the substitution process (Cameron & Metcalfe, 1987). Early experiences with a technology are therefore an imperfect predictor of future substitution or complementarity. Moreover, substitution is closely intertwined with social processes of technological diffusion (Cameron & Metcalfe, 1987), meaning a wide range of social factors impact the relational trajectory between an 'old' and 'new' product.

Recent studies comparing onsite and online art and museum consumption, particularly in a museum context, compliment knowledge of the socio-economic drivers of access and consumption by exploring variation in taste and perceived value. A small number of studies have explicitly analyzed taste profile differences associated with onsite and online museum visitation. In their study of onsite and online visitation to the Louvre, Evard and Krebs (2018) find purely online visitors value

the collaborative, socialization and communicative possibilities of the museum's online tools. Web tools are also valued for planning cultural activities, as is the notion free culture that they enable (Evrard & Krebs, 2018). Onsite only visitors value social and hedonistic dimensions of their visitation, while the visitors who visit both onsite and online use online offerings to prepare for their visit, and they are found to value the cultural achievement from deepening art and museum knowledge (Evrard & Krebs, 2018).

To date a relatively wide range of value metrics have been used in studies comparing values associated with onsite and online consumption. Utilizing Throsby's (2001) disaggregation of cultural value's components, Bakhshi and Throsby's (2012) assess onsite and online museum visitation in terms of aesthetic value ('emotional response'), symbolic value ('new ways of seeing'), and spiritual value ('experience of being transported') and social value ('seeing with others'). In relation to both onsite and online art and museum offerings, Evrard and Krebs (2018) identify authenticity as a key value. Focused on online visitation, Deng et al. (2023) measures value in terms of immersion experience, interactive experience, availability or effectivity of experience, and hedonic or emotion experience. Although conducted in a hybrid setting (using online tools onsite), Komarac and Ozretić (2022) argue the important of aesthetic and escapism value in museum experience.

From the small number of empirical studies connecting preferences and values to onsite and online museum consumption, some key findings are beginning to emerge. Compared to onsite visitation, online visitor's perceive lower aesthetic, symbolic, spiritual and social value (Bakhshi & Throsby, 2012). Despite increased sophistication of online offerings, visitors still experience low hedonic value (Deng et al., 2023). With the exception of foreigners, who are more likely to perceive online offerings as a substitute due to distance (Evrard & Krebs, 2018), research generally rejects the notion that onsite and online offerings act as substitutes (Evrard & Krebs, 2018; Resta et al., 2021). On the other hand, there is support that onsite and online offerings are perceived as complementary goods: online consumption increases the likelihood of onsite visitation (Deng et al., 2023), onsite

visitation increases likelihood of online consumption (Ateca-Amestoy & Castiglione, 2023).

Complementarity measured by mixed onsite and online visitation has a higher occurrence amongst those with the greatest cultural capital (Evrard & Krebs, 2018).

Summating existing literature, we anticipate the following attitudinal and participatory variables will be relevant to how consumers position themselves towards onsite and online art and museum offerings: i) Consumer participation; ii) Spatial, economic, and health-based accessibility; iii) Quality and breadth of visual and informational content; iv) Organizing of information (curatorship); v) Authenticity of the original; vi) Trust in content; vii) Ability to experience social value; and viii) Impact of medium on aesthetic experience and meaning.

Additionally, we argue the relevance of several additional attitudinal and participatory variables in the mapping of consumer positioning: ix) value of 'pilgrimage' to site; xi) medium as source of distractions from art, xii) type of art preferred; and xiii) online channels used.

Method and data

The data draws from a larger web survey, conducted between 16 and 28 November 2022, designed to capture a range of information related to the usage of and attitudes towards cultural consumption in Norway (N = 1501). Of the larger survey, eight questions captured 46 variables related to online and offline consumption of art, cultural objects, and art related experiences and events. Eight questions captured 18 variables on broader cultural and leisure consumption, while a further five questions captured five demographic variables. To limit non-substantive responses, the data set was filtered by the requirement that respondents had viewed art and museum objects online in the last six months, with a resulting sample of N=420.

Survey data was analyzed using Multiple Correspondence Analysis (MCA), a geometric modeling technique that reveals latent structures in matrixes of categorical data. MCA is considered an appropriate analytical method because its inductive approach is suited to the relatively under-

researched area of general consumer attitudes towards online art and museum offerings, it can analyze a broad informational set to map attitudinal and participatory differentiation, its relational quality aligns with the notion that tastes and behaviors may have multiple meanings (Roose, van Eijck, and Lievens 2012), and because it readily permits an analysis of attitudes and participation towards the online art and museum goods against the objective structures typically associated with differences in cultural consumption.

To conduct MCA, art consumption related survey data was recoded into 26 attitudinal and 20 participation variables, generating 113 active modalities. As part of this process, we ensured that variables containing modalities with a relative frequency of under 5% were either re-coded or set as passive in the MCA (Hjellbrekke, 2019), variables capturing ‘Other’ were set as passive, and the five-point Likert scale responses recoded to a three-point scale with the values ‘disagree’, ‘neutral’ or ‘agree’. 23 variables capturing broader cultural and leisure consumption and demographics were set as supplementary variables for the analysis.

Results

The number of axes to be interpreted in MCA is commonly based on both the decrease in eigenvalues and the modified rates, in addition to interpretability of the axes (Le Roux & Rouanet, 2010). Table X presents the eigenvalues, raw inertia rates, and modified rates for the first five axes. With 49%, the first axis is the most important, while the second adds 27% and the third another 9%, for a total of 85%.

Table X: Eigenvalues, raw and modified inertia for the first five axes.

Axes	1	2	3	4	5
Eigenvalues (λ)	0.1221	0.0968	0.0647	0.0522	0.0470
Raw Inertia	8.38	6.65	4.44	3.58	3.23
Modified inertia	49%	27%	9%	4%	3%

Cloud of modalities

To assist interpretation of the axes, Figures 2 to 4 display modalities with an absolute contribution that exceeds the average for each axis (i.e., contribution $> 1/K$, where K equals total active modalities). For visual clarity, the size of the markers is not proportional to their contribution to the axis. Negative (-), positive (+), and (-/+) neutral signs indicate attitudinal positions towards variables.

- Axis 1 ($\lambda_1=0.122$): 'interested online sceptic' versus 'online-only disinterested and indifferent', See Fig. 2

46 modalities from 30 variables contribute more than average to the variance in axis 1. Drawing primarily from attitudinal questions covering perceived benefits and limitations of online consumption of art and museum related material relative to onsite consumption, these modalities collectively account for 83% of the variance in this axis. The left-side reflects those with a specific online search interest (cultural history, classical and contemporary art), who consider online consumption as having no access advantages (transport, time, entry cost), no choice advantages (large choice, customization, multiple collections, metadata), and who consider online consumption to have disadvantages in terms of curation standard, the sociality of consumption, documentation and absence of the original. In contrast, the right-hand side is broadly characterized by the non-art interested, those who don't visit museum or galleries onsite, and generalized neutral/indifferent attitudes towards a range of benefits and limitations of online consumption covering access, sociality, documentation, and functionality.

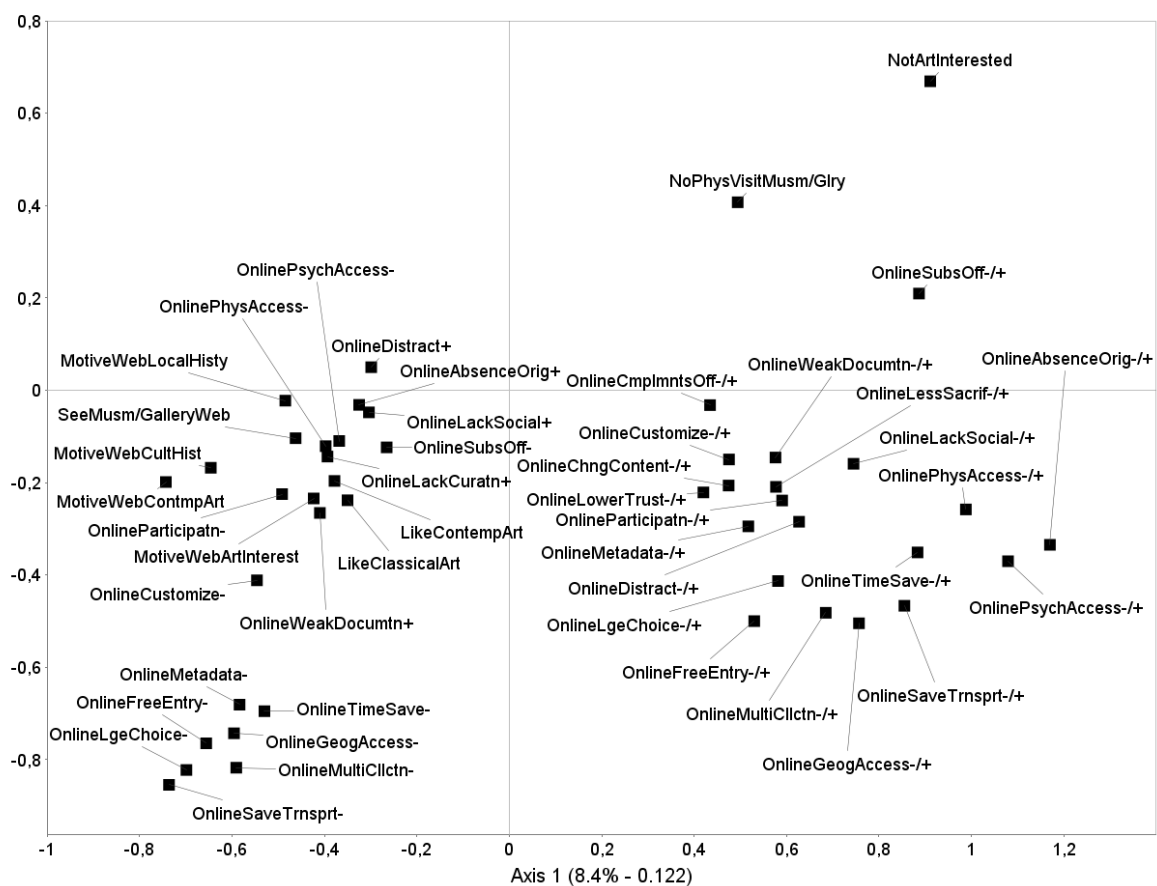


Figure 2. Plane 1–2. Interpretation of axis 1: modalities most contributing to axis.

- Axis 2 ($\lambda_2=0.097$): ‘access and informational benefits sceptic’ versus ‘access and informational benefits favourable’, See Fig. 3

33 modalities from 21 variables contribute more than average to the variance in axis 2 and collectively account for 84% of the axis’ variance. The axis primarily draws from the attitudinal questions relating to purported benefits of online visitation and consumption of art and museum offerings. The lower section of the axis reflects negative to neutral attitudes towards the notion that consuming online offers savings (time, transport, and entry costs), broader offerings (user choice, multiple collections, customization), enhanced information (metadata), and improved geographic access. The upper section of axis 2 holds generally positive attitudes towards online art and museum consumption – online visitation and consumption offers savings (time, transport, and entry costs), it enhances the breadth and depth of information accessible (collections, metadata), it improves access

(geographic, physical and psychological) and offers greater opportunities of participation and customization. Moreover, potential weaknesses of online art and museum consumption - absence of the original, lack of curation, absence of 'pilgrimage' to site experience, lack of social elements - are rejected. The axis is further characterized by those who not consuming art and museum offerings onsite and the more broadly art disinterested.

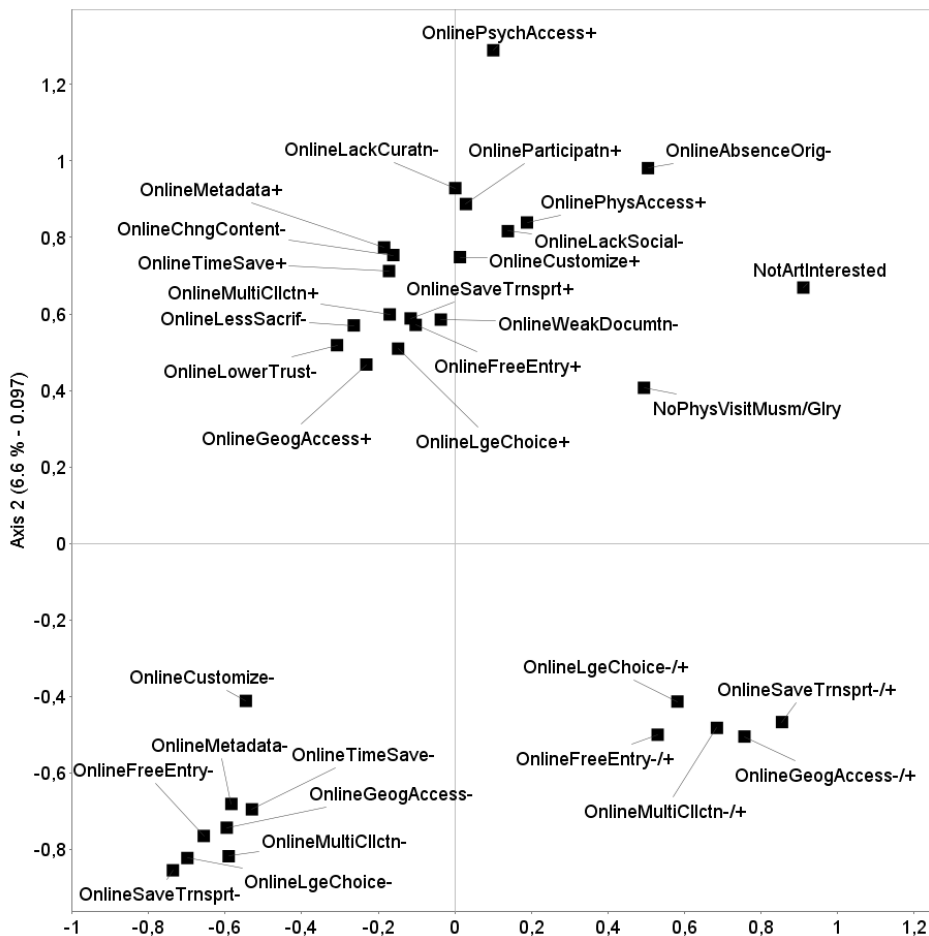


Figure 3. Plane 1–2. Interpretation of axis 2: modalities most contributing to axis.

- Axis 3 ($\lambda_3=0.065$): 'random image-oriented art consumer' versus 'interested, platform specific but benefits neutral', See Fig. 4

43 modalities from 34 variables contribute more than average to the variance in axis 3 and collectively account for 83% of the axis' variance. The axis primarily draws from motives for viewing art and museum offerings online, online websites and apps used for art and museum consumption,

and art genres preferred. The left-hand side of the axis is characterized by those lacking specific interest in consuming art online for historical purposes (cultural history, local history, archeology), a general disinterest in art and classical art in particular, disagreement that online consumption lacks the sociality, authenticity or content of physical visitation, but equality that online visitation doesn't offer access benefits (entry cost, transport, time, breadth of choice, customization and collections). The right-hand side of the axis captures those with a broad range of motives and art interests driving online art and museum consumption, users of dedicated websites and apps for online art and museum consumption who otherwise hold neutral attitudes towards some of the potential limitations (distractions, quality of documentation) and benefits (customization, breadth of choice, participation) of online consumption.

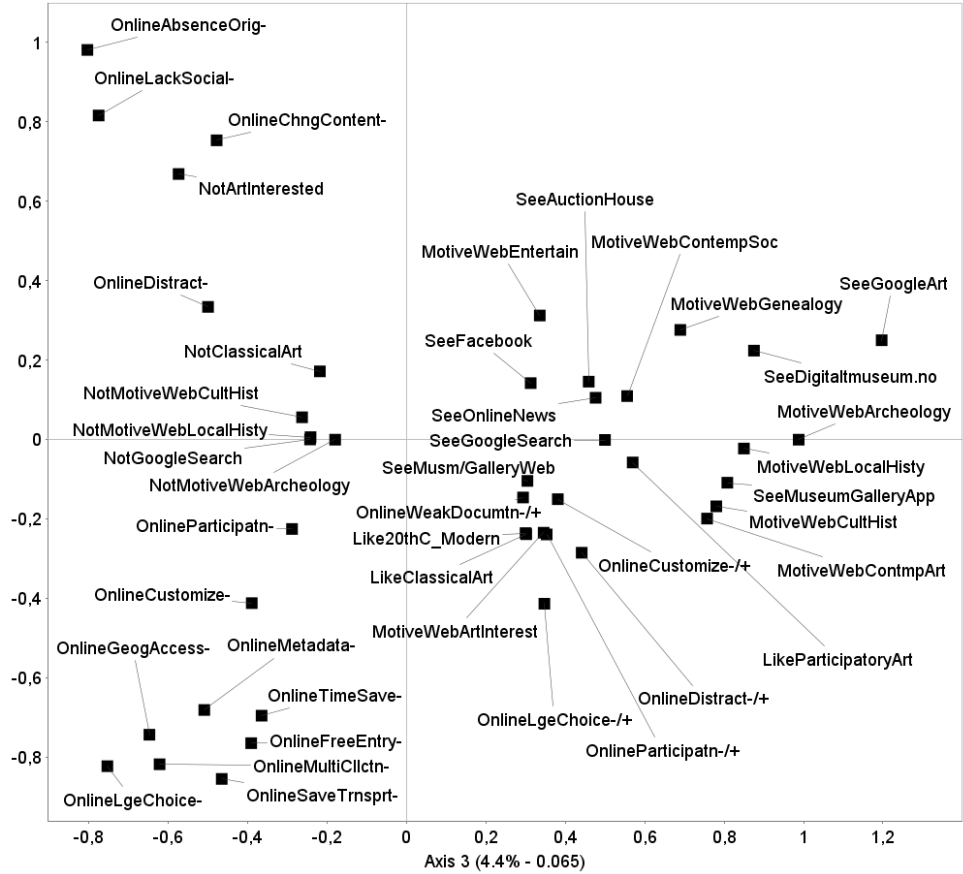


Figure 4. Plane 3–2. Interpretation of axis 3: modalities most contributing to axis

In summary, we find the positioning towards online consumption of art and museum offerings to be structured along three dimensions. The first dimension reflects an opposition between those with a specific consumption interest and general skepticism towards the online substitutability of the onsite product and experience ('interested online sceptic') and the less art interested with neutral, indifferent or undecided attitudes towards the benefits and disadvantages of online vis-à-vis onsite art and museum consumption ('online-only disinterested and indifferent'). The second dimension primarily reflects an opposition between neutral, undecided and negative attitudes towards access and informational-related advantages of online consumption ('access and informational benefits sceptic') and positive attitudes towards the access and informational benefits of online offerings ('access and informational benefits favourable'). The third dimension captures an opposition between the less interest- and platform-driven consumer of art and cultural goods ('random art consumer') who reject notions of diminished sociality and authenticity online ('image oriented') with the interest- and platform-driven consumer otherwise neutral to auxiliary benefits and limitations of the online ('interested, platform specific but benefits neutral').

Supplementary variables

To understand the association between structured social attributes on the one hand and the just described map of attitudes and participation towards onsite and online art and museum consumption, we project supplementary socio-demographic, tourism preferences and other markers of cultural consumption onto the three attitudinal and participation dimensions.

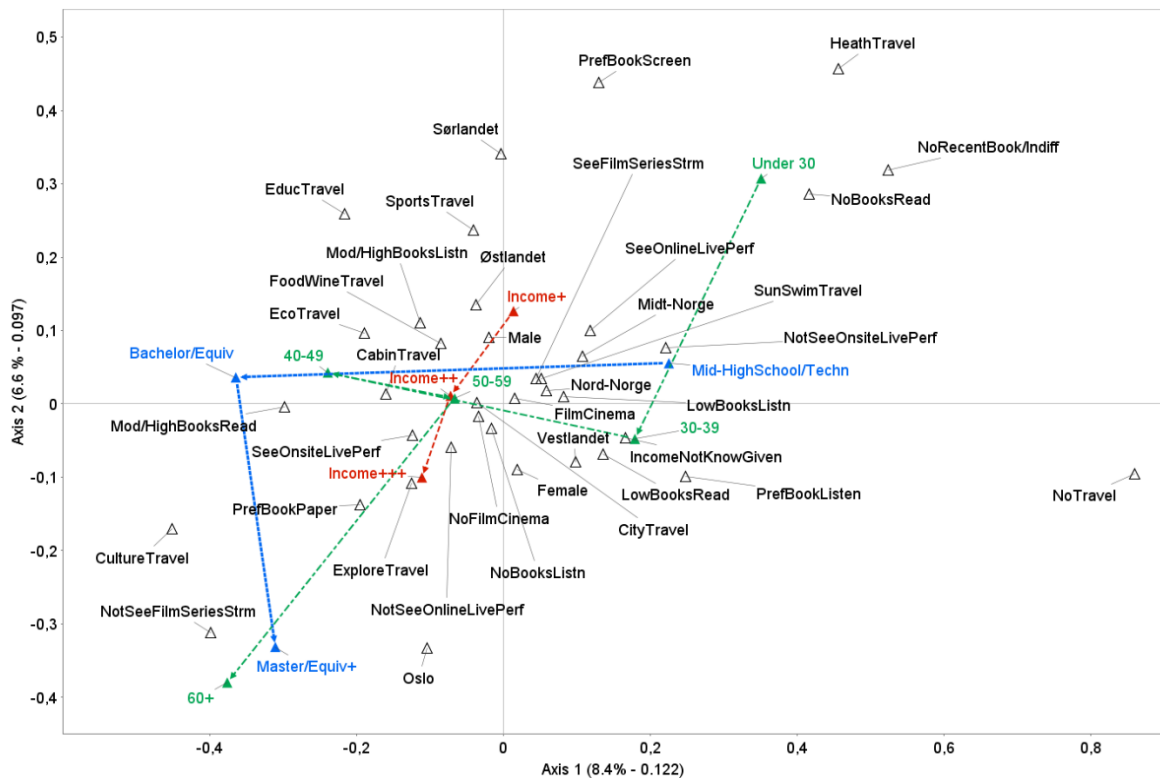


Figure 5. Selected supplementary variables projected in plane 1-2, modalities with weighting < 5% excluded.

In relation to axis 1, we find evidence of greater specificity of consumption interest and higher skepticism towards the online substitutability of the onsite product and experience (herein referred to as the ‘interested online skeptic’) among the older and those with tertiary education. Income, gender and geographic location within Norway are not found to have significant association with axis 1. With respect to other cultural markers, higher skepticism towards online substitutability of the onsite is associated with those preferring other analogue mediums (books, live performance) and avoiding streaming services, those who read more, those engaging in cultural tourism and cabin stays. With the exception of the latter practice, which is somewhat specific to the Nordics and can span a broad spectrum of income and educational groups, we can then say that the online skeptic shares some of the characteristics of the traditional ‘highbrow’ cultural consumer. The results also suggest that the source of skepticism towards online offerings may not be located in a specific experience of the art and museum offerings online, but rather in a more generalized rejection of

online formats. Towards the other pole of this axis, we find neutral, indifferent or undecided attitudes towards online art and museum offerings are higher among the younger and those without tertiary education. In terms of cultural markers, we find neutral/indifferent/undecided attitudes among those who consumer fewer books and use digital devices or listen to audiobooks when they do, among those who don't consume onsite live performance and use streaming services for films and series consumption, and among people who engage in health-related tourism or no travel at all. In view of the cultural markers associated with this pole of the axis, as well as their stated disinterest in art, we assume that it is indifference rather than neutrality or undecidedness that characterizes this attitudinal position.

In relation to axis 2, we find many similarities in the objective structures associated with the poles of axis 2 as was found for axis 1. There is positive association between skepticism towards access and informational-related advantages of online consumption and age, and those with the highest level of educational attainment. While a plotting of the position of income categories across axis 2 indicates the 'access and informational benefits sceptic' is associated with higher income, this relationship is not found to be significant in ANOVA tests (see Table X). While neither gender nor geographic location within Norway are not found to have significant association with axis 2, those enjoying the greatest access to art and museum offerings, people living in Oslo, are the geographic group most sceptical towards access-related advantages of online offerings. In term of cultural markers, this predominately attitudinal position is characterized by those who prefer to traditional formats for consuming books (paper) and film and television (don't use streaming services), and those who engage in cultural tourism and tour-based travel. The other pole of this axis, favourable attitudes towards access and information-related advantages of online consumption, is associated with the younger, those without long tertiary education, consumer of books in digital formats or not at all, users of streaming services for film and series, and those who prefer sports tourism.

For axis 3, the ‘random image-oriented art consumer’ is strongly associated with youth but neither education, income, gender nor geographic location. In relation to cultural markers, the lower levels of reading activity significantly associated with this position should not be understood as lack of traditional (onsite) cultural participation. The ‘random image-oriented art consumer’ is more likely to have seen an onsite live performance and be consumers of cinema offerings. Characterizing the ‘interested, platform specific but benefits neutral’ attitudes at the other end of this axis are the older, those who read more but are less likely have recently visited in an onsite live performance or seen a film in a cinema. This position is also characterized by those engaging in cultural and tour-based travel. While lack on onsite participation might stand out for a group that otherwise engages in cultural tourism, we note that typical markers of associated with traditional cultural consumption such as education are not significantly associated with this group. Moreover, age in the content of the tail-end of Covid-19 health fears may have dampened onsite participation.

Table X. Significance of distance between the modalities^a along axes 1–3.

Supplementary variable	Weight	Position axis 1	Eta-square	Position axis2	Eta-square	Position axis 3	Eta-square
Age			0.080		0.072		0.043
Under 30	126.953	0.351***		0.307***		-0.313**	
30-39	68.944	0.179***		-0.048***		-0.061**	
40-49	63.673	-0.239***		0.043***		-0.093**	
50-59	50.734	-0.066***		0.007***		0.274**	
60+	102.209	-0.376***		-0.389***		0.352**	
Education			0.073		0.031		0.011
Mid-HighSchool/Techn	249.719	0.226***		0.055**		-0.102	
Bachelor/Equiv	109.114	-0.364***		0.036**		0.134	
Master/Equiv+	53.680	-0.310***		-0.331**		0.201	
Preferred book format			0.047		0.042		0.007
NoRecentBook/Indiff	52.275	0.525***		0.318**		-0.341	
PrefBookPaper	249.890	-0.194***		-0.138**		0.059	
PrefBookScreen	53.401	0.130***		0.438**		-0.130	
PrefBookListen	56.947	0.249***		-0.099**		0.177	
Paper book reading activity			0.056		0.009		0.019
NoBooksRead	50.048	0.417***		0.286		-0.349*	
LowBooksRead	200.930	0.136***		-0.068		-0.063*	
Mod/HighBooksRead	161.535	-0.298***		-0.004		0.186*	

Seen onsite performance (past 12 mths)?			0.026		0.006		0.012	
SeeOnsiteLivePerf	264.825	-0.124**			-0.043		-0.104*	
NotSeeOnsiteLivePerf	147.688	0.222**			0.077		0.186*	
Watch film or series via streaming?			0.014		0.011		0.000	
SeeFilmSeriesStrm	370.913	0.045*			0.035*		-0.024	
NotSeeFilmSeriesStrm	41.600	-0.398*			-0.312*		0.215	
Seen film in cinema (past 12 mths)?			0.001		0.000		0.010	
NoFilmCinema	133.228	-0.034			-0.017		0.166*	
FilmCinema	279.285	0.016			0.008		-0.079*	
Common forms of tourism activity (multiple selection possible)								
CabinTravel	168.724	-0.159*	0.011		0.013	0.000	-0.009	0.000
HeathTravel	22.129	0.456*	0.010		0.457	0.008	-0.313	0.004
ExploreTravel	86.520	-0.125	0.004		-0.108*	0.010	0.314*	0.016
CultureTravel	111.692	-0.451***	0.080		-0.171**	0.017	0.241*	0.011
SportsTravel	38.462	-0.040	0.000		0.237*	0.011	-0.037	0.000
NoTravel	22.737	0.860***	0.030		-0.096	0.001	-0.169	0.001

^a Supplementary variables not listed where p -value of F-statistic > 0.05 in all three axes.

^b *, **, and *** designate evidence of significant difference between variable modalities determined by F-statistic with p -value \leq 0.05, 0.01, and 0.001 respectively.

^c Eta-square (η^2) measures percentage of variance of a given axis accounted for by the modalities of a supplementary variable. Following Cohen's (1988) rule of thumb, η^2 values of 0.01, 0.06, and 0.14 can be broadly interpreted as a small, medium and large effect. In line with Hjellbrekke (2019), we consider $\eta^2 < 0.025$ indicates weak association between the supplementary variable and the axis.

Discussion

Generational divide in the mechanisms of distinction?

In Bourdieu's terminology, our findings show analogue cultural consumption coupled with a skepticism towards online substitutability rises with cultural capital, while primarily digital consumption, and indifference to the importance of the format, dominates those with little/less cultural capital. There is little to suggest that the rejection of digital formats and online channels today derives from a tension between an online product which is seen as more commercial and market-driven (heterogeneity) in comparison an onsite offering presented for art's sake (autonomy). Indeed, most of the online art and museum offerings originate from non-profit organizations that generate little or no income from the content produced. Nevertheless, we find consumption of analogue formats, including onsite visitation, across multiple cultural objects becomes new markers of social distinction. This finding aligns with Daenekindt and Roose's (2017) argument that social

distinction increasingly resides in *how* good rather than *what* is consumed. This distinction is further supported by the online sceptic's preference for onsite sociality and the stated importance of consuming in the presence of the original. This latter preference also suggests that some well-known historical values drive analogue preferences and attitudes, namely authenticity, originality and aura. This legacy from romanticism, which was continued in modernism's demand for genuine innovation, remains a key value proposition forwarded by art galleries and museums. As we find, this is a key value and marker of distinction for what we suggest is the traditional cultural elite.

This seeming clarity of now observing distinction through *how* cultural consumption occurs is complicated by the consumption behaviour of the younger digital natives. While the well-educated and elderly are the strongest defenders of analogue formats and onsite consumptions, the young either prefer online consumption per se or are indifferent or neutral about whether the format is analogue or digital. On one hand this could be interpreted through a Bourdieusian lens – this indifference accords with the cultural capital of the 'lowbrow' consumer, a group which is expanding alongside the growing quantity and accessibility of mass-market online content. This interpretation can mean that analogue formats and onsite institutions will be considered even more exclusive in the future, and that they will become a more important marker of social distinction for coming generations. On the other hand, the observed generational differences may suggest preferences for analogue formats and onsite institutions only occurs at this point in technology history, and that these preferences will not be passed down in socio-economic inheritance as genre preferences for classical high culture have done (inherited habitus dispositions).

New online quality criteria – the triumph of access and content

With digitalization came fundamental changes in quality criteria and values in the creative industries, which is also reflected in our findings. In online cultural consumption, access in particular has been launched as a new quality criterion, and also in the museum sector the value of access is gaining ground at the expense of the historical quality criteria of authenticity, originality and aura (Hylland,

2017). In a cultural policy context, online access is a quality of a democratic nature because more people, and more diverse segments, can consume culture online and even for a cheaper price (A. B. Gran et al., 2019). Our study distinguishes between three different types of access benefits - spatial advantage, temporal advantage and quantity advantage – and finds that access benefits are recognized by non-typical onsite audiences, namely the younger, less educated, and the general consumer of ‘low-brow’ cultural consumption (e.g. sports and tv series). We also observe that these same demographics tend to consume art and museum good on third party services rather than dedicated museums websites and apps. In line with previous research (Evrard & Krebs, 2018; Resta et al., 2021), we find the usage of the latter to be higher among those already engaged in cultural consumption. While this indicates digital tools are able to contribute to audience democratization and diversity by offering a ‘good enough’ product with access benefits, our findings suggest cultural policy related funding would be better directed towards museum documentation and open data initiatives that could be repackaged and distributed by third parties rather than the development of dedicated museum website and apps.

Another major change in digital cultural consumption is the focus on ‘content’. Content is the melody in music, the story in film and literature, the picture in fine arts and the museum sector, i.e. what the picture is a visual representation of. Examples of such a content approach in other creative industries are consumers who skip slow scenes in films, listen to audiobooks at high speeds and tolerate robot narrators, listen to music on the mobile speaker and watch films on their mobile. In all cases the consumer focuses on the content. When content becomes the most important aesthetic value, the format arguably loses importance - it is the same melody, the same story and the same picture in all the different versions of them. This may explain why young people are more indifferent to formats than the elderly, while they do care much more about the online access advantages, and of course the multitask possibilities.

Our study shows signs of the growing importance of access and content for a group of cultural consumers, particular the non-traditional onsite consumer of art and museum offerings. To the extent that these become a clearer or dominant quality criteria phenomenon, it raises the question of what it will mean for onsite cultural heritage and all kinds of museums in the future.

The financial impact of onsite substitution

In line with previous studies, our study finds little evidence that online art and museum offerings currently function as a substitute for onsite visitation. Given technological innovation and the evolving social conditions for its diffusion continue to alter the value proposition of online offering (Cameron & Metcalfe, 1987), the question of substitution nevertheless remains a present issue. The new quality criteria in digital cultural consumption (i.e. access and content) can have a major impact on the economy of onsite industries including museums and the visual arts. Both online collections and marketing can contribute to making the museums more visible and to attracting more visitors, but the digital presence can also lead to a decrease in physical visits, considering the appreciation of digital access, content focus and home consumption among the younger generations. Even a small drop in ticket sales could have major financial consequences for poor and vulnerable museums. This probably applies especially to small regional museums that depend on reuse by the local population, in contrast to the large tourist attractions in the category "must see" when you visit a place.

Digitalization may also strengthen the tendencies towards a superstar economy that already exist in the sector, where a number of highly-resourced and international museums dominate media and consumer attention. In the so-called attention economy (Franck, 2018), digital visibility is a great advantage, and those museums that have the financial muscle to curate their collections online, participate on many social platforms, pay for search engine optimization and carry out algorithm optimization in their own SoMe profiles, etc., will have a great advantage in the competition for physical visitors.

Digital cultural policy – a contribution to substitution?

Museums and cultural heritage in Europe are known to be significantly publicly subsidized. In addition, the public sector, both at national and EU level, has helped finance free online museum services where consumers can view large collections. Digitization has been carried out to archive the physical museum objects in the new technological formats and to make them accessible to both researchers, the sector itself and the entire population. There has been considerable cultural-political techno-optimism on behalf of the new digital dissemination possibilities. Hylland (2017) argues that the replacing of authenticity with accessibility has become the primary legitimating value of museum objects.

In terms of cultural policy, it has been taken for granted that the online collections are only supplements to the museum institutions, and to the extent that they influence each other, the relationship is positive: Digital museum collections can get more people interested in visiting museums. This effect however isn't well supported in empirical studies, with dedicated online offerings largely used by the already onsite visitor (Evrard & Krebs, 2018; Resta et al., 2021). The fact that publicly funded digital services also risk replacing some onsite visits has not been on the agenda, and because of the potential risks and the outcomes already observed in other creative industries it deserves more attention from cultural policy makers.

With such strong and rapid changes we have seen in cultural consumption in recent decades, and not least after the pandemic, we believe there is every reason to examine all aspects of digital consumption in the visual arts, including the potentially negative consequences for the economy, for the role museums in public life when home consumption increases, and the consequences of the replacement of authenticity with accessibility in policy. The large generation gap we found in our analysis suggests that the biggest challenges for onsite cultural institutions lie ahead.

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