Perspectives of creators and performers on the digital era

Joost Poort

University of Amsterdam, the Netherlands

Ilan Akker

Policy Productions, the Netherlands

Paul Rutten

Rotterdam University for Professional Education, the Netherlands

Jarst Weda

SEO Economic Research, the Netherlands

Abstract

In this contribution, a nearly comprehensive survey among creators and performers in media, arts and entertainment in the Netherlands is presented. It concerns the implications of digital reproduction and distribution for the creative professions as perceived by those working in it. Based on regressions and cluster analysis of the survey data, an analysis is provided of income developments and perceived threats and opportunities of digitisation, as well as an exploration of the underlying socio-economic and professional factors. Many creators and performers perceive digitisation primarily as a threat. Although age is a relevant explanatory factor for the opinions regarding digitisation, the notion of a generation gap is shown to be an oversimplification. Other relevant dimensions include income development, education level, and the way digitisation has affected respondents' discipline.

Keywords

Survey, Creators, Performers, Digitisation, Copyright, Cluster analysis

Corresponding author:

Joost Poort, Institute for Information Law, University of Amsterdam, Kloveniersburgwal 48, 1012 CX Amsterdam, the Netherlands. Tel.: +31 (0)20 5253324. E-mail: poort@uva.nl

1   Introduction

On 22 April 2010, YouTube removed several parodies of the famous bunker scene in the film *Der Untergang* after the producer, Constantin Films, filed a complaint about copyright infringement. However, the director, Oliver Hirschbiegel, responded that these parodies were a compliment for him and had actually amused him. Along with other anecdotic evidence, such as the experiment of the band Radiohead who posted their album *In Rainbows* on their website for a voluntary payment, and Lady Gaga stating that she has no problem with people downloading her music, this news item suggests that creators and performers are more lenient towards copyright issues in the digital era than most producers and publishers. In contrast, Madonna and Scorpions guitarist Rudolf Schenker have been very critical about file sharing, which suggest that not all popular artists take a lenient position towards copyright infringement. Could this be a generational issue or are there other factors at play here?

Digitisation, a term used in this article as shorthand for digital production, reproduction and the distribution of works through free or paid download or streaming services, websites and social media, contains both threats and opportunities for creators and performing artists. On the one hand, it enables them to reach their audience or clients without intermediation. They can bypass traditional media companies and create 'buzz' through social networks which can be capitalised in live performances or assignments. On the other hand, digitisation implies a loss of control over the distribution of and payment for their work as a consequence of unauthorised file sharing (commonly referred to as 'piracy'). Despite the many commentaries on the changes in the cultural and media landscape caused by digitisation, a systematic analysis of the perspectives of creators and performers on these matters is lacking.

This article is aimed at filling this gap. The positions of creators and performers on copyright in the digital environment and their perception of the implications of digitisation for their profession are investigated. A broad scope is chosen for the study, investigating individuals working in the nucleus of the creative process in those domains and sectors in which copyright is a crucial part of the business model, both for creators and performers, and for institutions and corporations active in the exploitation of those rights. These corporate players remain unaddressed in this study, since the implications of digitisation for them have been addressed frequently. What the creators and performers focussed on in this study have in common is their role as an initial source of creative input, but they are expected to differ in their perceptions of the consequences of digitisation. The specific development phase of the creative sector they work in, the nature of the works in their professions (for instance the written word, music or audio-visual) as well as the mediation of their creative output to their main audiences (directly face-to-face or through electronic media) are expected to lead to different perceptions and opinions. Therefore, a wide range of creators and performers is addressed, from photographers to journalists and from translators to video artists.

Combining several survey questions, an index of opportunities and threats of digitisation as perceived by different professions is created. Although respondents' socio-economic characteristics and their profession can to some extent explain their position on these indices, these characteristics do not provide any insight into the underlying variance between individual respondents, nor do they explain the coherence in the responses to the various questions. For this purpose, cluster analysis is used to distinguish seven response profiles encompassing eight key variables indicating respondents' positions towards

digitisation, copyright and their future within the domain of cultural production. Respondents within a cluster hold relatively homogenous opinions. Demographic characteristics and the professions that are under- or overrepresented in these groups are informative as to which characteristics explain respondents' attitudes. They show that besides generation the way creators perceive their role and position in the digital age is influenced by education, income development and creative discipline.

2   Background

Digitisation brings new opportunities and challenges for creators and performers, centred around disintermediation, new players, and unauthorised distribution and re-use. Disintermediation involves the disruption of the traditional vertical set-up in which media institutions were in charge of producing and distributing content, and changing it into a more horizontal paradigm allowing creators and performers to operate independently. Many now reach their audience directly through social media. They can communicate with their clients over the Internet and sell their work without intermediaries, making them less dependent and providing them with a stronger bargaining position towards producers and publishers. On the other hand, professional creators and performers face competition from debutants and amateurs who use social media and online distribution to bypass the traditional selection mechanisms and quality filters.
Simultaneously, companies that are new to the media industries manifest themselves as information providers and publishers: Apple and Google have developed into media institutions, providing access to information and cultural products.
Digitisation also spurred the unauthorised distribution of creative works: never before has it been so easy for creators and performers to reach an almost worldwide audience, yet never before has it been so easy for their audience to obtain content without paying for it. Within certain creative disciplines, free digital distribution of content may be part of a business model in which it serves as promotion for live performances. In other disciplines, however, no such alternative sources of income exist.

The balance of these opportunities and threats and the future structure of the entertainment industry has so far remained undecided. Notably, the effect of file sharing on sales is a much debated issue in the academic literature. A majority of authors find a negative effect of file sharing on sales, but others find little or no effect and occasionally even a positive effect (see Smith and Telang (2012) for a literature review). Moreover, even with negative effects on sales, short-term welfare effects are likely to be positive, while the dynamic effects on creative production need not be negative either (Van Eijk et al., 2010). A study on the evolution of the quality of recorded music over time indicated it has increased rather than decreased since the launch of Napster in 1999 (Waldfogel, 2012). Underlying the debate to what extent performers and creators experience harm from file sharing, is a more ideological debate as to whether copyright enforcement should be stricter or more lenient in the face of massive unauthorised file sharing.
In comparison to the rather extensive literature on the effects of file sharing on media sales, studies on the perspectives of creators and performers on the impact of digitisation are scarce. Most of the research on artists' labour markets originates from the time before digital reproduction and distribution were widely adopted (see Towse (2001) for an extensive discussion). Madden (2004) performed a survey amongst self-declared artists and musicians. It turned out that both groups were using the Internet more than the general

public was. In particular musicians used the Internet to reach their audience and as a source of inspiration. Musicians with lower income stated more often that the Internet increases their opportunities to reach their audience. At the time of Madden's survey, most artists were still hardly affected by digital developments, yet they were largely in favour of using technologies for copyright protection (DRM). Especially successful musicians were concerned that file sharing would harm them. Of the surveyed musicians, 83% provided free samples of their work online. Nevertheless, two thirds of both artists in general and musicians agreed that copyright holders should have complete control over the use of their work.

Kretschmer and Hardwick (2007) surveyed professional writers in the United Kingdom and Germany about their income. They found that in both countries authors' incomes have decreased since 2000. Authors earn considerably less than typical wages in other professions, a conclusion also found in earlier work on artists' earnings (Towse, 2001; Chapter 3). Authors in the UK earned 64% of the net median wage, while German authors earned only 42%. This is in line with Frey's (1997, 1999) assertion that the supply in artist labour markets depends on both intrinsic and extrinsic motivations and rewards. As Caves (2000: 4) put it: "...on average [they] earn lower pecuniary incomes than their general ability, skill and education would otherwise warrant."

Equally typical for artists' labour markets is the skewed income distribution, which implies that average income statistics are of relatively little value to understand the artists' economic position: the winner takes all. This is, however, mitigated by incomes outside creative professions. Only one out of five writers earned their total income as a writer. As Kretschmer and Hardwick (2007) coined it, most authors lead 'portfolio lives'.

Kretschmer et al. (2011) conducted a similar study among visual creators in the United Kingdom in 2010 and found a comparable pattern of lower wages, portfolio lives and a more skewed distribution than in other sectors. The peak of income was found to be in the age bracket of 35-44, which is in line with other studies on artists' income development with age (Towse, 2001; Chapter 3) but in contrast to the typical labour market pattern that income peaks close to the retirement age.

Apart from income, Kretschmer et al. (2011) surveyed respondents on terms of contracts and bargaining power. The results are mixed: photographers generally feel that their bargaining power has decreased, while visual artists and designers see improvement. Illustrators occupy a middle position. A speculative explanation for these differences is that through the general availability of good-quality digital cameras and editing software, professional photographers face more competition from amateurs than other visual artists do.

3 Method

3.1 Survey design

In this study, an online questionnaire was used among creators and performing artists in the Netherlands. It includes 54closed questions/statements and was conducted in October-November 2010. Statements were presented using 5-point Likert scales, ranging from 'strongly agree' to 'strongly disagree', plus a sixth scale item for 'don't know' (De Pelsmacker and Kenhove, 2006).

Apart from questions about the socio-economic and professional background of respondents, the main themes in the questionnaire were:

- Digital developments and preferences concerning online exploitation;
- Contracts and bargaining position vis-à-vis producers and publishers;
- File sharing, remixing, copyright enforcement and digital rights management (DRM);
- The role and performance of collecting societies (also known as copyright collectives).

3.2 Targeting individual rights holders

Five major collecting societies and seven professional associations invited their members to participate by sending them an e-mail with some background information about the survey, a hyperlink and a unique username and password to log in to the survey.[1] As nearly all of these organisations chose to handle the e-mailing themselves for privacy reasons, it was impossible to merge mailing lists and delete double entries (i.e. people included in more than one mailing list). To be able to estimate the actual number of creators and performers addressed, respondents were asked how many invitations they had received.
 A total of 32,000 members of collecting societies and professional associations were invited to partake in the survey.[2] Respondents reported having received 1.4 e-mails about the survey on average. Correcting for this overlap, an estimated maximum of 23,500 individuals was invited.[3]

3.3 Response characteristics

A total of 6,054 people responded to the invitation: a gross response rate of 25.8%. Several filters were applied to convert this response into a valid sample. First of all, people who are not or no longer active as a creator or performer (e.g. retired performers and creators, or successors) and people who spend less than 12 hours a week on creative activities and have no intention of increasing this, were excluded from the sample. Furthermore, several people quit after seeing the introduction screen, which is most probably the result of receiving a second or third invitation to the questionnaire. Checks were then performed to ensure that the number of duplicate respondents (an analysis of double IP addresses) and deliberately inaccurate respondents (an analysis of case-wise data variance) was minimised.
A net sample of 4,645 respondents resulted, of which 3,935 completed the survey. 710 people partly completed the survey and 210 people were presented a short version of the questionnaire as they neither now nor in the future expect their creative work to be digitally distributed. Considering that a respondent on average spent over 27 minutes filling out the questionnaire (excluding partly completed surveys, short versions of the questionnaire and extreme values), this response is very satisfactory.

Respondents were asked to tick their creative activities within 19 occupations. In case they ticked more than one activity, they were asked to indicate their primary activity. The self-proclaimed primary activities of creators and performers are listed in Table 1.[4] Most respondents are male (69%) and the mean age in the sample is 49 years, with occupation means ranging from 44 to 56 years old. Most (80%) have been active in their discipline for more than 10 years, and half for more than 20 years.

Table 1 Primary activity

Occupational group	% of sample	N
Performing musician	21%	993
Photographer	13%	595
Composer/lyricist	12%	555
Visual artist	10%	451
Designer	9%	419
Actor	6%	289
Illustrator/cartoonist	6%	286
Author	6%	285
Director	5%	225
Singer-songwriter	4%	186
Translator	2%	105
Journalist	2%	79
Screenwriter/scriptwriter	2%	73
Video artist	1%	31
Other disciplines	2%	73
Total	100%	4,645

3.4 Representativeness

Too little is known about the demographic characteristics of Dutch creators and performers to allow for an extensive analysis of the representativeness of the response. Statistics Netherlands (CBS) published a study on Dutch artists (Jenje-Heijdel and Ter Haar, 2007), but the aggregated manner in which statistics are presented, entails that artist categories are 'contaminated' by the inclusion of occupations that were not part of our study, such as urban planners and landscape architects. Only two aggregated groups can serve as benchmarks: (1) Dance, Theatre & Music, and (2) Visual Arts, Language & Miscellaneous. Compared with Jenje-Heijdel and Ter Haar (2007), our sample has an underrepresentation of age groups younger than 34 and by consequence an overrepresentation of age groups older than 54. This age bias is reflected in other studies in which the same mailing lists were used (IJdens et al., 2009; Von Der Fuhr et al., 2010; Brouwer and Zijderveld, 2003). The difference in age distribution also affects age-related characteristics such as years of experience, household position and income and can be explained by the fact that the relevance of copyright and neighbouring rights increases with age. As creators and performers build up their oeuvre, a larger part of their income is derived from royalty payments from collecting societies and publishers. This also explains why a comparison with the age distribution of the mailing lists used in this study does not indicate a systematic age difference.
There may be a slight survival bias in our sample as compared to the entire population of creators and performing artists. However, it does not impair the valid analysis of the various topics in this study. The number of young respondents is sufficiently large (over 500 respondents are younger than 35). Moreover, possible age effects are isolated by means of multivariate techniques.

3.5 Analysis

In the next section, the current and expected future earnings of creators and performers are assessed. Next, questions relating to the perceived opportunities and threats of digitisation

are combined into two indices, and the factors influencing the position of respondents and professional groups on these indices are analysed.

Subsequently, cluster analysis is used to shed some light on the patterns of answers given by respondents. A cluster is a homogenous group of respondents in terms of their answers to survey questions. Profiles of respondents of different clusters are, on the other hand, heterogeneous. The result elucidates the diversity of opinions among creators and performers, illustrating the social and cultural differences between groups (or 'clusters') of respondents, their different views on copyright, neighbouring rights, collecting societies, and digitisation. These clusters were obtained by means of two related multivariate techniques: factor analysis and cluster analysis.

Cluster analysis is a technique that identifies groups of respondents with similar response patterns. Given the wide array of questions, the number of questions on which cluster analysis was performed (i.e. the cluster variables) was first reduced by means of factor analysis – a technique that identifies groups of correlated questions.

Factor analysis was applied through a total of 54 questions seen by all 4,435 respondents who were presented the complete questionnaire. In order to assign each survey participant to a cluster, it was necessary to determine factor scores for all respondents. Missing values were therefore imputed an Expectation Maximisation (EM) algorithm (SAS Institute Inc., 2004: 2536).[5] The resulting factor scores were then used as variables in the cluster analysis, following a two-stage approach of hierarchical and non-hierarchical techniques (Burns and Burns, 2008; Norušis, 2010; Punj and Stewart, 1983). First, hierarchical cluster analysis (Ward's Method) was performed in order to find an indication of the 'optimal' number of clusters in the data. These were then tested using non-hierarchical (K-means) cluster analysis with the centroids – the average score of a cluster on a cluster variable – of the hierarchical cluster analysis as initial cluster centres. Prior to cluster analysis, cases were randomised and disposed of outliers[6] because K-means cluster analysis is sensitive to case order and outliers (Norušis, 2010).

Initial factor analysis with all 54 Likert statements produced a 12-factor solution, which was then judged on validity and statistical qualities. Validity in this context relates to interpretability of the factor: Do all items in the factor make sense? Are item scores highly correlated with occupation? Et cetera. The statistical qualities of an item are its standard deviation, communality, factor loading and measure of sampling adequacy (MSA). Additionally, the Kaiser-Meyer-Olkin (KMO) Measure and the Bartlett's Test of Sphericity of each factor solution were taken into account (Hair et al., 1998).

After these various tests concerning validity and statistical quality, 14 of the 54 Likert statements were dropped as a result of a relative lack of variation between respondents, and an 8-factor solution resulted. These eight factors and the number of statements in each factor are listed in the first column of Table 4.[7]

Regression factor scores were subsequently used for clustering. As a rule of thumb clustering is stopped when the coefficients in Ward's Method for hierarchical cluster analysis increase steeply, as this indicates that two inconsistent groups are being merged and a heterogeneous group results. In our analysis, Ward's Method indicated that there are at least four homogeneous groups of respondents. This procedure was repeated using random selections of 50% of the respondents, in order to test the reliability of this outcome

(Norušis, 2010: 375). These split-sample analyses show primary inflection points between five and seven clusters.

Hierarchical cluster analysis thus suggests solutions of four to seven clusters. Next, non-hierarchical (*K*-means) cluster analysis was performed and respondent assignments in both approaches were compared. A small overlap indicates that hierarchical cluster analysis may be overly restrictive.[8] There is significant switching between both clustering techniques from four to six clusters. This stabilises in the 7-cluster-solution, which is also the most intuitive of all solutions and was therefore adopted.

Almost all differences between factor scores are significant at the 1% level, indicating that each cluster has a distinct opinion profile.[9] Demographic profiles, on the other hand, are less clear-cut as clustering was based on opinions and not on socio-economic variables. Nevertheless, various demographic characteristics differ significantly between clusters (see Section 4.3).

4   Results

The outcomes of the survey are presented in this section. First, the income position of artists and performers is discussed, as well as their perceptions about the effect of digitisation on their earnings. Next, a 2-dimensional 'opportunities-and-threats space' is constructed, in which several survey questions are combined. The effect of respondents' socio-economic characteristics and profession on their position in this space is discussed. Subsequently, cluster analysis is used to identify groups of artists and performers with similar attitudes towards digitisation, revealing heterogeneity within professions.

### 4.1   Income distribution and sources of income

In concordance with Kretschmer and Hardwick (2007) and Kretschmer et al. (2011), many creators and performers are found to lead 'portfolio lives': they supplement their income outside their creative profession. Over the entire sample, such earnings amounted to 17.4%. The most common income bracket for creators and performers is €16,000 to €32,000 in 2009 (Figure 1). This includes all sources of income, both within and outside the creative discipline.

In addition to the income distribution of the sample, the same is plotted for the entire Dutch working population in Figure 1. The two are very similar, unlike the results of earlier research on creative income distribution (Kretschmer and Hardwick, 2007; Kretschmer et al., 2011; Towse, 2001). This is probably a consequence of the aforementioned earnings outside respondents' creative discipline.

The distribution over sources of income is shown in Figure 2. Designers and illustrators/cartoonists on average earn around 90% of their income within their creative discipline. Authors, composers/lyricists, illustrators, translators and singer-songwriters rely most heavily on royalties from their operators and payments from collecting societies. Over the entire sample, these comprise less than 10% of the artists' income.

Past income development and expected future income development in relation to file sharing and digitisation are displayed in Figure 3 and Figure 4. While there is a striking correlation between respondents' past income development and their perception of the effect of file sharing on their income (Figure 3), a majority is optimistic about the future

(Figure 4). Note that the writing professions (translators, journalists, authors) are least optimistic.

Figure 1   Total gross annual income 2009 (N=3,377)*
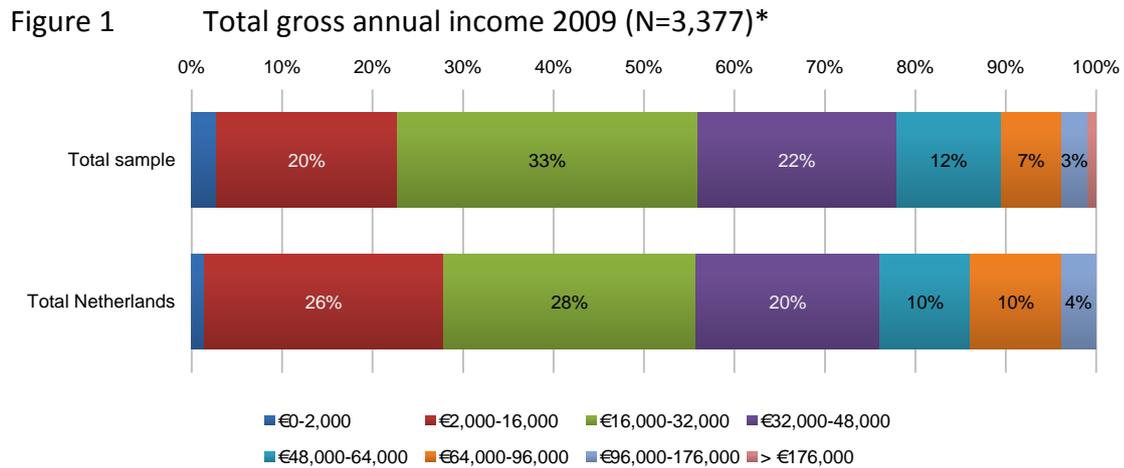
*Excluding respondents who did not know or did not want to disclose their gross annual income.

Figure 2   Distribution of income within creative discipline
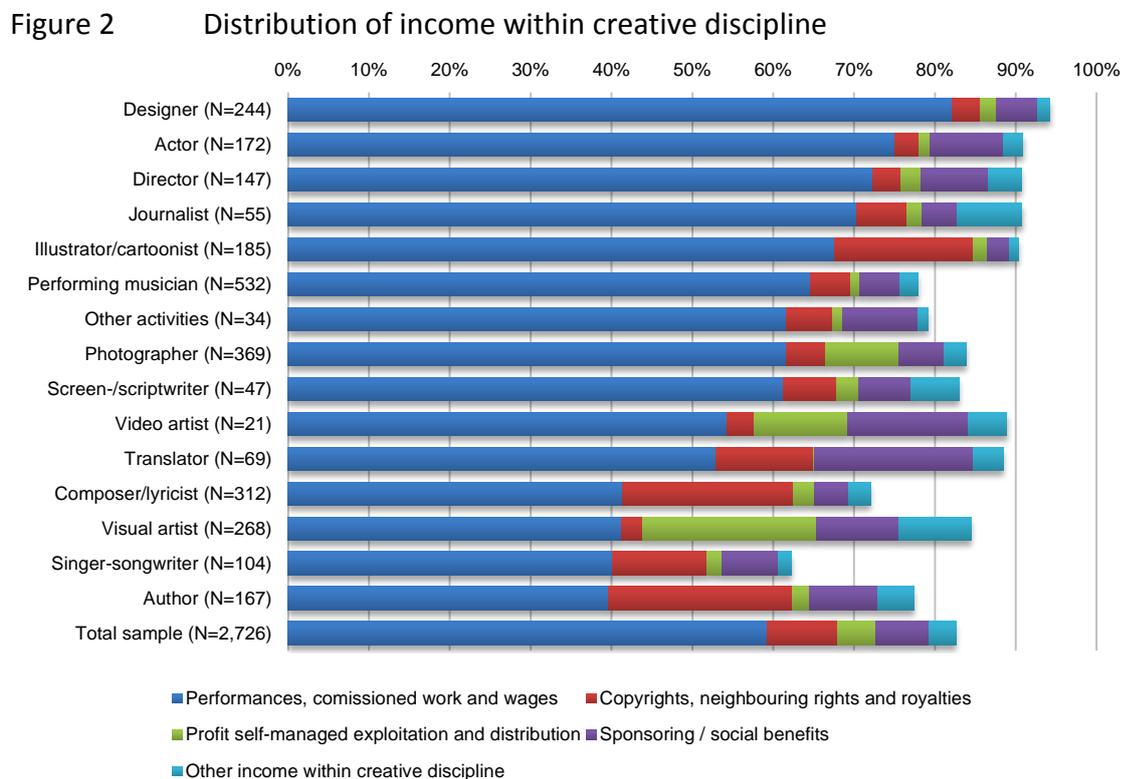
Figure 3   Past income development in relation to financial harm from file sharing

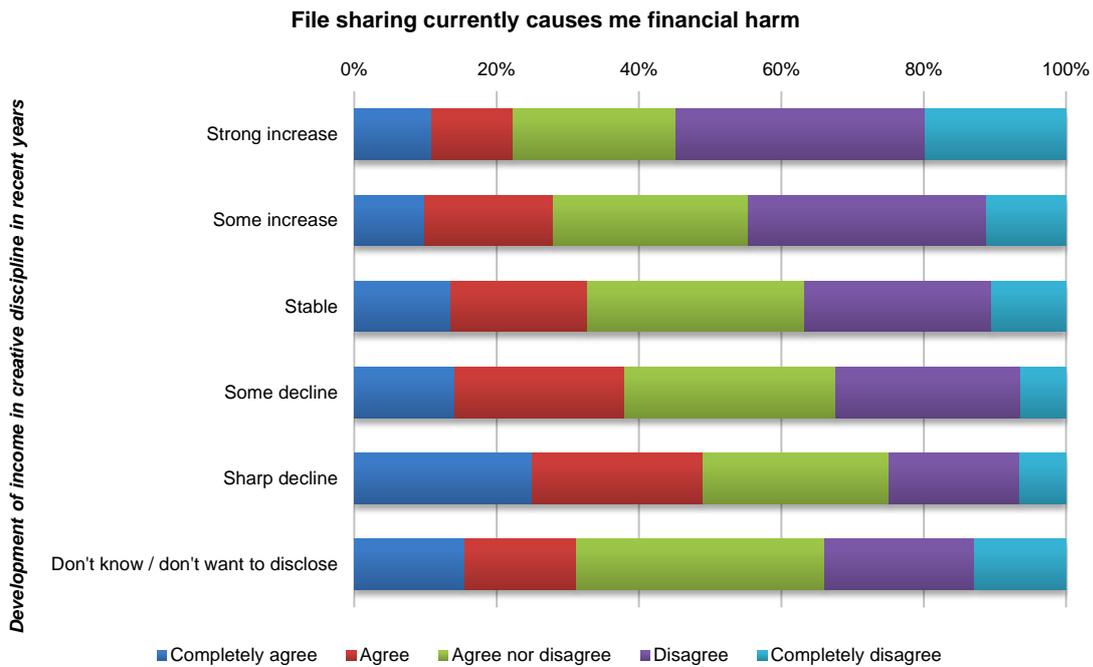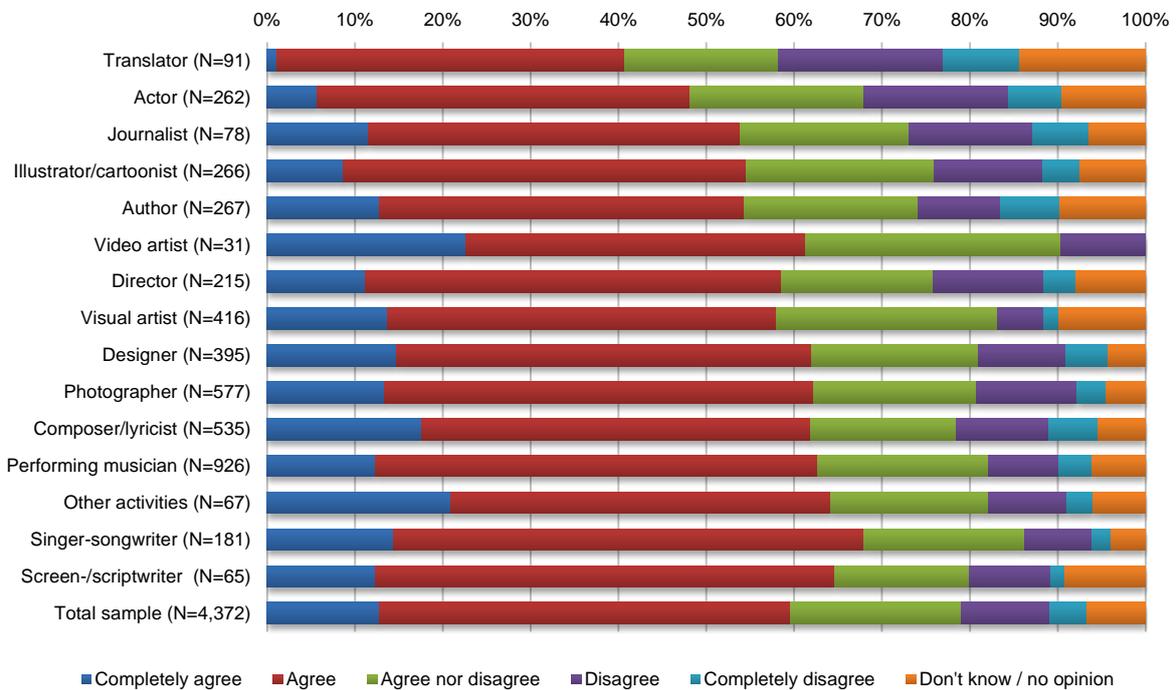**File sharing currently causes me financial harm**

Figure 4   'I expect more earning opportunities as a consequence of digitisation'

4.2   Opportunities and threats of digitisation

Past and future income development can be understood in relation to (perceived) threats and opportunities that digitisation entails, and *vice versa*. The survey contains various questions that relate to these perceived threats and opportunities of digitisation in general and file sharing & remixing in particular. For a comprehensive assessment of perceived threats and opportunities, relevant survey questions were combined into two indices: one

for opportunities and one for threats, since creators and performers may or may not experience both simultaneously.

Table 2Statements for the opportunities and threats indices

	Strongly Agree	Agree	Agree nor disagree	Disagree	Strongly disagree
Opportunities index					
Digital distribution and exploitation are an opportunity for me	22%*	54%	17%	5%	2%
As a consequence of digital distribution and exploitation:					
I *presently* have more earning opportunities	12%	32%	27%	19%	9%
I expect to have more earning opportunities *in the future*	14%	50%	21%	11%	4%
my producer/publisher has more earning opportunities	14%	46%	25%	10%	4%
my opportunities to reach an audience have increased	30%	55%	9%	4%	2%
File sharing increases the familiarity with my work	13%	49%	22%	11%	5%
File sharing increases my earning opportunities	4%	10%	30%	36%	21%
File sharing will increase my earning opportunities in the future	5%	18%	36%	26%	16%
Threats index					
Digital distribution and exploitation are threats to me	7%	24%	23%	32%	14%
Presently, file sharing harms me financially	15%	20%	29%	27%	10%
I expect that file sharing will harm me financially in the future	18%	37%	25%	14%	6%
Remixing of my work without my explicit permission is a threat to my income	21%	28%	24%	18%	8%

*All percentages recalculated to total 100% after excluding 'Don't know/no opinion'.

Figure 5   Opportunities and threats index per occupational group
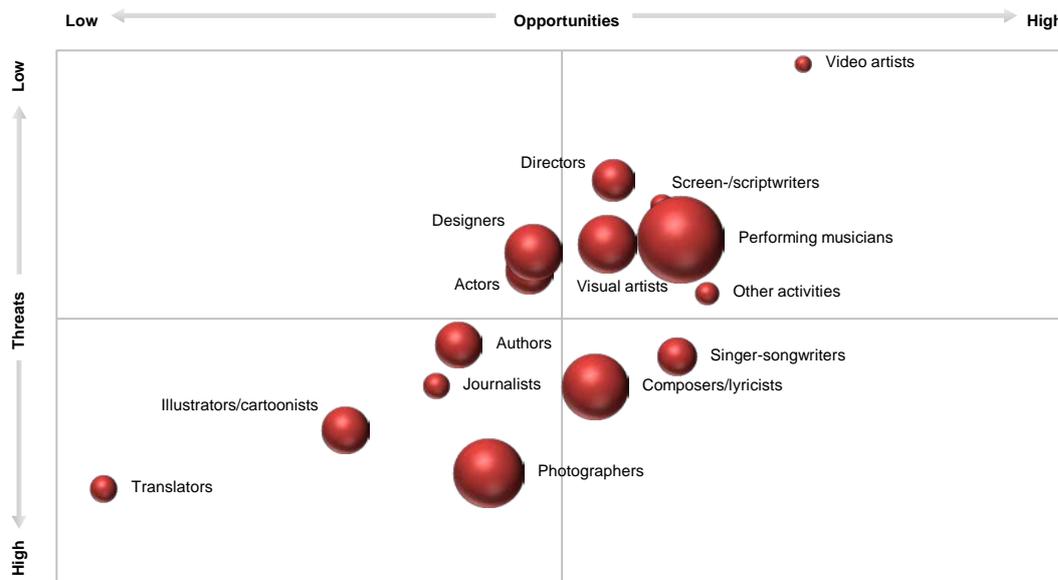
The 'opportunities index' is the unweighted conditional mean of eight statements, standardised to obtain deviations from the sample mean.[10] The 'threats index' is composed of the four statements. The statements in both indices are outlined in Table 2. In general, 73% of respondents see digital distribution and exploitation as an opportunity while only 28% see them as a threat. Respondents are also fairly positive about the effect of digital distribution and exploitation on earning opportunities and opportunities to reach an audience. On the threats index, file sharing and remixing are generally looked upon critically.

The average position of occupations on these combined indices is plotted in Figure 5, with sphere size indicating the share of each occupation in the total sample. This expresses the average stance within each occupation towards digital developments, without controlling for respondent characteristics. There is an obvious correlation between both indices, as creators who see more opportunities are likely to see fewer threats.

Translators turn out to be the most traditional of all groups, perceiving high threat and low opportunity. Video artists are their opposites. Taking into account their high exposure to digitisation (in particular unauthorised file sharing), performing musicians occupy a notable position in this chart: low on threat and high on opportunity. The other music-related professions, composers and singer-songwriters, perceive comparable opportunities, but their sense of threat is above average and therefore considerably higher than that of performing musicians. The position of photographers is also noteworthy: their perception of opportunities is equal to that of authors, actors and designers, but they feel much more threatened (almost as much as translators).

A perception of threats and opportunities of an occupational group is partially explained by the group's underlying demographics. For instance, a group that is averagely young, may be more optimistic than an older group. Also, an individual's earnings may influence their perception about threats and opportunities. To understand the socio-economic drivers of respondents' positions on the threats and opportunities indices, four Ordinary Least Squares (OLS) regressions were performed.

The regression models which explain the opportunity and threat indices by demographic variables are presented in Table 3:[11] for each index, the top model includes occupation as an exogenous variable (i.e. the explanatory power of demographics, corrected for occupation), and the bottom model does not.

The OLS models including occupation dummies show that age is an important 'driver' of anxiety about digital developments (older respondents see more threats) but not of perceived opportunities, and that female artists perceive more threats. Income turns out not to be a determinant of opportunity and threat perceptions but rather the share of income derived from royalties from collecting societies and the recent income development: artists who depend more on copyright and neighbouring rights for their income, see significantly fewer opportunities and more threats. The same holds for those who saw their creative income decline in recent years. People working more hours in their creative discipline sense more threats and fewer opportunities of digitisation. Finally, a higher education level correlates with artists feeling less threatened by digital developments.

The models without occupation dummies serve two purposes: (1) as a robustness check of the explanatory power of demographics (which shows that all correlations that are significant at 99% or more remain so) (2) to assess the stance of occupational groups vis-à-vis digitisation, corrected for its underlying demographics. To do the latter, the residuals of

the OLS model without occupation dummies (Figure 6) are confronted with the original, 'uncorrected' two-dimensional graph (Figure 5). An arrow connects the original position of each profession (the red spheres) with its position corrected for underlying demographics (the black diamonds). Notable shifts are those of journalists – the only group that switches quadrants (from threatened above average to threatened below average) – and those of visual artists, translators, video artists and the rest group 'other activities'. The opinions of these groups turn out to be highly 'coloured' by their demographic composition.

Table 3Regression models opportunities and threats index

	Dependent variable: Opportunities index			Dependent variable: Threats index		
N	1,634			1,620		
F	7.1			14.63		
Prob > F	0.000			0.000		
R^2	0.096			0.180		
Adj R^2	0.082			0.168		
	Coef.	*S.E.*	*P value*	*Coef.*	*S.E.*	*P value*
Author*	-0.387	0.125	**0.002**	0.458	0.119	**0.000**
Translator*	-0.980	0.185	**0.000**	0.664	0.176	**0.000**
Journalist*	-0.351	0.184	0.056	0.280	0.175	0.109
Screen-/scriptwriter*	0.040	0.182	0.826	0.133	0.175	0.449
Actor*	-0.330	0.128	*0.010*	0.288	0.122	*0.019*
Director*	-0.095	0.135	0.478	0.086	0.128	0.500
Singer-songwriter*	0.016	0.156	0.917	0.541	0.148	**0.000**
Performing musician*	-0.084	0.104	0.419	0.285	0.099	**0.004**
Composer/lyricist*	-0.194	0.121	0.111	0.588	0.116	**0.000**
Photographer*	-0.357	0.106	**0.001**	0.698	0.101	**0.000**
Video artist*	0.045	0.283	0.874	-0.072	0.269	0.790
Illustrator/cartoonist*	-0.563	0.123	**0.000**	0.610	0.118	**0.000**
Designer*	-0.319	0.116	**0.006**	0.322	0.110	**0.004**
Other activities*	-0.132	0.237	0.578	-0.004	0.231	0.987
Current working hours per week	-0.081	0.030	**0.007**	0.082	0.029	**0.005**
Preferred working hours per week	0.011	0.042	0.795	0.086	0.040	*0.030*
Age	-0.005	0.003	0.106	0.019	0.003	**0.000**
Gender* (Male=0; Female=1)	-0.102	0.058	0.079	0.192	0.055	**0.001**
Education	0.015	0.023	0.525	-0.070	0.022	**0.002**
Experience in profession	0.011	0.024	0.636	-0.018	0.023	0.431
Financial role in household	-0.013	0.036	0.722	0.004	0.034	0.906
Gross year income 2009	-0.013	0.020	0.523	0.010	0.019	0.601
% Income from collecting societies	-0.009	0.002	**0.000**	0.010	0.002	**0.000**
Recent income development (-/+)	0.129	0.022	**0.000**	-0.124	0.021	**0.000**
[Constant]	0.252	0.285	0.377	-1.191	0.273	**0.000**
N	1,634			1,620		
F	9.95			24.24		
Prob > F	0.000			0.000		
R^2	0.058			0.131		
Adj R^2	0.052			0.126		
	Coef.	S.E.	P value	Coef.	S.E.	P value
Current working hours per week	-0.112	0.029	**0.000**	0.086	0.028	**0.002**
Preferred working hours per week	0.034	0.042	0.411	0.063	0.040	0.115
Age	-0.008	0.003	**0.005**	0.019	0.003	**0.000**
Gender* (Male=0; Female=1)	-0.151	0.057	**0.008**	0.166	0.054	**0.002**
Education	0.002	0.023	0.921	-0.082	0.022	**0.000**
Experience in profession	0.042	0.023	0.065	-0.047	0.022	*0.031*
Financial role in household	-0.022	0.036	0.551	0.006	0.035	0.874
Gross year income 2009	-0.021	0.020	0.294	0.023	0.019	0.225
% Income from collecting societies	-0.010	0.002	**0.000**	0.014	0.002	**0.000**
Recent income development (-/+)	0.128	0.022	**0.000**	-0.134	0.021	**0.000**
[Constant]	0.118	0.250	0.637	-0.543	0.241	*0.024*

* Dummy variables (excluded occupational group dummy: Visual artists)

Figure 6   Opportunities and threats stance is partially explained by demographics
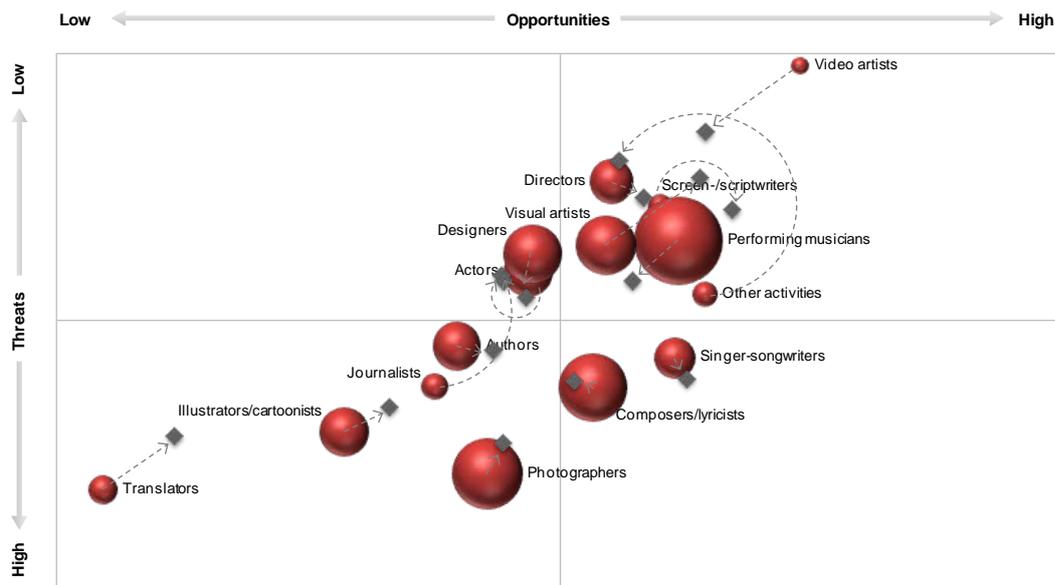
4.3   Patterns and diversity: cluster analysis

In Figure 5 and Figure 6, the underlying heterogeneity of opinions within each occupation is disregarded. Also, the relationship between the various themes in the questionnaire are not explored in the previous section, other than the opportunities-and-threats indices. Although occupation often has a significant impact on perceived opportunities and threats (see the dummy coefficients in Table 3), there are other determinants. Cluster analysis was used to create groups that are relatively homogeneous in their answers yet differ significantly from the other groups.

As set out in Section 3.5, it is not possible to determine the number of clusters solely on statistical grounds: hierarchical cluster analysis suggests cluster solutions between four and seven clusters. The optimal number has been reached when an additional cluster would not be sufficiently different from the other clusters. Based on an analysis of the number of respondents changing clusters when adding one, as well as the interpretability of the factor scores within clusters, a 7-cluster solution is adopted and presented in Table 4.

The names for the clusters have been chosen on the basis of the opinion patterns within each cluster, with occasional reference to age patterns that were found in some clusters. In the top half of Table 4, the relative position of each cluster on the factors is summarised, while the positions on demographic and income variables are summarised in the bottom half. The differences in opinions turn out to be much more outstanding than the demographic differences. This should not be surprising, as no demographic variables were used in the clustering. Nonetheless, all demographic differences referred to in the description of clusters below are significant as defined in Table 4. The clusters on the indices for opportunities and threats are plotted in Figure 7 as was done for occupational groups in Figure 5 and Figure 6. Which groups of creators and performers are overrepresented or underrepresented in each cluster is shown in Table 5.

Table 4 Clusters and their position on factors and demographic variables

Cluster	Generation 2.0	Generation Analogue	Non-Affected	Claimers	Concerned Young People	Digital Newcomers	Self-Conscious Creators
% of sample	18%	12%	18%	9%	11%	17%	15%
N (total = 4,435)	788	533	797	410	488	758	661
Factor description (items in factor)	**Position on factors**						
Satisfaction with collecting society (8)	--	+	-	+++	--	+	+
Opportunities of digital distribution (7)	++	---	--	++	0	+	+
Threats of file sharing (5)	--	++	--	++	++	+	-
Strength of bargaining position (2)	+	-	+	-	--	-	++
Use of social media (4)	++	--	-	+	+	--	+
Appreciation of remixing and sampling (4)	+++	--	+	--	-	+	-
Opportunities of file sharing (3)	++	---	-	-	-	+	-
Need for empowerment (7)	0	+	--	++	+	-	+
	Demographic and income position						
Current working hours	-	+	0	+	0	-	+
Desired working hours	0	0	-	0	+	-	+
Age	--	+	+	+	-	+	0
Education	+	0	0	-	0	0	0
Working experience	-	+	0	+	-	+	-
Contribution to household income	0	0	0	+	0	0	0
Current income	-	0	0	0	0	0	0
% Income from royalties	-	+	-	+	0	0	-
Recent income development	+	-	0	-	-	-	+

Key to symbols: '+' or '-' mean cluster scores significantly different from sample mean (p<0.05) while: +++/--- means |Z|>= 1; ++/-- means 0,5<=|Z|<1; and +/- means 0 <|Z|<0.5.

Table 5Occupational profile clusters

Cluster	Overrepresented professions*	Underrepresented professions*
Generation 2.0	Singer-songwriters Performing musicians Composers	**Translators** **Illustrators/cartoonists** Authors Actors Photographers
Generation Analogue	**Translators** **Illustrators/cartoonists** Authors Journalists Photographers	Screen-/scriptwriters Directors Singer-songwriters Performing musicians Visual artists
Non-Affected	Directors Visual artists Designers	Authors Singer-songwriters Composers Illustrators/cartoonists
Claimers	**Photographers** **Illustrators/cartoonists** Authors	**Screen-/scriptwriters** Actors Directors Performing musicians Designers
Concerned Young People	**Journalists** Singer-songwriters Composers	**Translators** **Visual artists** Screen-/scriptwriters Illustrators/cartoonists Designers
Digital Newcomers	**Authors** Screen-/scriptwriters Actors Directors	**Photographers** Journalists Designers
Self-Conscious Creators	**Illustrators/cartoonists** **Designers** Photographers Visual artists	**Translators** **Actors** Directors Performing musicians Composers

*Overrepresentation and underrepresentation of a profession in a cluster are defined as a representation of at least 25% more and 25% less respectively than the sample average. Bold face professions are overrepresented or underrepresented by at least 50%.

Figure 7   Opportunities and threats index per cluster
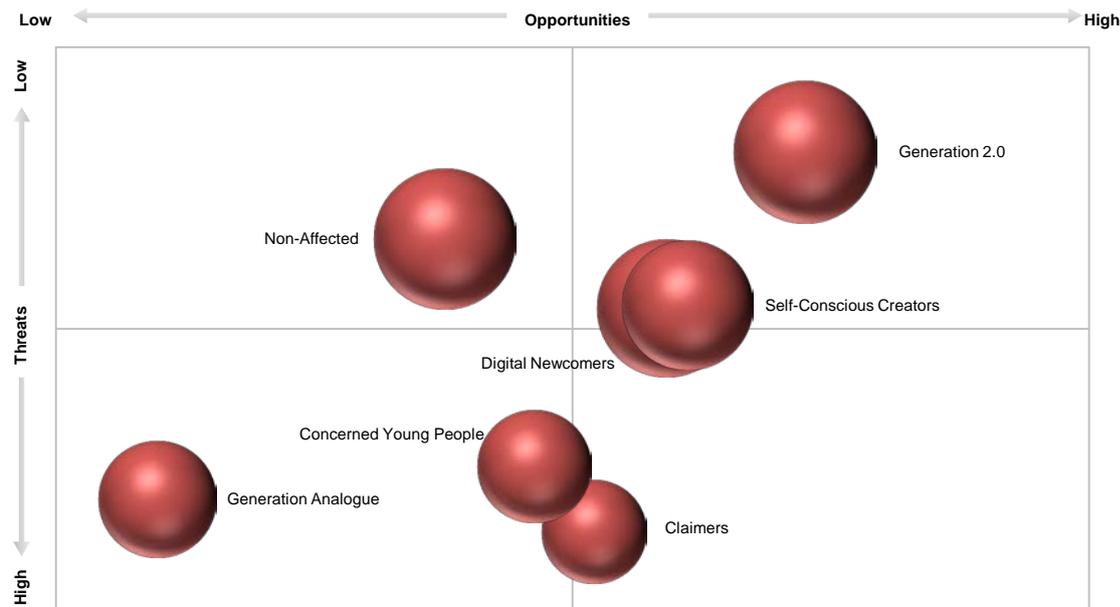
Generation 2.0

Generation 2.0 sees many opportunities in digital developments, file sharing and remixing and hardly feels threatened by these developments. Its members use social media intensively. They are much more critical than other groups about collecting societies; a relatively large proportion of this group (20%) is not associated with a collecting society. Generation 2.0 members are predominantly male, relatively young and work fewer hours as creators or performers than the average respondent. They earn less and derive a relatively large share of their income from activities outside their creative profession. Nevertheless, their income has increased over the past few years. Generation 2.0 members characteristically rely on performing fees for their income rather than on royalties from collecting societies.

The music industry – singer-songwriters, composers and musicians – are overrepresented in this group. This is remarkable, since the music industry was profoundly changed by digitisation, dramatically affecting those working in it.

Generation Analogue

Generation Analogue is the antipode of Generation 2.0 (see also Figure 7). Its members see no opportunities but many threats in digitisation and file sharing and do not approve of remixing. They are more positive about collecting societies than other groups and favour measures to improve their bargaining position. Of all clusters, they make the least use of social media.

Generation Analogue members are older than the average respondent and work many hours. They derive a large share of their income from royalties from collecting societies and have experienced a negative income development over the past few years.

Translators, cartoonists/illustrators and to a lesser extent authors, journalists and photographers are overrepresented in this group, while the music industry, directors, writers and visual artists are underrepresented.

Non-Affected

A third cluster that stands out in Figure 7 is called the Non-Affected: they score relatively low on both the opportunities and the threats index. Digital developments have little impact on these creators and performers. They feel no need for empowerment and are critical about collecting societies. They do not mind remixing of their work. Visual artists, designers and directors[12] make up a relatively large part of this group, whereas authors, singer-songwriters, composers and illustrators are underrepresented.

In demographic and economic terms, this group is quite average: their income, income development and working hours do not differ from the sample mean. Their age is older than average, however, and unlike most respondents, they would like to work fewer hours. They derive a relatively small share of their income from rights and royalties.

Claimers

Claimers in turn are in many ways the opposites of the Non-Affected. This relatively small but distinct group sees many opportunities in digital developments but sees an equally large threat in unauthorised file sharing. Claimers see no opportunities in file sharing and disapprove of remixing. They endorse stricter measures against file sharing and measures to improve their bargaining position vis-à-vis publishers and clients. Claimers are very satisfied with their collecting societies.

They are often responsible for a substantial part of the household income, but their earnings have decreased over the past few years. On average they are older than all other groups (80% of this group is older than 45 years), work more hours and are less highly educated.

Within this group, illustrators, photographers and authors are overrepresented. More than the average respondent, they depend on copyright for their income, but their work can be shared relatively easily over the Internet, with or without their consent. This explains why the Internet is both an opportunity and a threat to them. Musicians are underrepresented amongst the Claimers. Musicians, who have already experienced the consequences of digitisation and had to find new ways to deal with it, are underrepresented amongst the Claimers.

Concerned Young People

On the opportunities and threats indices, the Concerned Young People resemble the Claimers. They see serious threats in file sharing, do not appreciate remixing of their work and are concerned about their bargaining position. In other respects, however, they are more like Generation 2.0 members: they are relatively young, make active use of social media and have professional backgrounds that are similar to those of Generation 2.0 members. Also, they are relatively unsatisfied with collecting societies. Their income has decreased in recent years, and they would like to work more. They have less education than Generation 2.0 members.

Digital Newcomers

The last two groups, Digital Newcomers and Self-Conscious Creators, score similarly on the opportunities and threats indices. On other criteria, they are very different. Digital Newcomers see opportunities in digitisation and file sharing but also experience threats and make very little use of social media. They are fairly satisfied with the collecting societies and perceive their bargaining position as rather weak. On the other hand, they appreciate remixing more than other groups do and feel no need for empowerment.

The overrepresented professions in this group (screenwriters, actors, directors and authors) predominantly work in sectors that have yet to experience the opportunities and consequences of digitisation.

They earn their creative income relatively often with (temporary) jobs or contracts. Digital Newcomers are relatively old, work fewer hours than average and would prefer to work even less. Their income has declined over the past few years.

Self-Conscious Creators

Self-Conscious Creators perceive digitisation as an opportunity but also feel threatened by file sharing and have a negative view of remixing. They work many hours and would prefer to work even more. Their income development is comparatively positive. Self-Conscious Creators earn their income mainly by commercialising their own work instead of from copyright or royalties. This is a typical feature of the various professions that are overrepresented in this group: photographers, visual artists, cartoonists/illustrators, and designers. Self-Conscious Creators frequently use new media and are optimistic about their own bargaining position. Nevertheless, they support measures to improve this position further and are fairly satisfied with their collecting society.

5   Conclusion

Creators and performers hold on to more traditional opinions than often suggested. Unauthorised file sharing is primarily seen as a threat, and tougher enforcement is supported by a majority of them. Remixing is also perceived negatively. The use of DRM is endorsed by a significant share in order to keep control over copyrighted work. Finally, despite the criticism they receive in the media, collecting societies are generally approved of.

Beneath this general, fairly traditional approach towards copyright, our analysis reveals a relatively diverse and multifaceted picture. Some creators and performers see the opportunities created by digital technologies to gain more control over the distribution and exploitation of their works. They seek a more independent position from producers and publishers, and digitisation provides opportunities to achieve this.

Age is clearly an important driver of this underlying diversity, but simply pointing towards a generation gap is an oversimplification. Perceived opportunities of digitisation are surprisingly stable over the different age brackets. On the other hand, the perception of threats tends to increase with age. On the financial axis, current income was not found to determine the threats and opportunities that performers and creators perceive. Instead, a negative income development over the past few years and a large share of income from collecting societies induces a high score on the threats index and a low score on the opportunities index.

Another finding is the impact of profession. Translators are an interesting example. They combine perceived high threats and low opportunities as a result of digitisation. For them, more self-control over their work as a result of digital distribution is not an option, because they do not produce works that can be exploited independently from traditional parties such as publishers. At the other extreme are video-artists whose work is predominantly financed through public subsidies. They do not expect digital technology to harm them financially. On the contrary, they see the Internet as an inspirational environment to experiment.

Creators and performers composing, recording and performing music all see many opportunities. Yet, composers and lyricists see more threats than the average respondent does, while performing musicians score relatively low on threats. The music industry and those working in it have weathered the digital storm and are now coming back in shape, facing the future in a modest optimistic fashion. Meanwhile, photographers, journalists and authors are still on the gloomy side seeing more threats than the average creator or performer does and scoring modestly on opportunities. Their home base, the print media, is still in flux. This warrants the conclusion that the digital transition phase of a sector influences the perspective of creators and performers working there. For those parts of the creative industries that still have to experience the full impact of digitisation, the fear factor leads to fairly pessimistic views, boiling down to a fear to lose income, combined with a traditional attitude towards copyright and neighbouring rights and a rather strict view on rights protection implying strong DRM measures to be taken.

The perspectives on copyright and digitisation of creators and performers have been summarised in seven clusters. Plotted against two axes of perceived threats and opportunities of digitisation, the dominant position of these clusters is on the diagonal from high threats and low opportunities to the contrary (see Figure 7). Generation Analogue takes the gloomiest position. Members of this on average older group work relatively many hours, make little use of social media for their work and derive a large part of their income from copyright royalties, which explains their adherence to collecting societies and their firm stance on support of the present copyright system. At the other end of the spectrum, we find Generation 2.0, a relatively young group of people who (as of yet) work fewer hours in their creative profession than Generation Analogue members and consequently earn a larger share of their income outside their creative discipline. They see many opportunities in digitisation and not many threats, make intensive use of social media and are critical about collecting societies. Interesting outliers from the diagonal in Figure 7 are the Concerned Young People and Claimers. They combine a relatively high score on threats and an average score on opportunities. They have expectations concerning the digital possibilities but are hesitant because they see their position threatened. Another outlier are the Non-Affected. They do not see too many possibilities but also hardly experience any threats. Digital developments hardly seem to touch them.

These findings show that the position of creators and performers is the result of a specific interplay of variables, combining creative professions, age, income development and dependence on income from copyright royalties. They result in different positions vis-à-vis the future of copyright in the digital domain. Apart from the fact that they point to relevant coherent and identifiable groups, their positions connote a specific ideological stance towards copyright in the digital age.

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Author biography

Joost Poort is senior economic researcher at the Institute for Information Law, University of Amsterdam. His main research interests are the economics of copyright, media, culture, heritage and telecommunications. His research approach is mostly empirical.

Ilan Akker is a researcher and consultant in Health Care and Social Policy at Policy Productions, Amsterdam. His current and past research focuses on government's influence on market operations and policy evaluations. During his earlier time with SEO Economic Research he developed his interest in digitization and its impact on the creative industry and the future of copyright.

Paul Rutten is reader in Creative Business at the Rotterdam University of Applied Sciences. His main interests are creative industries, innovation and the network society.

Jarst Weda is researcher at the Competition and Regulation section of SEO Economic Research. His main fields of expertise are the functioning of markets (market failures and government failures), quantitative models, cost-benefit analyses, surveys, statistical methods and techniques, and competition problems.

Notes

[1] Two professional associations chose to propagate the survey by means of a press release or newsletter. Their members had to apply for a username and password themselves. This option was also offered to non-affiliated creators and performers. In order to reach them, announcements were posted on blogs, including a hyperlink to a website where they could apply for participation.

[2] Including the self-applicants discussed in note 1.

[3] This is likely to be an overestimation, since the number of e-mail bounces is unknown for four sending organizations. Moreover, some respondents may have received an additional invitation *after* they responded.

[4] Only 15 occupational groups are listed in Table 1, as comedians (N=15), choreographers (N=5), dancers (N=5) and game developers (N=4) have been added to the group of 'other disciplines'.

[5] Since the factor analysis was performed on Likert data, which is prone to contain a relatively large amount of error variance, Common Factor Analysis (CFA) was preferred over Principal Components Analysis (PCA), as the former does not distribute error variance among factors (Hair et al., 1998). We opted for Principal Axis Factoring (PAF), since ordinal data rarely have a normal distribution, and oblique rotation, as the resulting factors are expected to be correlated (Fabrigar et al., 1999).

[6] Outliers are cluster variable scores of 1.5 interquartile range (IQR) below the first quartile or 1.5 IQR above the third quartile.

[7] The factors' Cronbach's Alpha values, a metric expressing internal consistency, are 0.6 or higher and therefore acceptable for explorative measurement scales (Hair et al., 1998).

[8] In non-hierarchical cluster analysis, respondents can switch from the initial cluster to which they were attributed using hierarchical cluster analysis, to the cluster they actually have most in common with.

[9] Differences were tested using Tukey's HSD, a One-Way ANOVA post hoc test.

[10] Missing values and the answer category 'do not know/no opinion' were excluded for the indices.

[11] A higher score on the opportunities index equates to a respondent perceiving more opportunities; a higher score on the threats index corresponds to a respondent perceiving more threats.

[12] Stage directors (as opposed to movie directors) comprise over 80% of the group of directors, which explains this group is overrepresented amongst the Non-Affected.