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Statistical Modelling of Mental Wellbeing in the Film and TV Industry

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Executive Summary

This report presents a model of the mental health of film and television workers developed from the results of the Film and TV Charity's Looking Glass 2021 survey. The outcome variable was the respondent score on the Short Warwick-Edinburgh Mental Wellbeing Scale (SWEMBS) which was one of the variables measured by the survey.

The model made use of factor analysis to combine the answers to various questions in the survey. Thirteen factors emerged from the factor analysis, combining the answers to forty-two questions. Ten of the factors were found to have statistically significant relationships with the mental health of film and TV workers.

The model included answers to other questions in the survey as individual variables. In the final model, thirteen individual question variables were found to have statistically significant relationships with the mental health of film and TV workers.

The top six variables associated with FTV worker mental health were:

1. The UCLA loneliness score (F) (negative)
2. Good Career Development (F) (positive)
3. Good workplace Culture and Communication (F) (positive)
4. Struggling Financially (F) (negative)
5. Impact of Covid (F) (positive)
6. Good work-life Balance (F) (positive)

IQV = Individual Question Variable F = Factor

Other significant variables were:

- Working in Animation and VFX, Film Distribution or Sales & Marketing, compared with working in Content Creation (IQV) (negative)
- Being aged 20-24, 45-49 or between the ages of 55 and 69, compared with being aged 30-34 (IQV) (positive)
- Being an employee rather than freelancer (IQV) (negative)
- Positive industry attitudes to mental wellbeing (F) (positive)
- Positive colleague attitudes to mental wellbeing (F) (positive)
- Worrying about finances (F) (negative)
- Not working last week (IQV) (negative)
- Working more than 50 hours last week (IQV) (negative)
- Being Black, compared with being White (IQV) (positive)
- Working less than 12 weeks in the last year (IQV) (negative)
- Attitudes to consuming alcohol in work-related contexts (F) (positive)

The final model had an R^2 of 0.44, indicating that the items measured by the Looking Glass survey accounted for 44% of the variation in FTV worker mental health. There are likely to be many factors outside of working life, for example, personal relationships and home lives which also impact on mental wellbeing, which one would expect to explain more of the residual variation.

These results indicate that there are opportunities to make changes that have the potential to improve the mental wellbeing of those working in the film and TV industry.

Introduction

The Film TV Charity provides a community, support and promotes diversity and wellbeing for everyone working behind the scenes in the film, TV and cinema industry. To explore issues around mental wellbeing and the impacts of aspects of work in the film and TV (FTV) industry the charity runs a survey called Looking Glass, the most recent iteration of which took place in 2021. This has been analysed descriptively at an overall level; the report is available on their website[1].

As the data collected in the survey is a rich resource, Select were asked by the Film TV Charity to provide a more in-depth analysis to explore the factors that are associated with mental wellbeing and to explore how much of the overall mental wellbeing of FTV workers is explained by these associated factors and how much remains unexplained.

Data

The Film TV Charity provided a datafile of responses for 2097 anonymised survey participants in an Excel file.

The survey contained 7 questions from the Short Warwick-Edinburgh Mental Wellbeing Scale (SWEMWBS)[2], an established scale which measures mental wellbeing. The responses to these questions are coded (from 1 to 5) and combined and rescaled to give a mental wellbeing score ranging from 7 to 35 where a higher score indicates more positive wellbeing (also provided in the dataset). This was the outcome used in our analysis since it is a mental wellbeing score that is widely used (due to its reliability and validity) and is comparable across sectors and industries. The developers of the Warwick-Edinburgh Mental Wellbeing Scale say that the scales "were developed to enable the measuring of mental wellbeing in the general population and the evaluation of projects, programmes and policies which aim to improve mental wellbeing. The items are all worded positively and cover both feeling and functioning aspects of mental wellbeing, thereby making the concept more accessible. The scale has been widely used nationally and internationally for monitoring, evaluating projects and programmes and investigating the determinants of mental wellbeing."

Other research shows that loneliness is associated with mental wellbeing, and so the survey also contained 3 questions (coded 1 to 3) and the total score (which ranged from 3 to 9) from another established scale, the UCLA loneliness scale, which measures social isolation[3].

Other questions in the survey asked respondents about, for example, workplace culture, attitudes towards mental health, anxieties about finances, their experiences of bullying and harassment, their working hours, along with demographic variables and details of where in the industry respondents work.

[1] https://filmtvcharity.org.uk/wp-content/uploads/2022/02/LookingGlassReport_2021_Final.pdf
[2] https://warwick.ac.uk/fac/sci/med/research/platform/wemwbs/
[3] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2394670/

Derived Variables

The client had hypotheses about what was associated with mental wellbeing which were derived from their knowledge of the FTV industry and from other published research into mental health and wellbeing. They provided a list of potential explanatory variables for us to explore.

A number of variables could be obtained directly from individual questions in the survey relating to a respondent's experiences in the industry, their roles and their demographics. These were:

- In the last year, have you experienced bullying behaviour at work?
- In the last year, have you experienced sexual harassment at work?
- In the last year, have you experienced racial harassment or discrimination at work?
- In the last year, have you experienced other forms of harassment or discrimination at work?
- UCLA loneliness score
- How many hours did you work last week?
- How many weeks in the past year have you worked?
- Ethnicity
- Age
- Gender
- Sexual orientation
- Do you have a disability or long-term health condition?
- Do you work in
    - film,
    - TV
    - or cinema?
- In which department do you work?
- Are you
    - an employee,
    - self-employed/freelance
    - combining employment with freelance?
- Region

For other hypotheses on the list that are more nebulous, i.e. attitudes, opinions and culture, we used factor analysis. Factor analysis is a statistical technique which uses correlations to group together questions that are similar into factors and separate questions that are dissimilar into other factors. The factors measure underlying traits such as attitudes or options that are difficult to capture via individual survey questions. These factors are then used in subsequent analyses instead of individual questions.

There are a number of advantages of using factor analysis, including:

- Combining individual questions creates more robust measures of the underlying trait.
- Combining individual questions into a smaller number of factors reduces the number of variables in subsequent analyses (it is a useful data reduction technique).
- Using variables that are correlated in a model can be problematic for interpretation, as one variable may be acting as a proxy for one or more other variables, and so the association between a variable and an outcome can appear reduced, or appear not to be related or the

association may appear reversed (a phenomenon known as multi-collinearity). Factor analysis takes advantage of these correlations and helps reduce the problem of multi-collinearity in modelling.

Factor Analysis

Many of the questions in the survey that we used in the factor analysis had response options on a 5-point Likert scale. The responses to these questions were coded into numeric scores, for example,

Example of coding	
'Strongly disagree' = 1	'Very negative impact' = 1
'Somewhat disagree' = 2	'Somewhat negative impact' = 2
'Neither agree nor disagree' = 3	'No impact' = 3
'Somewhat agree' = 4	'Somewhat positive impact' = 4
'Strong agree' = 5	'Very positive impact' = 5

Table 1: Coding of Likert scale questions

Some questions were on a 3-point Likert scale and a small number were binary (yes/no).

As the data for all these questions were ordered categorical (not continuous), we calculated polychoric[4] correlations which approximate the more usual Pearson correlations that are appropriate for continuous data. Polychoric literally means 'divided into many compartments'.

The theory underpinning factor analysis is that there are intrinsic traits or constructs that are not observed directly, (such as anxiety, attitudes, the culture in which you work) but which influence people's responses to questions that are related to the underlying trait. In the example in Figure 1, the arrows from the factor on the right indicate that the factor influences the responses to individual survey questions. For example, someone with higher levels of a factor which describes anxiety will tend to answer 'agree'/'strongly agree' or 'frequently'/'all the time' to questions about how often they worry, whether they have difficulty sleeping, whereas someone with lower levels of anxiety will tend to respond 'disagree'/'strongly disagree' or 'never'/'rarely'. The small arrows on the left of the questions reflect the fact that, since the real-world responses to attitudinal survey questions are inherently imperfect, there is a small degree of error in the responses.

[4] https://select-statistics.co.uk/glossary/polychoric-correlation/

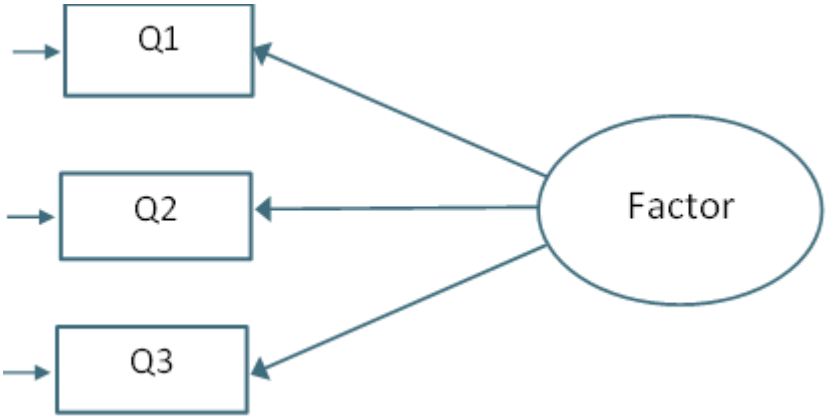

Figure 1: Example diagram for a one factor model

In factor analysis the analyst makes a number of decisions based on or guided by the data. We identified the questions that addressed each of the hypotheses and ran factor analysis on each group to identify the questions that are strongly correlated with each of the underlying factors. For some hypotheses we tried several different groupings to identify the optimal solution. The analysis outputs a set of factor loadings for each question in the group. Factor loadings indicate the strength of association (the correlations) between the individual questions and the underlying trait or construct. Strong correlations are indicated by values close to +1 or to -1 (positively and negatively correlated, respectively), weaker correlations are values closer to zero. A positive factor loading indicates that respondents who agree with a statement tend to have a higher score on the factor (a higher level of that factor), and respondents who disagree have a lower factor score. Whereas a negative factor loading indicates that respondents who agree with a statement tend to have a lower score on that factor and respondents who disagree tend to have a higher factor score. In each case a solution was chosen where the questions had a high factor loading on no more than 1 factor, where there was a good degree of internal consistency (see the Cronbach's Alpha section below) and where the factors were interpretable (this analysis was undertaken in consultation with the client).

Once we had derived the factors, we used these along with the survey responses to calculate factor scores for each respondent. A simplistic way to conceptualise factor scores is as a weighted sum of the coded responses, the weights being the factor loadings.

Cronbach's Alpha

The reliability of the calculated factor score was assessed using Cronbach's alpha. Cronbach's alpha is a measure of internal consistency and measures the extent to which each question measures the same underlying construct or domain as the other questions; how well each question is correlated with the other questions. Cronbach's alpha ranges from 0 to 1 and a common rule of thumb for interpretation is given in Table 2 below. Note that Cronbach's alpha also depends on the number of questions included in a scale, so scales formed of fewer questions have lower alpha values.

Cronbach's alpha	Internal Consistency Reliability
$\alpha \geq 0.9$	Excellent
$0.8 \leq \alpha < 0.9$	Good
$0.7 \leq \alpha < 0.8$	Acceptable
$0.6 \leq \alpha < 0.7$	Questionable
$0.5 \leq \alpha < 0.6$	Poor
$\alpha < 0.5$	Unacceptable

Table 2: Guide to interpretation of Cronbach's alpha

Results of Factor Analysis

Impact of Covid

Two questions ask about the impact that covid had on working practices and mental wellbeing. Each had 3 response options; a positive impact/effect, haven't impacted/affected positively or negatively, and a negative impact/effect. These two questions loaded together onto a factor measuring the impact of covid. Table 3 gives the factor loadings and Cronbach's alpha. High factor loadings are indicated by the shaded cells in the tables.

Question	Factor loadings: Impact of covid
Q11. What impact have changes to working practices made by the industry's response to the Covid pandemic had on your ability to do your job?	0.779
Q12. What impact has working in the industry under Covid safety protocols had on your mental health?	0.779
Cronbach's alpha =	0.76

Table 3: Factor loadings for impact of covid

Financial Situation

Ten questions in the survey asked about respondents' financial wellbeing. One question (Q17) had 5 response options ranging from 'Strongly disagree' through to 'Strongly agree', the options for the other question (Q18) were 'Yes', 'No'. These questions formed two factors: one which measured struggling with finances and one which measured anxiety associated with finances.

The factor loadings and the Cronbach's alphas are given in Table 4.

Question	Factor loadings: Financial worries	Factor loadings: Struggling financially
Q17.1. Late payments for completed work are making it harder for me to manage my money	0.202	0.526
Q17.2. Uncertainty about future income often makes me worried	0.364	0.657
Q17.3. I sometimes have to take work outside the industry to make ends meet	0.321	0.560
Q17.4. I feel I should always be available to take on extra work	0.178	0.614
Q18.1. Difficulties communicating with colleagues due to stress about money	0.715	0.384
Q18.2. Felt tired at work after losing sleep over money worries	0.802	0.365
Q18.3. Struggled to concentrate at work because I was worrying about money	0.902	0.247
Q18.4. Regularly spent time dealing with personal financial issues at work	0.613	0.251
Q18.5. Felt under increased pressure at work because I needed the money	0.467	0.599
Q18.6. Taken on a job I wouldn't usually consider because I needed the money	0.245	0.698
Cronbach's alpha =	0.90	0.83

Table 4: Factor loadings for financial factors

Action Related to Bullying and Harassment

Two questions asked about the reporting of bullying and harassment in the workplace. The response options ranged from 'Strongly disagree' through to 'Strongly agree'. These two questions loaded together into a single factor which measures the culture around the reporting of bullying and harassment.

Factor loadings and Cronbach's alpha are given in Table 5.

Question	Factor loadings: Reporting bullying and harassment
Q38.1. There is a clear policy and reporting process for bullying and harassment where I work	0.833
Q38.2. Reports of bullying and harassment would be acted on where I work, regardless of the perpetrator	0.833
Cronbach's alpha =	0.82

Table 5: Factor loadings for the culture around the reporting of bullying and harassment

Workplace Culture

Four questions in the survey asked about some problematic workplace behaviours. The response options to these questions ranged from 'Strongly disagree' through to 'Strongly agree'. These four

questions loaded onto two factors: one measuring the role alcohol plays in the industry's culture and one measuring personal connections ('who you know…').

Table 6 gives the factor loadings and Cronbach's alpha for these factors.

Question	Factor loadings: Role of alcohol consumption	Factor loadings: Connections
Q35.1. Drinking alcohol is a significant part of work culture within this industry	0.987	0.143
Q35.2. It's harder to secure new work or progress into senior roles in this industry if you don't drink alcohol in some situations	0.571	0.322
Q35.3. 'Who you know' is a significant part of work culture within this industry	0.289	0.757
Q35.4. It's harder to secure new work or progress into senior roles in this industry if you don't have strong connections	0.185	0.980
Cronbach's alpha =	0.76	0.89

Table 6: Factor loadings for workplace culture factors

Workplace Opinions and Wellbeing

Seven questions asked about respondents' views of their current workplace and eleven questions asked about the impact of aspects of their current workplace on their wellbeing. The response options for Q10 ranged from 'Strongly disagree' through to 'Strongly agree' and the options for Q13 were 'Very negative impact', 'Somewhat negative impact', 'No impact', 'Somewhat positive impact' and 'Very positive impact'.

These questions loaded onto 3 factors: one measuring the impact of the culture and communication in the workplace, one measuring work-life balance and one measuring the impact of career development.

Table 7 provides the factor loadings and the Cronbach's alpha for these factors.

Question	Factor loadings: Workplace culture and communication	Factor loadings: Work-life balance	Factor loadings: Career development
Q10.1. I feel valued at work	0.425	0.161	0.327
Q10.2. I rarely feel stressed at work	0.175	0.404	0.088
Q10.3. I feel able to do my job well	0.297	0.260	0.232
Q10.4. I often find it difficult to fulfil my commitments outside of work because of the amount of time I spend on my job	-0.008	-0.823	0.045
Q10.5. I feel my job is secure	0.299	0.246	0.310
Q10.6. Work doesn't stop me from making plans with friends and family	0.122	0.749	0.071
Q10.7. Work has a negative impact on my personal relationships	-0.160	-0.701	-0.033
Q13.1. Intensity of work	0.277	0.451	0.134
Q13.2. Control over my working hours	0.341	0.532	0.249
Q13.3. Networking and relationship development	0.301	0.143	0.674
Q13.4. Access to career development opportunities	0.304	0.069	0.829
Q13.5. Income and earnings	0.286	-0.024	0.606
Q13.6. Internal communications	0.610	0.179	0.437
Q13.7. Feedback mechanisms	0.696	0.151	0.396
Q13.8. Culture and values	0.784	0.241	0.293
Q13.9. Treatment of others	0.818	0.214	0.253
Q13.10. Support provision	0.781	0.223	0.320
Q13.11. Views on mental wellbeing	0.744	0.258	0.221
Cronbach's alpha =	0.92	0.81	0.80

Table 7: Factor loadings for workplace opinions and wellbeing factors

As some of these statements were not strongly associated with any of the factors (the factor loadings were small) the factors are improved by removing these statements (as they contribute more noise than information). Therefore this factor analysis was re-run, using only the statements that loaded on the factors (omitting those that didn't load) in order to calculate factor scores.

Attitudes to Mental Wellbeing in the Industry

Five questions asked respondents their views about attitudes to mental health in the industry more generally, and three questions about the support provided for mental wellbeing.

The response options for Q1 and Q21 ranged from 'Strongly disagree' through to 'Strongly agree'. Q21 also had an option allowing respondents to indicate that they had 'No experience' of the support provided. The data for this option was coded to missing, as it didn't naturally sit in the range of 'Strongly disagree' to 'Strongly agree'. The response options for Q2 ranged from 'Very Negative' to 'Very Positive'.

These questions loaded onto three factors: one measuring the provision of support for those working with difficult subjects, one measuring the attitude to mental health within the industry as a whole and one measuring the attitude to mental health with the people respondents work with.

Table 8 provides the factor loadings and Cronbach's alphas for these factors.

Question	Factor loadings: Support with difficult material	Factor loadings: Attitudes of people I work with	Factor loadings: Attitudes within industry
Q1.1. The Film and TV industry is a mentally healthy place to work.	0.215	0.346	0.708
Q1.2. People working in this industry have positive attitudes towards people experiencing mental health issues	0.204	0.704	0.434
Q1.3. People I work with day-to-day have positive attitudes about people experiencing mental health issues	0.137	0.781	0.223
Q2.1. Industry culture	0.174	0.25	0.729
Q2.2. Working conditions	0.184	0.159	0.723
Q21.1. In my experience, people working on challenging or traumatic stories receive sufficient support to manage their own mental wellbeing	0.882	0.136	0.192
Q21.2. In my experience, people working on shows with vulnerable contributors receive sufficient support to manage their own mental wellbeing	0.892	0.125	0.199
Q21.3. My workplace ensures everyone is aware of the Mental Health support on offer	0.393	0.317	0.168
Cronbach's alpha =	0.91	0.83	0.81

Table 8: Factor loadings for attitudes to mental wellbeing in the industry factors

This factor analysis was re-run, omitting Q21.3 which didn't load on any of the factors in order to calculate factor scores. In the calculation of factor scores median values were imputed for those respondents with missing data (who had ticked 'No experience') so that their factor scores were not missing.

Modelling

The variables derived directly from the survey questions, and the factors derived above were included in a statistical model to explore how they were associated with mental wellbeing. The outcome variable (SWEMWBS) is a scale score ranging 7-35 and is approximately Normally distributed. We used a multiple linear regression for the modelling.

In order to choose which of the available variables to include as explanatory variables in the model, we performed a stepwise variable selection procedure. In this procedure we started with an initial

model that included all the variables and removed explanatory variables one at a time or added one back in that had previously been deleted, evaluating the model at each step to look for the model that has the best value of the Akaike information criterion (AIC), a measure of model fit that has a penalty for the number of parameters in the model. This penalty discourages over fitting and ensures that among a group of similarly performing models, the simplest will be selected. The stepwise selection procedure carries on removing variables until no further improvement in the AIC can be achieved.

Note that statistical models, especially in observational studies, can only indicate that there are associations between variables. By themselves, they cannot draw conclusions about causality. However, there may be strong theoretical or qualitative reasons for believing that A causes B rather than B causing A, from which it may be possible to infer causation. We must also be alert to spurious correlations or related variables each being affected by a third, unobserved variable.

Collinearity

Each variable in a statistical model shows the association between that explanatory variable and the outcome variable while taking account of all other variables included in the model. As explained in the Factor Analysis section above, where explanatory variables included in a model are correlated care must be taken when interpreting the results, as one variable may be acting as a proxy for one or more other variables (multi-collinearity), and so the association between an explanatory variable and an outcome can appear reduced, or appear not to be related or, even more extreme, the association may appear reversed.

This was the case for "In the last year, have you experienced bullying?" as the results seemed counter-intuitive (when we included "have you experienced bullying" the association with mental wellbeing was positive, indicating that those who had experienced bullying tended to have higher mental wellbeing scores). We explored whether multicollinearity was a potential explanation for this by assessing which variables were associated with having experienced bullying and then running the model excluding those variables. By excluding the UCLA loneliness score and the factors that describe various aspects of the workplace (i.e., the variables in the model that may be correlated with having experienced bullying) we found that the result for this variable is reversed (and those who experience bullying have lower mental wellbeing scores, as expected). In discussion with the client, we agreed that, for this reason, this variable and the other variables about experiencing different types of harassment were omitted from those put forward for inclusion in the model because if we don't acknowledge the collinearity affecting this variable we get results that are potentially misleading.

Another variable which is noticeably affected by multi-collinearity is the factor which measures the culture around the role of the consumption of alcohol, which had a positive association with mental wellbeing. On further inspection it was found to be correlated with other variables in the model. In consultation with the client and because this variable had the smallest contribution to the model, we decided to retain it in the model. Though care must be taken when interpreting the results.

Modelling Results

Table 9 and Table 10 show the results of the regression model in descending order of their contribution to R^2 (see below).

Variables that were considered for modelling, but which do not appear in the tables were not associated with mental wellbeing (once other variables had been accounted for).

The coefficients in the tables indicate the change in the mental wellbeing score that is associated with each explanatory variable. There are three types of variables in the model: a conventional continuous variable, categorical variables and factor scores. We provide examples below for how to interpret the coefficients for each.

- The coefficient for the UCLA loneliness score is a conventional continuous variable. Its coefficient is -0.57 (with a 95% confidence interval of -0.65 to -0.50), which indicates that the mental wellbeing score is 0.57 points lower (on the scale of 7-35) for a change in UCLA loneliness score of 1 point (on a scale of 3-9).
- For categorical variables the coefficient indicates the change in mental wellbeing score compared to a reference category. For example, the reference category for age is respondents aged 30-34 and the coefficient for respondents aged 55-59 is 0.70 (with a 95% confidence interval of 0.11 to 1.28) indicating that respondents aged 55-59 have a mental wellbeing score 0.70 points higher than those aged 30-34.
- The variables that are factor scores are not on an absolute scale and are measured relative to the sample of respondents. They are therefore harder to interpret. The easiest way to conceptualise these coefficients is to consider the average (the median) respondent in terms of that factor; the respondent at the 50th percentile of the factor score. The coefficients for these variables indicate the difference in mental wellbeing score of the respondent at the 84th percentile compared to the respondent at the 50th percentile for that factor. So, for example, the coefficient for Career Development is 0.65 (with a confidence interval of 0.50 to 0.79), which indicates that respondents at the 84th percentile, in terms of reporting the impacts of career development, had a mental wellbeing score 0.65 points higher than respondents at the median (50th percentile).

The aim of statistical modelling is to explain as much of the variation in the outcome as possible, by taking account of the variation in other associated explanatory variables. The percentage of variation in the outcome that is explained by the explanatory variables is denoted R^2 ("R-squared"). R^2 takes values ranging from 0 to 100% where a value of 100% indicates that all the variation has been explained by the variables in the model. The explanatory variables in the final model collectively explain 44.4% of the total amount of variation in the mental wellbeing scores (R^2 = 0.4339), which is slightly less than half of the variation. This may be because there are some aspects of FTV workers' working life and experiences that are not captured in the survey but also because there are external influences on mental wellbeing for workers' home lives.

To show the relative importance or contribution of each variable in the model, the R^2 for the full model omitting each variable in turn is tabulated. This shows the percentage of variation explained by each variable, after accounting for all other variables in the model. For example, the R^2 for the UCLA loneliness score is 36.28%, so with all other variables in the model by adding the UCLA loneliness measure we increase the percentage of variation explained from 36.3% to 43.4%, so an increase of 7.1 percentage points.

Table 9 and Table 10 have been ordered in descending order of their contribution to R^2, so the variables are in order of their relative contribution to mental wellbeing.

Most, but not all of the factors derived from the survey were associated with mental wellbeing. Note that we only interpret those results that as statistically significant (i.e., the p-value in Tables 9 and 10 below is less than 0.05). These have been shaded. The others should not be over-interpreted.

Taking account of all the other variables in the model:

- Respondents with higher loneliness scores tended to have lower mental wellbeing scores,
- Respondents reporting positive impacts of career development tended to have higher wellbeing scores,
- Respondents reporting positive impacts of workplace culture and communication tended to have higher wellbeing scores,
- Respondents who reported that they were struggling financially tended to have lower mental wellbeing scores,
- Those who reported that changes due to covid were positive tended to have higher mental wellbeing scores,
- Respondents reporting a positive work-life balance tended to have higher mental wellbeing scores,
- There were some differences in mental wellbeing for respondents working in different departments. Compared to those working in Content Creation,
    - Respondents working in Animation and VFX tended to have lower mental wellbeing scores,
    - Respondents working in Film Distribution tended to have lower mental wellbeing scores,
    - Respondents working in Sales and Marketing tended to have lower mental wellbeing scores,
- There were some differences in mental wellbeing by age of respondent. Compared to those aged 30-34:
    - Respondents aged 20-24 tended to have higher mental wellbeing scores, as did respondents aged 45-49, 55-59, 60-64 and 65-69,
- Compared to respondents who were freelance/self - employed, those who were employees tended to have lower mental wellbeing scores,
- Respondents who reported that attitudes to mental wellbeing in the industry were positive tended to have higher mental wellbeing scores,
- Respondents who reported that the people they worked with had positive attitudes to mental wellbeing tended to have higher mental wellbeing scores,
- Respondents reporting that they worried about their finances tended to have lower mental wellbeing scores,
- Compared to respondents who worked up to 50 hours the previous week, those who either didn't work last week or who worked more than 50 hours both tended to have lower mental wellbeing scores,
- Compared to respondents who are White, those who are Black tended to have higher mental wellbeing scores,
- Compared to respondents who worked between 13 and 47 weeks last year, those who worked less than 12 weeks tended to have lower mental wellbeing scores,

- Respondents who reported that there was a culture of drinking alcohol tended to have higher mental wellbeing scores. Though note that, as with all of the interpretations above, this is having taken account of all other variables. So, the mental wellbeing scores of respondents who reported that there was a culture of drinking alcohol were not as low as would be expected given other measures of workplace culture and respondents' attributes.

Variable	Category	Comparison	Coefficient	SE	95% CI	p-value	Model R^2 omitting variable
(Intercept)	-	-	23.21	0.30	(22.62, 23.81)	<0.001	
UCLA Loneliness score	-	-	-0.57	0.04	(-0.65, -0.50)	<0.001	36.28%
Career development	-	-	0.65	0.07	(0.50, 0.79)	<0.001	41.18%
Workplace culture and communication	-	-	0.48	0.08	(0.33, 0.62)	<0.001	42.27%
Struggling financially	-	-	-0.50	0.08	(-0.66, -0.34)	<0.001	42.29%
Impact of covid	-	-	0.43	0.07	(0.29, 0.57)	<0.001	42.37%
Work-life balance	-	-	0.45	0.08	(0.30, 0.60)	<0.001	42.45%
Department	Animation and VFX	Content creation	-0.99	0.31	(-1.59, -0.38)	0.002	42.49%
	Broadcast		-0.31	0.19	(-0.68, 0.06)	0.101	
	Craft		0.19	0.30	(-0.41, 0.78)	0.537	
	Exhibition		-0.02	0.51	(-1.01, 0.98)	0.970	
	Facilities management		0.39	0.99	(-1.55, 2.32)	0.695	
	Film distribution		-1.22	0.60	(-2.39, -0.06)	0.040	
	Film studio staff		-0.37	0.39	(-1.13, 0.40)	0.345	
	HR		-0.85	0.98	(-2.78, 1.08)	0.389	
	IT, legal and finance		-1.02	0.53	(-2.06, 0.03)	0.056	
	Management and logistics		-0.26	0.27	(-0.79, 0.26)	0.324	
	Post-production		0.14	0.26	(-0.38, 0.65)	0.601	
	Sales and marketing		-1.27	0.47	(-2.19, -0.35)	0.007	
	Technical		0.01	0.26	(-0.49, 0.52)	0.955	
	Other		-0.19	0.20	(-0.58, 0.20)	0.349	
	Missing		-2.89	1.13	(-5.11, -0.66)	0.011	

Table 9: Model results (part 1 showing variables included, the regression coefficient, its standard error and 95% confidence interval, p-value and R^2 when the variable is omitted. Statistically significant results are shaded.

Variable	Category	Comparison	Coefficient	SE	95% CI	p-value	Model R^2 omitting variable
Age	16-19	30-34	-2.71	1.95	(-6.53, 1.10)	0.163	42.52%
	20-24		0.78	0.32	(0.16, 1.39)	0.014	
	25-29		-0.04	0.21	(-0.45, 0.37)	0.853	
	35-39		0.19	0.21	(-0.23, 0.61)	0.372	
	40-44		0.09	0.22	(-0.35, 0.53)	0.687	
	45-49		0.60	0.23	(0.16, 1.05)	0.008	
	50-54		0.44	0.26	(-0.07, 0.96)	0.091	
	55-59		0.70	0.30	(0.11, 1.28)	0.019	
	60-64		0.75	0.38	(0.00, 1.49)	0.049	
	65-69		1.57	0.50	(0.60, 2.54)	0.002	
	70 or older		1.38	0.86	(-0.30, 3.07)	0.108	
	Missing		0.41	0.58	(-0.72, 1.54)	0.474	
Are you...?	An employee	Self-employed / Freelance	-0.73	0.17	(-1.07, -0.39)	<0.001	42.84%
	Combining employment with freelance work		0.01	0.19	(-0.36, 0.38)	0.955	
	Missing		-1.80	1.96	(-5.64, 2.04)	0.358	
Attitudes within industry	-	-	0.30	0.08	(0.14, 0.46)	<0.001	43.00%
Attitudes of people I work with	-	-	0.26	0.07	(0.12, 0.40)	<0.001	43.02%
Financial worries	-	-	-0.23	0.07	(-0.36, -0.10)	0.001	43.06%
How many hours did you work last week?	I didn't work last week	Up to 50 hours	-0.62	0.21	(-1.03, -0.22)	0.003	43.10%
	50+ hours		-0.30	0.15	(-0.60, 0.00)	0.049	
Ethnicity	Asian	White	0.20	0.39	(-0.56, 0.97)	0.602	43.10%
	Black		1.32	0.42	(0.48, 2.15)	0.002	
	Mixed		-0.10	0.28	(-0.64, 0.44)	0.715	
	Other		0.21	0.44	(-0.66, 1.08)	0.635	
	Missing		-0.07	0.32	(-0.70, 0.57)	0.840	
How many weeks worked last year?	Less than 12 weeks	13 - 47 weeks	-0.45	0.20	(-0.85, -0.05)	0.028	43.26%
	48 weeks or more		-0.04	0.15	(-0.33, 0.25)	0.783	
Role of alcohol consumption	-	-	0.14	0.06	(0.01, 0.26)	0.033	43.27%

Table 10: Model results (part 2) showing variables included, the regression coefficient, its standard error and 95% confidence interval, p-value and R^2 when the variable is omitted. Statistically significant results are shaded.

Concluding Remarks

Applying factor analysis to the complex survey data was a successful way of measuring different aspects of workplace cultures, support and respondents' experiences.

Our statistical model showed that many of these aspects were associated with mental wellbeing. Loneliness was the largest contributor to explaining respondents' mental wellbeing scores. Other factors which were negatively associated with mental wellbeing were where respondents were struggling financially, were worried about their finances, or hadn't worked the previous week or for fewer than 12 weeks the previous year. There were more factors that were positively associated with mental wellbeing, such as having career development opportunities, there being a positive culture and communication within the workplace, having a good work-life balance and working with people who and in places that have positive attitudes to mental wellbeing.

These results indicate that there are opportunities to make changes that have the potential to improve the mental wellbeing of those working in the film and TV industry.

However, our model explains some of the variation in mental wellbeing scores, but not all. This may be because there are other aspects of the workplace or the experiences of workers that are not captured in the current Looking Glass survey. However, there are likely to be many factors outside of working life, for example, personal relationships and home lives which also impact on mental wellbeing which one would expect to explain more of the residual variation.