GIGMETER SPECIAL REPORT #2

# ARE FEMALE GIG WORKERS IMMUNE TO COVID-19

Although the pandemic has resulted in a shift in demand on online global platforms to predominantly “male” occuppations such as software development, our “survival analysis” showed that women working on global online platforms were as successful as men before and during the pandemic.

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GIGMETER TEAM

# INTRODUCTION

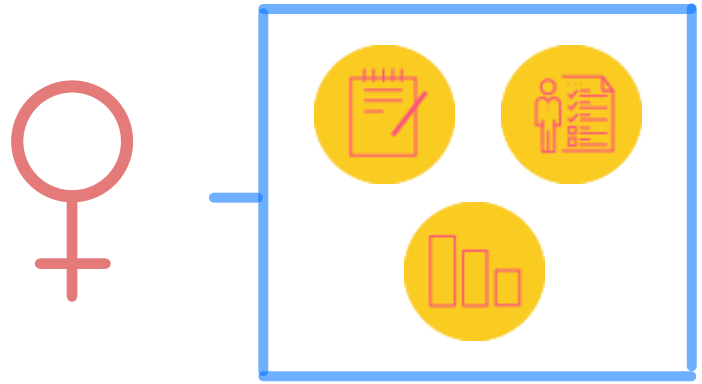
The pandemic has changed the structure of demand for professions in the global platform-mediated work market. In this sense, not all occupations experienced the effects of Covid-19 the same way. Early in the crisis, the demand for creative and multimedia, as well as for sales and marketing services, decreased significantly, and increased in the software development sector (OLI 2020, Stephany 2020).

Such changes have attracted the attention of the research community, but most reports have focused on general developments in the platform-mediated work market during the pandemic, leaving aside some other challenges, such as the gender dimension of this type of work during Covid 19.

That is why the latest special edition of GigmetarTM focuses on the following question: how did the pandemic affect the participation of men and women from Serbia in the global online labor market, taking into account their professions?

At first glance, as the October measurement shows, the participation of women in different professions in the general population of online workers changed very little since December 2019 when the Gigmeter measurements began. However, there have been some changes.

In October 2020, for the first time, the number of professions dominated by women is equal to the number of professions dominated by men. The advantage of women is thus dominant in the field of writing and translation, while they marginally lead in the data entry and administrative services, as well as in professional services. This is a minor but significant change compared to pre Covid-19 era, when women dominated only in the occupation of writing and translation.

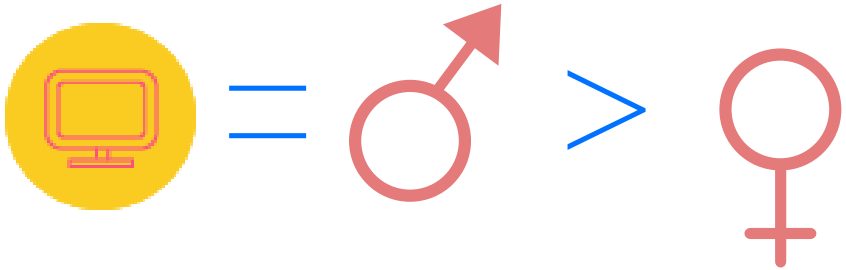


However, the October Gigmetar also shows the increase in pay difference between men and women during Covid-19: hourly rates demanded by women were lower by 23.6 percent than those quoted by men in October 2020 compared to December 2019.

The third important novelty is that the gig labor market is dominated by female workers with previous experience, while the percentage of newly arrived women in all occupations is significantly lower. This might lead to the conclusion that entering this labor market is becoming increasingly difficult.

With respect to women who have established their position in working on online platforms, the data show that they remain in professions that are less in demand, and slowly conquer those that are more competitive, such as software development. Although at the time of Covid-19 the percentage of women who stepped into the field of software and technology developmentincreased, this should not mislead us - this increase is still lower than the one applicable to newly arrived men in this profession.

However, the question is whether the pandemic really endangered the position of women on global online platforms and stopped their income and professional convergence with men which was already present in Serbia before Covid-19?



# SURVIVAL ON ONLINE PLATFORMS

To delve deeper into gender dimensions of online gig work and more closely examine whether women had the same prospects on global online platforms, we decided to run additional tests and compare survival rates over time of both men and women in the six occupations in which they operated. This approach enables us to estimate the overall sustainability of online gig work in Serbia during the last ten months and beyond. At the same time, it helps us disentangle the gender- and occupation-related effects on the tenability of online platform work in Serbia during the past year.

## METHOD

### PARTICIPANTS

The overall sample comprised of 8,494 participants whose data have been gathered in the course of the study (December 2019 – October 2020). During the data collection period (February, May, and October 2020 as measurement points), the "dropout" rates increased substantially. Furthermore, the sample composition varied across the four measurements, both due to the workforce's expected fluctuation and methodological factors. Hence we opted for the analytic strategy capable of coping with the data structure changes and capturing the temporal dynamics of platform-based online gig work in Serbia.

### DATA ANALYSIS

Survival analysis may be best described as an analytic approach (or an ensemble of statistical techniques) aimed at estimating objects' endurance over time. Sample "attrition" is an inherent part of the procedure, as it is closely bound to the durability of the phenomenon examined. Namely, the analysis considers the so-called "censored" observations, meaning the observations that either outlasted the study or dropped out during its course. Though larger samples are preferred, the analysis can be performed well on small datasets (see e.g. Anderson, 2016; Xu, 2017.) The expected outcomes of the analysis are: a) survival curve, a.k.a. a visualization of the survival function predicting the survival length during the given period of time; b) information about group differences regarding survival, examined by the Kaplan-Meier method. The option to define the outcome as non-binary is also available, though we did not apply it in the current study. The analysis was performed using the statistical package “jamovi” (“survival” module) and the adjoining R packages (The jamovi project, 2020; Gasparini, 2020; Harrison, Drake, & Ots, 2019;Kassambara, Kosinski, & Biecek, 2019; Millard, 2013; Morris, Jarvis, & Cragg, 2019; R Core Team, 2020; Therneau & Grambsch, 2000; Therneau & Lumley, 2019; Xu, 2017.)

‘Survival’ refers to remaining in one's originally declared category of work. If the respondent dropped out of the sample, or in any way changed the original occupation, he or she were considered not to have “survived”. The loss of information about the respondent's initial occupation was therefore taken to be a 'critical event'.

To enhance the validity, we conducted each analysis on two samples, which differed with respect to the treatment of the missing/censored data. In the first case, all missing data, regardless of the cause of absence (either not stating the profession or dropping out at some point), were included and provisionally treated as censored. This produced a larger sample with an arguably larger amount of random error. In the second case, we used only the data from the participants present in the initial phase of the study who named their profession and either stayed throughout the study or dropped out in the process. Considering the amount of possible error in the data, we tentatively refer to the first sample as to the "worst-case-scenario-sample" and to the second sample as to the "best-case-scenario-sample".

# RESULTS

## OVERALL SURVIVAL RATES

Survival rates (not taking into account gender or profession) suggest that the probability of staying in the primary professional domain substantially drops approximately six months into the study. According to the best-case scenario, roughly 25-30% participants stay in their professions ten months after the study's kick-off, whereby median survival time is about six months. The worst-case scenario points to the possibility of less than 5% participants remaining active within their professions, median survival time estimated at three months.

Although informative, the results described lack specificity – they do not account for the drop in survival rates. To examine the possible precursors of (non)survival, we included two explanatory factors – gender and main occupation (as stated in the study's initial phase).

FIGURE 1

Figure 1. “Best-case-scenario” overall survival curve

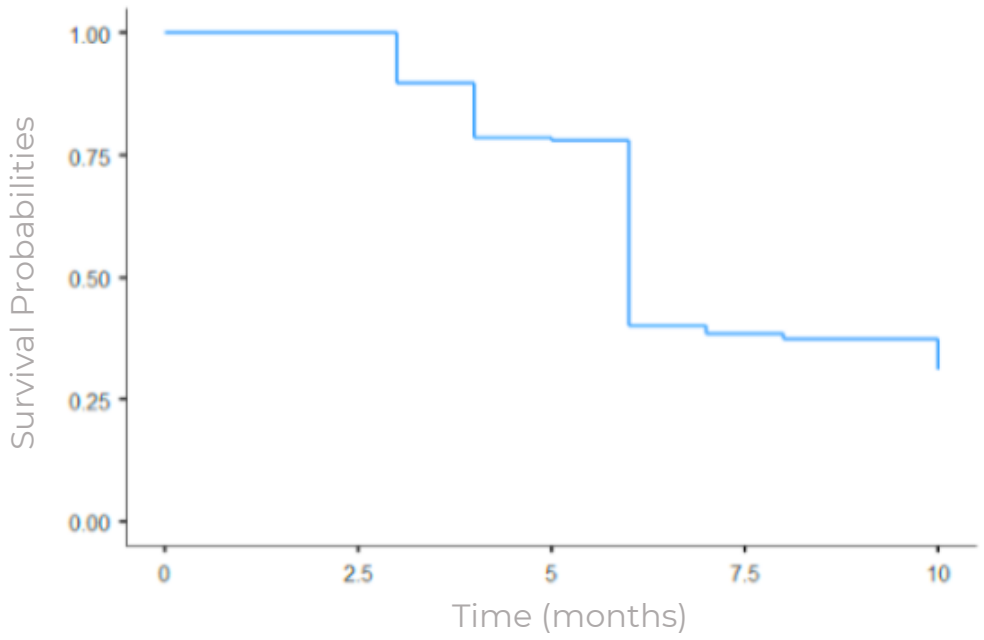
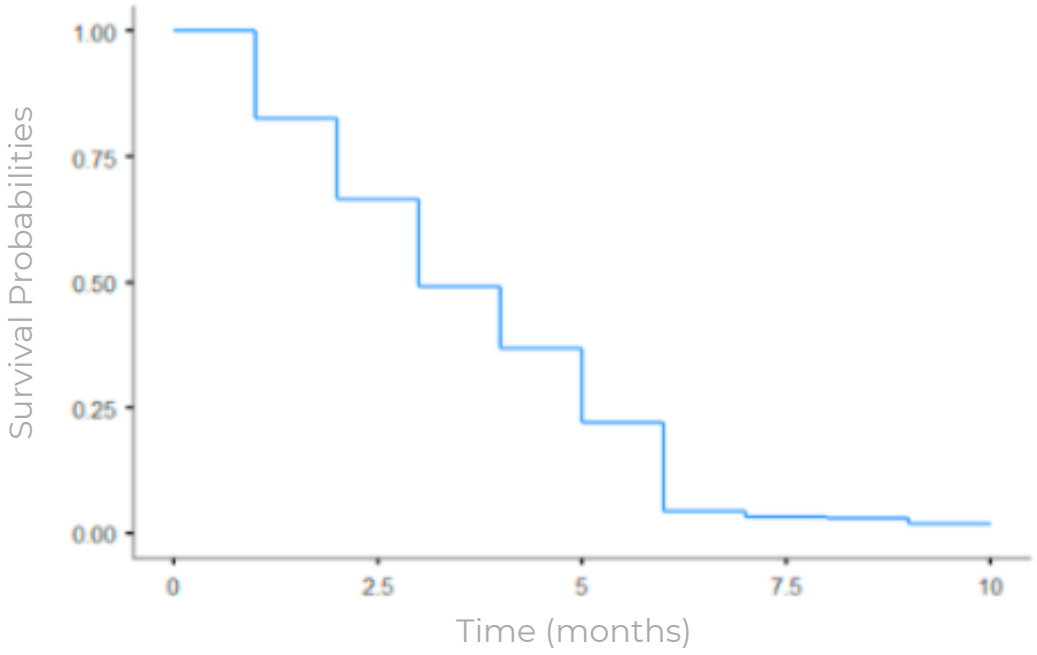



FIGURE 2

Figure 2. “Worst-case-scenario” overall survival curve



The analysis showed that men and women had almost the same survival rates in the reporting period. In both groups, the best-case scenario suggests the median survival time of about six months. The worst-case scenario reduces that number to four months for each gender. Nevertheless, the log-rank test (a measure of between-group differences) showed the same temporal dynamic for both women and men. In general, the likelihood of survival was identicalfor men and women, in contrast to reported findings that indicate women dropped out of platform work twice as quickly as men (Farrell and Greig, 2016, Balaram et al. ,2017). While one could argue that methodological difficulties may have obscured our findings, the results were identical across the two levels of methodological rigor. Although the current state of affairs is not directly comparable to the pre-covid circumstances, one could assume that the changes imposed by the pandemic could very likely have "subdued" the differences, either temporarily or permanently.

While the gender differences proved to be insignificant, the occupations showed pronounced differences with regard to survival. In the best-case scenario, the category of creative and multimedia had the best estimated 10-month survival rate (58%),

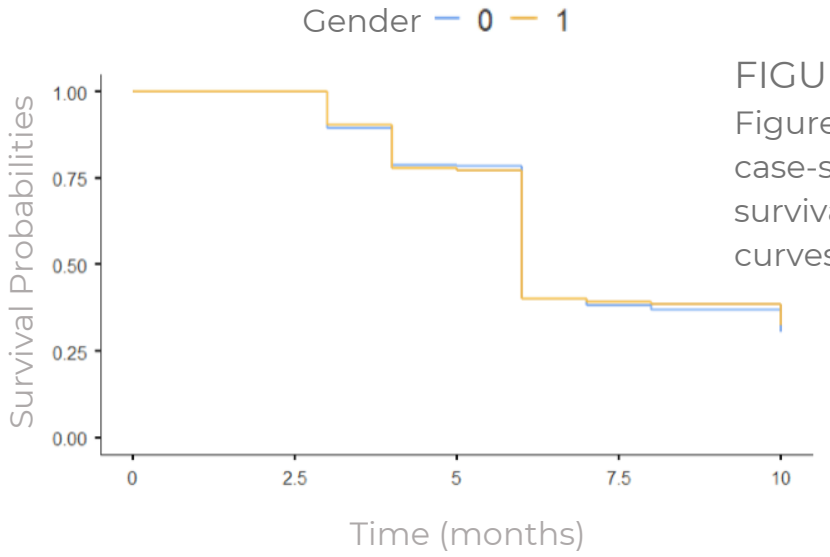



FIGURE 3
Figure 3. “Best-case-scenario” survival curves*gender

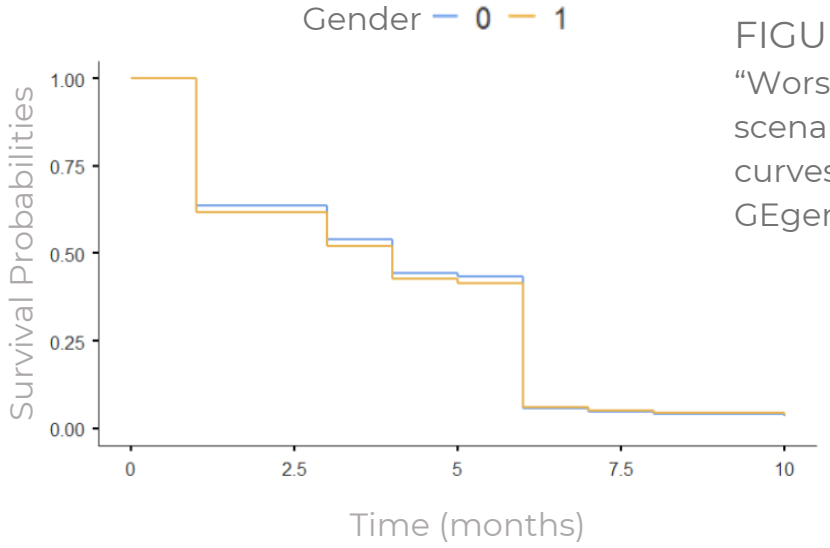



FIGURE 4
“Worst-case-scenario” survival curves*gender GEgender

FIGURE 5

Figure 5. “Best-case-scenario” survival curves* occupation

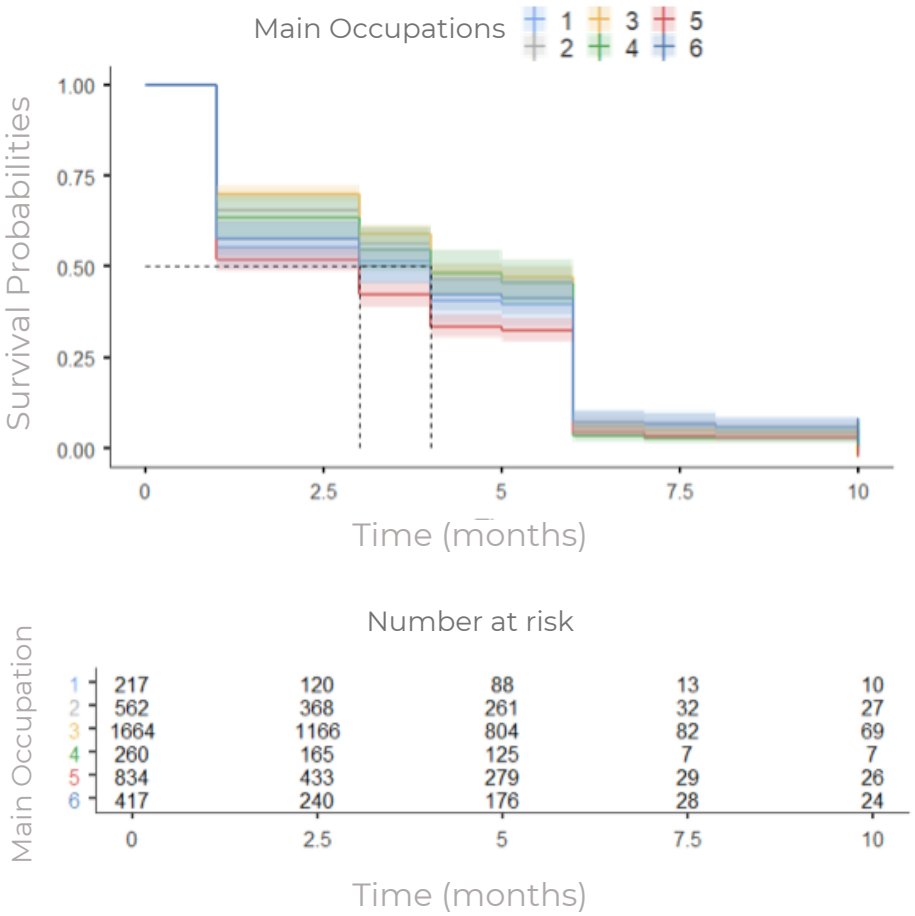
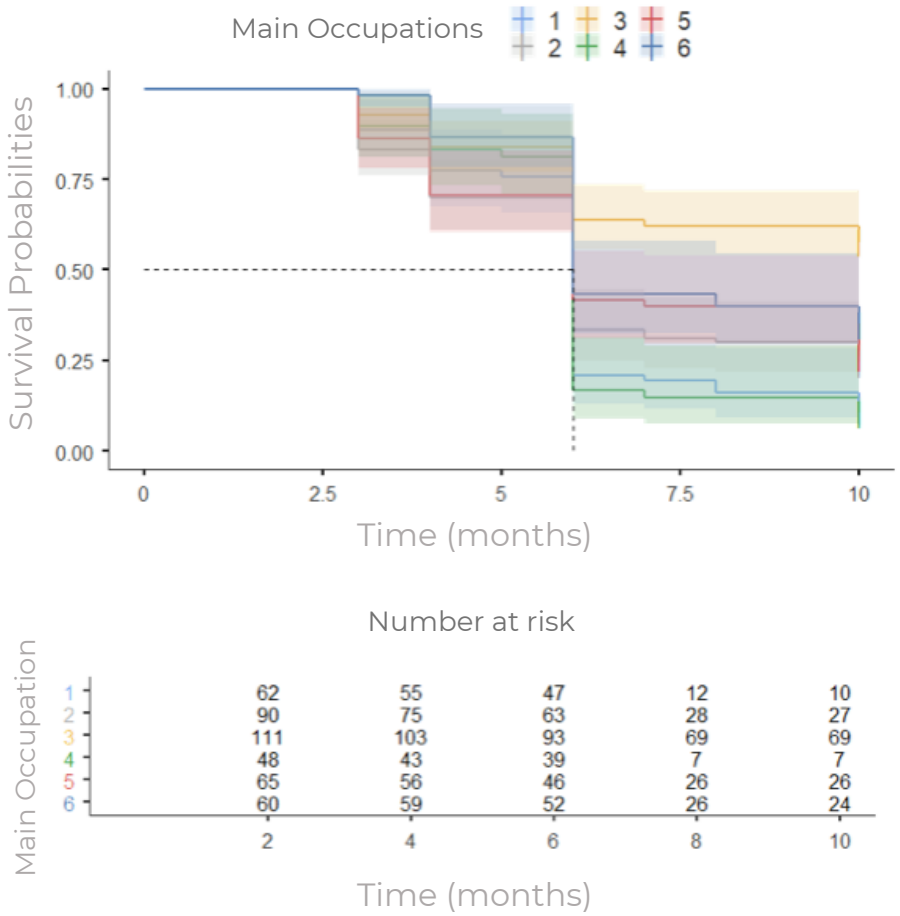



FIGURE 6

Figure 6. “Worst-case-scenario” survival curves*occupation




1. Professional Services
2. Clerical and data entry
3. Creative and multimedia
4. Sales and marketing support
5. Software dev and tech
6. Writing and translation

followed by writing and translation (35%). The lowest estimated 10-month survival time was for the professional services category (11%), followed by sales and marketing support (17%).

Within the professional services category, there were no significant gender differences regarding "survival", neither using the best-case scenario nor using the worst-case scenario strategy. While both showed somewhat more pronounced variability in survival times for men (best-case estimation of upper median estimate level for men is 8, while for women is 5, similarly for the worst-case situation), the differences are insignificant. Similar results were obtained for clerical and data entry occupation , whereby the estimated survival time was estimated at six months for both genders, at best. Neither of the remaining professional categories (creative and multimedia, sales and marketing support, software development and technology, writing and translation) showed statistically significant gender differences.

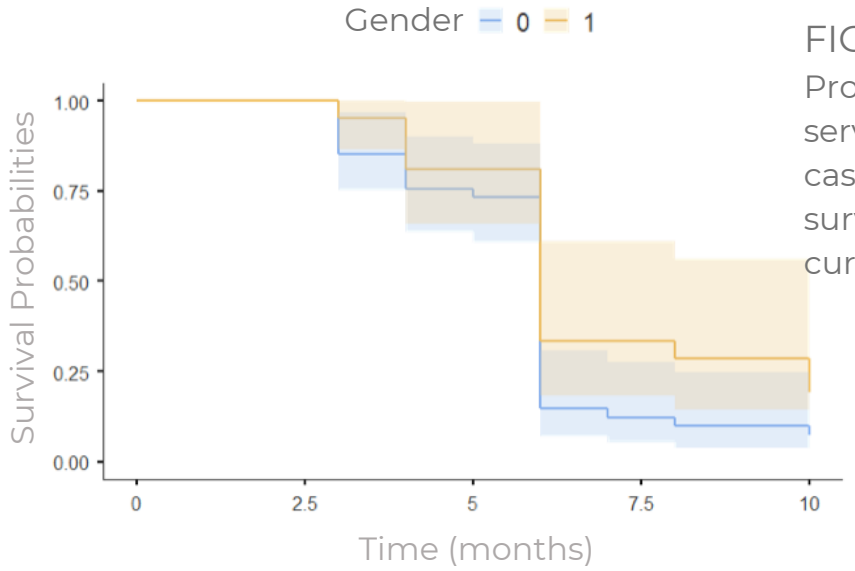



FIGURE 7
Professional services: “Best-case-scenario” survival curves*gender

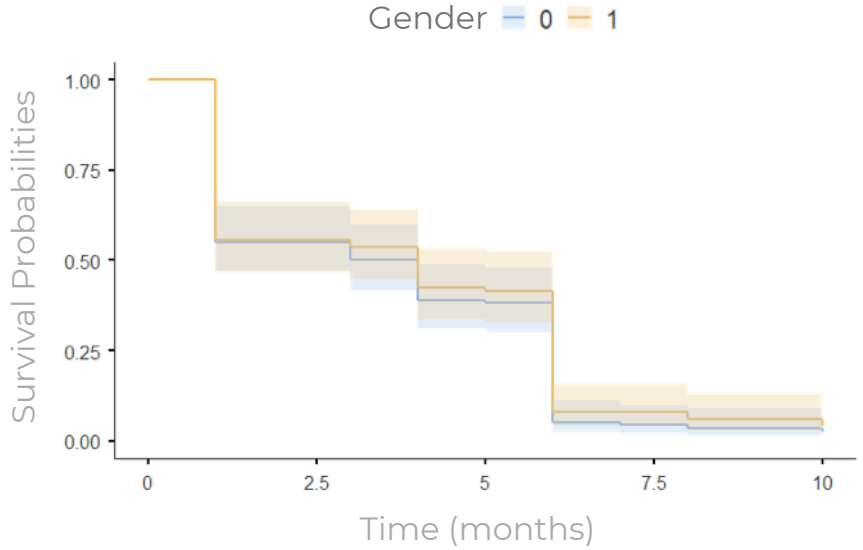



FIGURE 8
Professional services: “Worst-case-scenario” survival curves*gender

# CONCLUSION

Given the results, and considering all limitations and challenges present in the current study, one may draw several conclusions.

1. Apparently, there was a sizeable decrease in adherence to the initial main occupation, which most likely happened approximately half way through the study. Thus one may infer that the circumstances imposed by the pandemic affected the platform gig work in Serbia. While there is no hard data to support this conclusion, the Covid-19 pandemic is undeniably a major factor to be counted in.

2. Regardless of what the changes can be attributed to, the sector of professional services has probably been most seriously affected. This conclusion, though, should come with a grain of salt given the comparably small number of professionals in this niche who took part in the study.

3. The least affected professional category is creative and multimedia. The survival rate for the writing and translation occupation also seems to be comparably high. Again, one cannot provide a straightforward account of this result.

4. The results suggest that there are no substantial gender differences regarding survival within one's profession. Nevertheless, what may be a valuable piece of information to consider in forecasting the developments in the field, is the apparent vitality of the professional niches in which women dominate and/or excel. Therefore, it is not impossible that the professions dominated by women prove more resilient to the challenges of the pandemic-affected world in the foreseeable future. However, in this measurement, the professions that show resilience are both the so-called "male" ones such as the creativeservices and multimedia, as well as the predominantly “female” ones such as the writing and translation.

5. What also became apparent during the pandemic was that women were significantly under-represented in occupations that were better paid and in greater demand. This had been the case before Covid-19, and the pandemic only accelerated this trend owing to the increase in demand for "male" ocuppations.

In short, our survival analysis showed that women working on global online platforms were as succsesful as men in remaining on platforms. Thus, Covid-19 did not cause changes in this domain. However, the fact that a smaller number of women entered platform work and better paid professions during the pandemic, while at the same time demanding lower price for their work, raises the question of potential divident of remote work on online platforms from a gender perspective.

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