

# Demographic Surveys of Arab Annotators on CrowdFlower

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## ABSTRACT

Mechanical Turk (MTurk) and CrowdFlower (CF) are popular crowdsourcing annotation platforms that are used in a variety of applications. Knowing the demographics of workers is important for improving tasks design to achieve high quality annotations. While these demographics are well studied for MTurk and CF for workers in many countries, no study is performed for annotators from Arab countries. In this paper, we present results of two demographic surveys in which 500 contributors from Arab countries participated in each. The demographics cover gender, age, country, education, foreign languages proficiency, pay rate, and motivation.

## 1. INTRODUCTION

Crowdsourcing (CS) is the process of segmenting a complex task into smaller units of work (Human Intelligence Tasks, or HIT's) and distributing them to be done in parallel by a large number of online workers (annotators) at lower monetary and time costs compared to traditional employees. The main advantages of CS are: cost, speed, flexibility, scalability, and diversity. Aside from issues related to quality control, other considerations are important for proper design of tasks including task complexity, payout, etc.

Though Amazon Mechanical Turk<sup>1</sup> (MTurk) is perhaps the most popular CS platform, it is difficult for users who live outside of the US to use their services. We focus here on another popular platform that allows international workers, namely CrowdFlower (CF)<sup>2</sup>. In this paper, we present results of two demographic surveys in which 500 contributors from Arab countries participated in each. The demographics cover items we think are related to quality like: gender, age, country, education, foreign languages proficiency, pay rate, and motivation. This is inline with with previous work that surveyed demographic information of 1,000 MTurk workers [Ipeirotis 2010] also in [Ross 2010]. CF also surveyed

<sup>1</sup><https://www.mturk.com>

<sup>2</sup>[www.crowdflower.com](http://www.crowdflower.com)

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20,000 of its workers to determine their country, age, number of children, education, ethnicity, gender, income, marital status, etc.<sup>3</sup> No Arab country was included in the top 10 countries in their survey. Thus, this study fills an important gap for studying demographics of Arab annotators, which helps in understanding their nature to improve job design and annotation quality.

## 2. SURVEY SETTINGS

We conducted two surveys of CF workers on June 22 and August 4, 2015 (Survey 1 and Survey 2). The surveys were created in the form 2 annotation jobs. The surveys requested the workers to select appropriate values that match their: age, gender, highest level of education, English proficiency, French proficiency, pay rate for 1 minute of work, country of origin, and reason of work at CF. Each survey was answered by 500 Arab annotators, where we set "Language Capability" to Arabic. The reason behind running the survey twice was because we envisaged that some workers would contribute to both surveys. Given that the time difference between the two surveys, the repeat workers were unlikely to remember their previous answers. The repetition and the time delay would allow us to gauge the reliability of the answers. Indeed, roughly a third of the contributors to the first survey also participated in the second survey.

## 3. SURVEY RESULTS

Figures 1, 2, 3, 4, 5, 6, 7, and 8 show the combined results of both surveys for gender, age, country, education level, English proficiency, French proficiency, desired pay rate for one minute of work, and motivation to work on CF.

The results show that the workers are reportedly mostly males (>75%), aged 20-39 (>77%), college educated (75%), with medium to high English proficiency (>87%), and with low French proficiency (56%). The country that had the most number of workers is Egypt, which is the most populous Arab country. There are also workers from a variety of different countries that speak different dialects of Arabic (ex. Gulf, Maghrebi, and Yemeni). Most of them CF work as a secondary source of income (>55%), and most are willing to be paid 20 cents or less per minute for their work.

<sup>3</sup> <https://success.crowdflower.com/hc/en-us/articles/202703345-Crowd-Demographics>

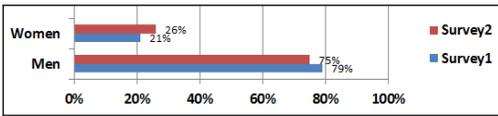


Figure 1: Gender Breakdown

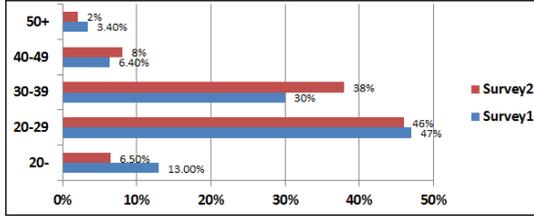


Figure 2: Age Distribution

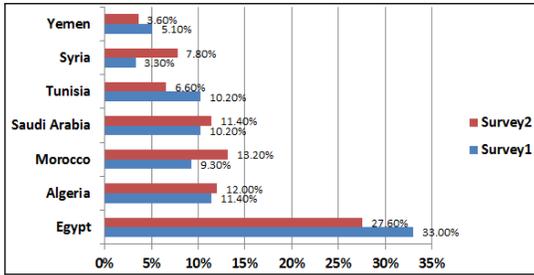


Figure 3: Distribution of Top Arab Countries

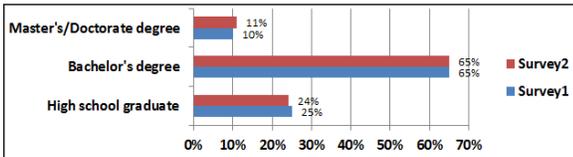


Figure 4: Education Level

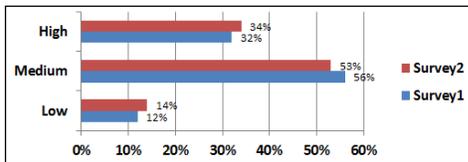


Figure 5: English Proficiency

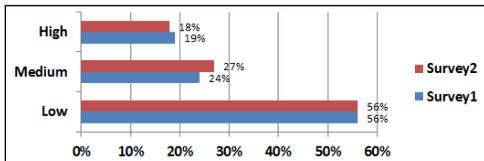


Figure 6: French Proficiency

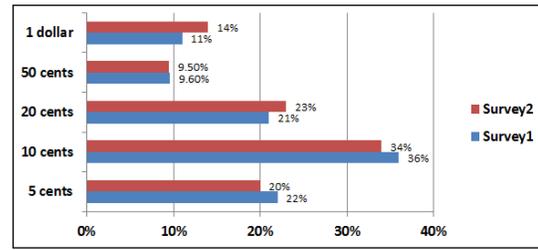


Figure 7: Par Rate Distribution

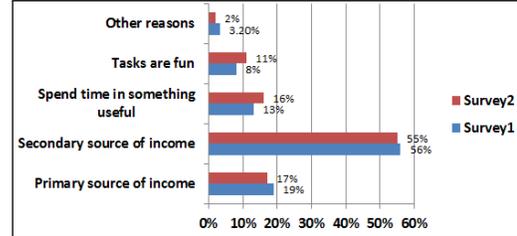


Figure 8: Reason for Participating on CF

As mentioned earlier, we found that There is around one third of the contributors participated in both surveys. Figure 9 shows the cross survey agreement for the different survey items. Agreement can be used as a measure of confidence in the results. Variations in desired pay, motivation, and language proficiency are some what understandable. However, discrepancies on items such as gender and age require further investigation.

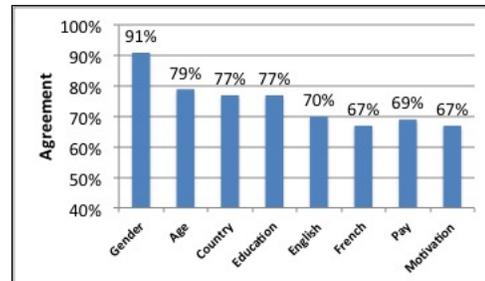


Figure 9: Cross Survey Agreement

## 4. CONCLUSION

In this paper, we presented demographics of Arab annotators at CF collected from 2 different surveys with a time difference of around two months between them. The results can lead to enhancing the quality of annotation jobs. For example giving a reward of 20 cents for one minute of work in an annotation task is satisfactory for around 80% of Arab CF workers.

## 5. REFERENCES

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[Ross 2010] Irani Lilly Silberman M. Six Silberman Zaldivar Andrew Tomlinson Ross, Joel. 2010. Who are the crowdworkers?: shifting demographics in mechanical turk. *Human Factors in Computing Systems* 6, 2 (2010), 2863-2872.