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CROWDSOURCING AS A CAREER TREND: ARE ONLINE WORKERS THE NEW CONTINGENT WORKFORCE?

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Abstract: *Organizational trends towards outsourcing and contingent workers have redefined our current views towards careers. Organizations that are seeking a cost efficient and simple process to complete specified tasks are benefiting from utilizing crowdsourcing. Crowdsourcing also proves to be a beneficial option for employees interested in a contingent-employee position. Online marketplaces where organizations post tasks for workers to complete on a pay-per-task basis give workers the flexibility to select the tasks they want to complete and complete them from anywhere in the world. Results from an international survey of 404 knowledge workers participating in crowdsourcing activities help to form an understanding of some of the current perceptions and future trends in crowdsourcing. Findings from the survey are discussed within the context of traditional and protean careers. The practice of utilizing these online marketplaces, and the benefits and costs associated with doing so, are also discussed from the employer and employee perspective.*

Keywords: *Crowdsourcing, Knowledge Workers, Contingent Workers*

Introduction

Traditional career paths from the industrial revolution up until 30 to 40 years ago involved a worker starting in an entry-level position and progressing up the corporate ladder within the same organization until retirement. The traditional career path thus gave the majority of the delegating power over the worker's career to the organization (Whyte, 1956). However, during the seventies and eighties, the standard of life-long employment and allegiance to one organization evolved into a framework where the employee took ownership of their own career path, moving from organization to organization in order to create better opportunities for advancement (Baruch, 2004; Hall, 2004). Workers taking control of their own careers and the increasing costs of worker benefits have given rise to the use of contingent workers, where workers have even more control over their careers by performing temporary work on a contractual basis with different organizations rather than remaining devoted to a single organization (Connelly & Gallagher, 2004).

The latest evolution in this career progression is *crowdsourcing* (Howe, 2008). In crowdsourcing, a task is commonly offered in an online marketplace to a pool of workers. Each worker within the pool decides if he/she would like to perform the task for the wage offered. The worker accepting the assignment will then have a certain pre-established period of time to complete the task before it is offered back up to the pool. A worker within the world of crowdsourcing is able to contract with each employer for the duration of just one task. When the task is complete, the worker is compensated and the relationship is ended.

One of the online marketplaces where crowdsourcing is found is Amazon's Mechanical Turk. The website offers an online workforce where employers can post tasks that a crowdsourcing worker can choose from to complete (Goodman, Cryder, & Cheema, 2013). The majority of tasks completed on the site only pay a small amount, which is valuable to organizations looking for an opportunity to have tasks completed at a minimal cost. This website provides a great example of how crowdsourcing is beneficial to both the employee and employer. Crowdsourcing gives the worker complete autonomy, with the worker deciding to accept as many tasks as he/she wants to complete and at the time of day that he/she wants to complete them. Further, with online

crowdsourcing, neither the worker nor the hiring agent is constrained geographically. The tasks reside online, so they can be accessed by anyone with an Internet connection. The purpose of this study is to investigate the workers that perform crowdsourcing tasks in order to identify who they are, where they reside, and their motivations for working in the crowdsourcing system. By doing so, a more complete image of these workers' careers can be formulated and compared with current perceptions of traditional careers, protean careers, contingent workers, and outsourcing.

Traditional vs. Protean Careers

As mentioned earlier, traditional career paths involved individuals staying with the same organization throughout their entire careers. Organizations were in control of their employees' training, development, and career progression (Whyte, 1956). With the average worker now holding 10-11 jobs before the end of their career (US BLS, 2010), traditional career paths are becoming obsolete. The new norm is to have a career that is controlled by the individual and progresses through many different organizations (Mahony, Klimchak, & Morrell, 2012; O'Mahony & Bechky, 2006). Hall (1996) uses the term *protean* (named after the shape-shifting Greek god Proteus) to describe this new type of career progression. Direnzo and Greenhaus (2011) propose that individuals are going through a perceptual state of job search and comparison activities. If there is a feeling of discrepancy between current and desired employability, then the individual will act to correct this dissonance, particularly if they are of the protean career mindset.

Contingent Workers

The contingent worker has a protean career mindset and uses it to progress through many different organizations over the course of a year. Contingent workers normally work through a temporary agency, which makes it even more difficult to find where their allegiance lies (Gallagher & Parks, 2001). However, contingent workers can be very appealing to an organization due to the diminished legal risks that are associated with employees and because contingent workers typically cost a company less money, because health benefits do not have to be provided. Benefit packages alone can cost a company an exponentially large amount of money and has risen over the years to account for the highest nonwage part of labour costs (Ghio, 2002). With contingent workers, companies also do not have to be concerned about talent management and employee career development that are important practices for employee retention of traditional employees (Narayanan, 2016).

Crowdsourcing is appealing to contingent workers because they are typically working from home and as an independent contractor. Similar to an independent contractor, the crowdsourcing worker can jump from task to task through multiple organizations from anywhere in the world through the course of a given day. An employer can make distinctions between employees and independent contractors by assuring that the employer's organization is not the only client of that employee by requiring other proof of work and by making distinctions between the types of jobs completed by crowdsourcing workers and full-time employees (Klein, 1996). Ensuring a distinction by requiring proof of work is visible in a data collection study on Amazon's Mechanical Turk that only allowed participants with a 95% worker approval from previous completed jobs on the site (Goodman, Cryder, & Cheema, 2013). Mechanical Turk offers the worker approval system as a tool for employers to assure that they are receiving quality completions of tasks.

Crowdsourcing

Shukla and Singh (2015) discusses management attitude and motivations as two of the factors influencing innovation in organizations. Online crowdsourcing is an innovative system utilized by organizations whose leadership most likely is progressive and open to new experiences. Online crowdsourcing allows thousands of anonymous workers to be paid for completing various kinds of tasks over the Internet (Howe, 2008). This system allows parties that need tasks completed to quickly and easily distribute the tasks to a wide network of potential workers. Anyone that has a task that needs to be completed is called a *requester*. Requesters post tasks via Amazon Mechanical Turk, or other crowdsourcing intermediaries, that collects a small fee for maintaining the crowdsourcing market (normally $.01 to $.05). These tasks, called HITs (or Human Intelligence Tasks), are processed by members of the crowd (called workers). These tasks are paid from as little as $.01 to a few dollars depending on the difficulty and involvement of the task. The system launched in 2005, and Amazon.com reports that the system now has registered more than 500,000 workers from over 190 countries and more than 200,000 tasks to work at any given time (AWS, 2011). Amazon's system is only one of dozens of such crowdsourcing websites that collectively attract over a million workers to the Internet in search of tasks (Lynch, 2012).

Changing Demographics

There have been several studies on demographics of workers participating in crowdsourcing activities on the Amazon

Mechanical Turk website. One early study by Ipeirotis (2008) was performed prior to a relatively important policy change with the website. During the earlier years of Mechanical Turk, workers could only receive payment in U.S. dollars to a bank account located in the United States while workers residing outside of the United States had to choose to accept payment in the form of Amazon gift certificates, which greatly limited how the money earned in these activities was going to be spent. Thus, the results of this early study found more than 76% of the workers were from the United States and only 8% were from India. However, once Mechanical Turk added the ability to be paid in Indian rupees, the demographics of the average worker began to change. A subsequent study by Ross, Zaldivar, Irani, and Tomlinson (2010) found 57% of Mechanical Turk workers were from the United States and 32% were from India, while the remaining respondents were from countries ranging from Australia to Ukraine. Another study by Ipeirotis (2010) found only 47% of the workers were from the United States versus 34% from India. With the recent proliferation of access to personal information technology in India (Misquitta, 2009), this increasing trend of Mechanical Turk workers from India should continue.

Reasons for Participation

Kaufmann, Schulze, & Veit (2011) examined the motivational factors influencing task participation in online crowdsourcing on Mechanical Turk. After surveying a sample of workers, 47.6% from the United States and 38.5% from India, they found that while the workers had both intrinsic and extrinsic motivation towards working in a crowdsourcing environment, extrinsic motivation based on pay was the most prevalent. Ipeirotis (2010) compared the motivational reasons for participating as a worker on Mechanical Turk between Indian workers and U.S. workers. More workers from the United States cited their reasons for completing tasks as being fun and a way to 'kill time' (intrinsic motivation), whereas more workers from India cited that their main reason for participating was that it was a primary source of income (extrinsic motivation). This study will further examine the reasons why workers participate in crowdsourcing and compare Indian workers with their counterparts in the United States.

Method

Sample and Procedure

In order to understand the anonymous population of crowdsourcing workers, our survey was delivered using four independent HITs on the Amazon Mechanical Turk website. Since the study was geared towards understanding the general population of crowdsourcing workers, no restrictions were placed on the type of worker that could accept the HIT. Each HIT was made available on Mechanical Turk during four different time periods as well as different days of the week. The first HIT was offered at 2:30 AM Greenwich Mean Time (GMT), 8:30 AM GMT, 2:30 PM GMT, and 8:30 PM GMT. Workers were paid $0.10 for their fully completed survey. Respondents were asked to provide their worker ID at the end of the survey of which all answered questions were required prior to payment. The list of worker IDs were then cross referenced with the completed tasks on Mechanical Turk and paid accordingly. All HITs had a limit of 100 accepted completions; however, some time slots had more than 100 respondents and others had less after adjusting for incomplete surveys; therefore, we received 404 completed surveys.

Measures

Several measures were derived from a previous study by Ross et al. (2010). By using the same scales and weightings, changing trends between previous results and the current study can more easily be recognized. The survey measured the amount of time spent participating in crowdsourcing activities each week, earnings per week, and perceptions of the relative importance of money earned in online crowdsourcing activities. Additionally, we measured basic demographic variables including country of origin, age, sex, education, and income.

Crowdsourcing Hours: This item had six categorical responses ranging from (1) "less than 1 hour per week" to (6) "30+ hours per week."

Crowdsourcing Income: This item had eight categorical responses ranging from (1) "less than $0.25 per week" to (8) "greater than $50.00 per week."

Importance of Crowdsourcing Income: This item had five categorical responses ranging from (1) "Amazon Mechanical Turk money is irrelevant to me" to (5) "Amazon Mechanical Turk money is always necessary to make basic ends meet."

Results

Means, standard deviations, and correlations for each of the variables in this study are included in Table 1.

Table 1: Descriptive Statistics and Correlations

Variable	Mean	s.d.	1	2	3	4	5	6	7
Country[a]	1.65	.48							
Age	30.06	7.47	-.19						
Sex[b]	2.61	.96	.08	.32**					
Education	3.97	1.11	-.08	.45**	.20				
Annual Income	5.29	5.35	-.12	.64**	.09	.31**			
Crowdsourcing Hours	3.22	.79	-.01	.11	.12	.16	.00		
Crowdsourcing Income	3.13	.85	-.14	.02	-.14	-.15	.22	-.04	
Importance of Crowdsourcing Income	6.60	1.82	.04	.00	-.03	.20	.06	.26*	-.02

* $p < .05$, ** $p < .01$

[a] Country was coded 1=US, 2=India

[b] Sex was coded 1=Male, 2=Female

Based on our results, 61.5% of the respondents were from India while 33.5% were from the United States. Another 5.2% were from 15 other countries including Canada, Mexico, Romania, China, and Bangladesh. These results represent a shift in nationality towards Indian workers compared to previous studies (Ipeirotis, 2008, 2010; Kaufmann et al., 2011; Ross et al., 2010). As with the previous studies (and due to the current payment system of Mechanical Turk paying in only U.S. dollars and Indian rupees), the United States and Indian workers accounted for the majority (94.8%) of all workers. With the differences in culture between these two countries (e.g. Miller, Bersoff, & Harwood, 1990; Savani, Markus, Naidu, Kumar, & Berlia, 2010), it appears necessary to further explore the differences in demographics and attitudes between these sets of workers. Means and standard deviations of US versus Indian workers are shown in Table 2.

Table 2: Descriptive Statistics by Country

	US		India	
Variable	Mean	s.d.	Mean	s.d.
Age	30.18	7.47	30.00	7.62
Sex[a]	1.40	.49	1.42	.49
Education	4.30	.95	4.92	1.07
Annual Income	3.61	2.56	2.17	1.67
Crowdsourcing Hours	3.31	1.32	3.73	1.50
Crowdsourcing Income	5.69	1.81	3.94	1.40
Importance of Crowdsourcing Income	3.10	1.00	3.59	1.16

[a] Sex was coded 1=Male, 2=Female

Demographics: Males (59%) were the majority of respondents. When comparing the gender of the United States to India, the proportions were identical. Respondents in both countries reported an average age of 30 years old with the majority being 25-30 years of age. When comparing India and the United States, the percentage by age group varies slightly with India having the majority of respondents between 25 and 30 years old (37%) while the United States majority were 18-24 years old (34%). More than half of the respondents have a college or advanced degree (59%). 36% of respondents from India had a post-graduate degree compared to only 9% of respondents in the United States. India had the highest amount of respondents with a college degree or post-graduate degree with 69% while the United States had 42%.

More respondents reported income of less than $10,000 per year (42%) compared to other income categories. When separated by country, only 28% of workers from the United States reported annual income of less than $10,000, compared to 50% of workers from India reporting the same. 31% of US workers reported making over $40,000 a year compared to only 8% of Indian workers. Ross et al. (2010) found that only 27% of respondents made less than $10,000 per year. Our results show a significant increase in workers that make less than $10,000 per year. This notable increase

in workers making less money per year can be explained by the shift in nationality from the amount of United States respondents to Indian respondents when comparing our results to Ross et al. (2010).

Crowdsourcing Hours: When asked how about time spent weekly on Amazon Mechanical Turk, the largest percentage of any of the item choices (27%) reported that they spent 1 to 5 hours per week doing tasks on the crowdsourcing website. However, 21% of US respondents and 33% of Indian respondents reported they spent more than 15 hours per week participating in jobs on the website with 8% of US respondents and 18% of Indian respondents reporting 30+ hours per week. This could represent the work-life balance that Indians want on their jobs (Rai, 2014) and millennials in particular, feel is lacking in their organizations (Daipuria & Kakar, 2013). The hours spent crowdsourcing by country are shown in Table 3.

Table 3: Hours Spent Crowdsourcing by Country

Hours per week	US	India
< 1 hour	1.5%	3.2%
1 – 5 hours	33.3%	23.1%
5 – 10 hours	27.4%	22.3%
10 – 15 hours	16.3%	18.6%
15 – 30 hours	13.3%	14.6%
30+ hours	8.1%	18.2%

Crowdsourcing Income: Out of the eight possible categories for weekly crowdsourcing income, the largest category (26%) of survey respondents reported earning $1.00 to $5.00 per week crowdsourcing. However, the respondents from the US reported earning considerably more money per week with 21% earning over $50.00 per week while only 2% of Indian workers reported earning the same amount. These results are shown in Table 4. Based on previous studies by Ross et al. (2010), the amount of money reportedly being earned has increased per week from 37% of respondents making greater than $5.00 per week compared to the present study where over 65% of respondents reported earning greater than $5.00. This change in the amount of money made per week may be due to the increased use of Mechanical Turk and the greater availability of tasks with larger payouts.

Table 4: Crowdsourcing Earnings by Country

Weekly Earnings	US	India
< $0.25		2.4%
$0.25 - $1.00	3.0%	7.7%
$1.00 - $5.00	12.6%	33.2%
$5.00 - $10.00	14.1%	26.7%
$10.00 - $20.00	15.6%	18.2%
$20.00 - $25.00	13.3%	5.3%
$25.00 - $50.00	20.7%	4.9%
> $50.00	20.7%	1.6%

Importance of Crowdsourcing Income: When asked about the relative importance of money earned through the Amazon Mechanical Turk website, the most popular answer was that it is "a way for me to pay some nice extras" (36%). However, 41% of the respondents reported that the money was sometimes (16%) or always (25%) necessary to make ends meet. In fact, Mechanical Turk money being used to sometimes and always make ends meet has increased from 18% in Ross et al.'s (2010) study to 41% in the current study. When comparing India to the United States, 49% of Indian respondents rely on Mechanical Turk money to sometimes or always make basic ends meet versus 28% for US respondents. These results are shown in Table 5 and Fig. 1.

Table 5: Importance of Crowdsourcing Income by Country

Relative importance	US	India
Irrelevant to me	0.7%	2.0%
Nice, but does not materially change my circumstances	29.6%	17.0%
A way for me to pay for nice extras	41.5%	32.4%
Sometimes necessary to make basic ends meet	14.8%	17.0%
Always necessary to make basic ends meet	13.3%	31.6%

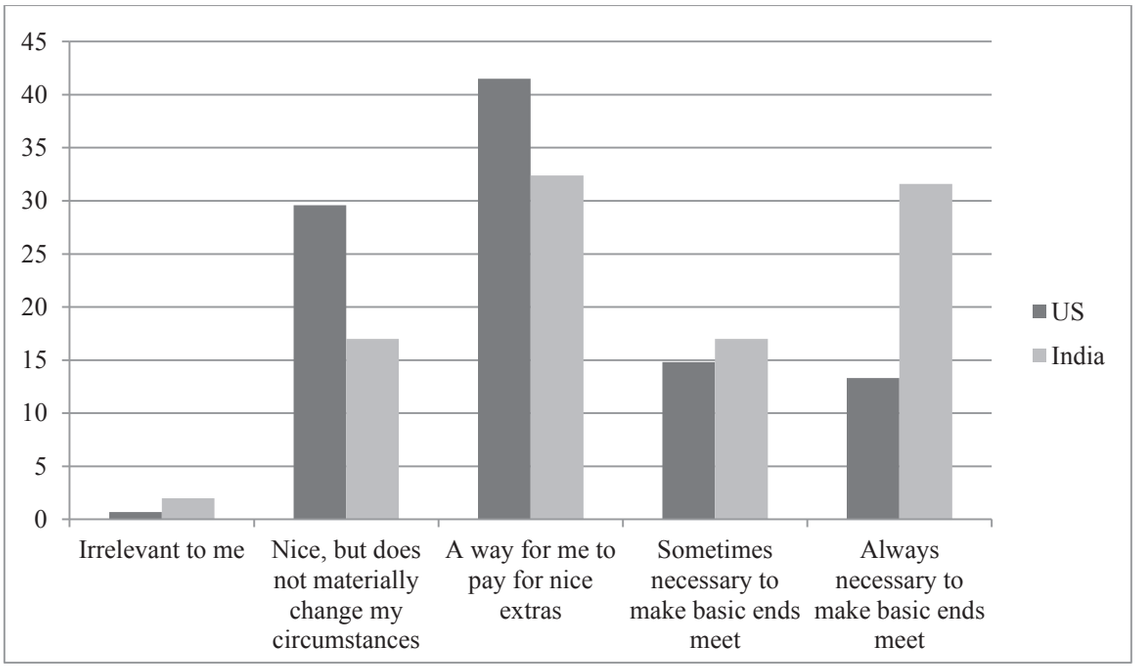

Fig. 1: Relative Importance of Crowdsourcing Income by Country

Discussion

Baruch (2006) outlines several historical shifts in employees and organizations from pre-industrial revolution agricultural work to production work of the industrial revolution to a shift to the services industry in the late 20th century to the knowledge workers of today. Baruch (2004) proposes that where the industrial revolution put much of the responsibility for career management and the fates of the individual employees in hands of the organizations, today's knowledge workers reflect a more protean approach to career management where employees control their own careers and movement more between rather than only within organizations.

The results of the current study may indicate what the careers of some future knowledge worker might look like. Early research on telework (telecommuting) touted the many benefits of people working on knowledge-based activities from home, but warned of the consequences that social isolation could have on employees (Di Martino & Wirth, 1990; Frolick, Wilkes, & Urwiler, 1993). Through recent advances in social networking (Facebook, Twitter, Skype), employees with a desire for social interaction may feel less isolated (Kane, Robinson-Combre, & Berge, 2010).

When Agarwala (2008) examined the preferences and career choices of MBA students in India, significantly more students in his sample actually preferred a protean career approach versus a traditional approach. This, coupled with the current wage rate in India, might explain some of the results from the current study. We found Indian respondents to have more hours per week working online in crowdsourcing activities with 18% of our Indian respondents working 30 or more hours online. What is interesting about this is that only 12% of our Indian respondents earned more than $20.00 per week. However, since the average Indian citizen lives on less than $60.00 per month (MSPI, 2012), $15.00 to $20.00 per week would seem more like a full-time wage then it would in the United States.

Nirmala and Uma Devi (2015) concluded in a comparative study of knowledge-intensive companies in India and other foreign countries, that there are significant differences in their human resource practices. We also noticed differences about the importance of money earned through crowdsourcing between the US and Indian respondents. While nearly half of respondents from India indicated that the money earned from the activities was either sometimes or always necessary to make basic ends meet, a little more than a quarter of US respondents held the same attitudes towards the earnings. This was a noticeable increase from the results of a previous study that found only 18% of all respondents reported the earnings were sometimes or always necessary (Ross et al., 2010). This may be due to individuals realizing that crowdsourcing may be a viable alternative to full-time employment. Moreover, while the results of the current study were based on the crowdsourcing website Amazon

Mechanical Turk, there are many more similar sites, which may provide more of a "career alternative" type of income for a broader range of people aside from low income earners. Freelancer and Elance are both crowdsourcing websites that are aimed at professionals, especially with programming knowledge, where some workers earn thousands per month participating in crowdsourcing activities (Lynch, 2012).

The aforementioned increases in the prevalence of knowledge workers (Baruch, 2006), and organizational trends towards outsourcing (Davis-Blake & Broschak, 2009), coupled with changing employee attitudes towards boundary-less and protean careers (Briscoe & Finkelstein, 2009; Direnzo & Greenhaus, 2011), hint at a future where an individual's career path may look nothing like the traditional career path of allegiance to one organization at a time. It may more closely resemble a results only, pay by task environment more similar to a day labourer, with the flexibility to work when and where the worker wants.

This shift may already becoming more of a reality for workers in emerging markets, where the standard of living is lower and money earned through online activities can be realized as a viable alternative to replacing the money earned through full-time traditional work arrangements. The results of this study indicate the differences in behaviours and viewpoints between workers in an emerging economy and those in a mature market economy. While the results of this study were a bit constrained due to Amazon Mechanical Turk's payment structure allowing primarily American and Indian workers, more study needs to examine other similar websites, such as Zhubajie (which reports having 7.6 million workers online) and Freelancer (which reports having 6.5 million workers) among dozens of other successful crowdsourcing sites in operation (Lynch, 2012).

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