Attitudes Toward And Experiences of Digital Labour by Current and Potential Crowdworkers: A South African Perspective

by Cuthbert Chidoori CHDCUT001

Plagiarism Declaration

1. I know that plagiarism is wrong. Plagiarism is to use another's work and pretend that it is one's own.
2. I have used the APA 6th convention for citation and referencing. Each contribution to, and quotation in, this publication **Final Thesis** from the work(s) of other people has been attributed, and has been cited and referenced.
3. This publication **Final Thesis** is my own work.
4. I have not allowed, and will not allow, anyone to copy my work with the intention of passing it off as his or her own work."
5. I acknowledge that copying someone else's assignment or essay, or part of it, is wrong, and declare that this is our own work.
6. I have not falsified or manufactured any data, and declare that all data was ethically collected.

Signature: Signed by candidate

Full Names of Student: **Cuthbert Chidoori**

(INFORMATION WAS TAKEN FROM PREVIOUS ASSIGNMENTS I.E. LITERATURE REVIEW, HIGH-LEVEL PROPOSAL, RESEARCH DESIGN)

Table of Contents

Abstract 1

1. Introduction 2

1.1 Problem Statement 4

1.2 Research Questions 5

1.3 Research Objectives 5

1.4 Research Plan 6

1.5 Scope and Limitations 6

1.6 Contribution of the Study 7

1.7 Thesis Structure 7

2. Literature Review 8

2.1 Challenges in Developing Countries 8

2.1.1 Infrastructure/Mobile Technology 8

2.1.2 Government Policy and Service 9

2.1.3 ICT Skills 9

2.2 Digital Labour Initiatives 10

2.2.1 Crowdsourcing 10

2.2.2 Teleconsulting 12

2.2.3 Impact Sourcing 13

2.2.4 Outsourcing 13

2.3 Issues and Challenges with Digital Labour 14

2.3.1 Exclusion 14

2.3.2 Re-intermediation 14

2.3.3 Exploitation 14

2.3.4 Lack of Bargaining Power 14

2.4 Literature Research Gap 15

2.5 Literature Review Summary 16

3. Proposed Theoretical Framework 17

3.1 Self-Determination Theory (SDT) 17

3.2 Proposed Digital Labour Framework 18

3.3 Summary 19

4. Research Methodology 20

4.1 Philosophical Considerations 20
4.2 Theory Approach and Purpose 20
4.3 Pretest and Pilot Study 20
4.4 Sampling Frame 21
4.5 Research Propositions (Quantitative Analysis) 22
4.6 Mixed-Methods Approach 23
4.7 Resources and Plan 24
4.8 Confidentiality and Ethics Approval 25
4.9 Summary 26
5. Data Analysis and Findings 27
5.1 Quantitative Data Analysis 27
5.1.1 Demographics Charts and Statistics 27
5.1.2 Descriptive Statistics for Digital Labour Constructs 32
5.1.3 Reliability Analysis 37
5.1.4 Factor Analysis 39
5.1.5 Correlation and Regression Analysis 45
5.2 Qualitative Data Analysis 58
5.2.1 Fair Compensation 60
5.2.2 Digital Skill 61
5.2.3 Internet Cost and Access 62
5.2.4 Digital Platform Type 63
5.2.5 Networking 64
5.2.6 Work Opportunities 65
5.2.7 Use of Technologies 66
5.2.8 Work Conditions 67
5.3 Discussion and Interpretation 68
5.3.1 Barriers 68
5.3.2 Initial Expectations 69
5.3.3 Attitudes 70
5.3.4 Intention to Participate in Digital Labour 70
5.3.5 Initial Participation 71
5.3.6 Experience 72

5.3.7 Continued Participation 75
5.4 Summary of Findings 76
6. Conclusion 77
6.1 Research Question One 77
6.2 Research Question Two 78
6.3 Research Question Three 78
6.4 Research Question Four 78
6.5 Contributions of Research 79
6.6 Research Limitations 79
6.7 Recommendations for Future Research 79
7. References 81
8. Appendices: 90
8.1 Appendix A: Research Instruments 90
Questionnaire 90
Consent Letter 112
8.2 Appendix B: Supporting Quantitative Analysis Results 113
Normality Tests 113
Correlation Analysis Tables 114
Stepwise Regression Tables 120
Variables' Defintions and Descriptions 124
8.3 Appendix C: Supporting Qualitative Analysis Snapshots and Results 128
Thematic Analysis Tables 129

List of Figures

Figure 1 Digital Labour Theoretical Framework 4
Figure 2 Bar Chart Showing Respondents' Ages 28
Figure 3 Gender Pie Chart 28
Figure 4 Education Pie Chart 29
Figure 5 Internet Device Ownership 30
Figure 6 Crowdsourcing Experience Bar Graph 30
Figure 7 Normal Graph for Average Attitudes Proposition 2 Variable 113
Figure 8 Normal Graph for Average Expectations Proposition 7 114
Figure 9 Emergent Themes Snapshot 128
Figure 10 Coding Process Snapshot 129
Figure 11 Snapshot of Codes with Themes 129

List of Tables

Table 1 Research Timeline 25
Table 2 Descriptive Statistics for Demographic Variables 31
Table 3 Descriptive Statistics for Initial Expectations 32
Table 4 Descriptive Statistics for Experiential Expectations 34
Table 5 Descriptive Statistics for Barriers Construct 35
Table 6 Description Statistics for Attitudes and Participation Variables 36
Table 7 Reliability Analysis Statistics for Initial Expectations 37
Table 8 Item Analysis Statistics for Experiential Expectations 38
Table 9 Item Analysis Statistics for Barriers Construct 38
Table 10 Item Analysis Statistics for Attitudes Construct 39
Table 11 Factor Analysis Table for Initial Expectations 40
Table 12 Factor Analysis table for Experiential Expectations 41
Table 13 Factor Analysis Table for Barriers 42
Table 14 Factor Analysis Table for Attitudes 43
Table 15 Correlation Table for Attitudes and Barriers 46
Table 16 Regression Model Table for Attitudes and Barriers 46
Table 17 Correlation Analysis Table Initial Expectations and Average Attitude Variable 47
Table 18 Regression Model for Attitude and Initial Expectations 48
Table 19 Correlation Analysis for Crowdworkers' Attitudes Average 49
Table 20 Regression Model for Attitudes and Experiential Expectations 49
Table 21 Correlation Analysis Table for Participation Intention and Attitudes 50
Table 22 Regression Model for Attitudes and Participation Intention 51
Table 23 Correlation Analysis Table for Attitudes, Participation Intention and Initial Participation 52
Table 24 Regression Model for Initial Participation and Attitudes 52
Table 25 Regression Model for Initial Participation and Participation Intention 53
Table 26 Regression Model for Initial Participation, Participation Intention and Attitudes 53
Table 27 Correlation Analysis Table for Experiential Expectations Average and Initial Participation 54
Table 28 Regression Model Table Average Experiential Expectation and Initial Participation 55
Table 29 Correlation Analysis Table for Experiential Expectations and Continued Participation 56
Table 30 Regression Model for Continued Participation and Experiential Expectations 56
Table 31 Regression Model for Continued Participation, Initial participation and experiential expectations 57
Table 32 Regression Analysis Tests for Propositions 58
Table 33 Fair Compensation Responses 60
Table 34 Digital Skill Responses 61
Table 35 Internet Cost and Access Responses 62
Table 36 Digital Platform Type responses 63

Table 37 Networking Opportunities Responses 64
Table 38 Work Opportunities Responses 65
Table 39 Use of Technologies Responses 66
Table 40 Work Conditions Responses 67
Table 41 Descriptive Statistics for Proposition Dependent Variables 113
Table 42 Correlation Analysis Table for Initial Expectations and Attitudes 114
Table 43 Correlation Analysis for Non-Crowdworkers' Attitudes 115
Table 44 Correlation Analysis Table for Attitudes and Initial Expectations 115
Table 45 Correlation Analysis Table for Attitudes All Respondents part 1 116
Table 46 Correlation Analysis Table for Attitudes All Respondents part 2 117
Table 47 Correlation Analysis Table for Attitudes All Respondents part 3 118
Table 48 Correlation Analysis for Crowdworkers' Attitudes and Expectations 119
Table 49 Stepwise Regression Table Participationintention and Attitudes 120
Table 50 Stepwise Regression Table for InitialParticipation and Attitudes 120
Table 51 Stepwise Regression Table for InitialParticipation, ParticipationIntention and Attitudes 121
Table 52 Stepwise Regression Table for ContinuedParticipation and Experiential Expectations 122
Table 53 Stepwise Regression Table for ContinuedParticipation, InitialParticipation and Experiential Expectations 123
Table 54 Quantitative Data Variables Table for Names and Meanings 124
Table 55 Fair Compensation All Responses 129
Table 56 Digital Skills All Responses 131
Table 57 Internet Costs and Access All Responses 133
Table 58 Work Opportunities All Responses 134
Table 59 Digital Platform Type All Responses 136
Table 60 Networking All Reponses 138
Table 61 Use of Technologies All Responses 139
Table 62 Work Conditions All Responses 140

Abstract

Digital labour is the creation of new products and services through mainly various digital media forms in exchange for a form of remuneration. Digital labour addresses some of their critical issues in South Africa, such as high unemployment, low income and others. Digital labour initiatives, particularly crowdsourcing and others are thought to provide essential benefits such as flexible working times and skills development. However, digital labour can also bring about drawbacks such as the exploitation of workers and low remuneration. The main purpose of this research is to investigate the attitudes toward and experiences of digital labour in South Africa, with a primary focus on crowdworkers in South Africa. A framework built from certain concepts described in the literature review would be used to guide the research. The main research questions would be concerned investigating how the attitudes and experiences affect the intention to participate, the initial and the continued participation in digital labour. The research data were obtained by conducting an online survey amongst 70 participants who would either be potential or current crowdworkers. The research data were analysed using a mixed methods approach, with quantitative and qualitative analysis techniques being used.

From the research data collected, some notable findings that unearthed critical digital labour insights included the relationship between the attitude of personal information security and the initial participation in digital labour. This relationship was found to be considerably significant. Also, the relationship between the barrier of internet access cost and the actual participation in digital labour was not significant which was unexpected in a developing country context. The experiential expectations around a living wage and sharing of knowledge notably had the strongest relationship with the continued participation in digital labour of all the experience aspects. However some survey respondents, according to the qualitative responses, noted that the digital labour wages earned were very little compared to the abundant amount of work they would have to produce and therefore felt they were being exploited in their digital jobs. Other aspects such as client networking opportunities, digital skills and work opportunities had a considerable impact on digital labour experiences for digital workers in South Africa.

Some major limitations that impacted the research included limited funding to meet the survey respondents' remuneration demands and difficulty in contacting respondents on crowdsourcing sites. The research yields a valuable contribution to the research community by identifying key theories that affect participation in digital labour. Also, by examining the workers' experiences and motivations, the research could provide critical insights for policymakers, platform owners and crowdworkers to utilise for making business decisions. Considerations for future research could be further explored around this research such as exploring the impact of social security for workers in digital labour to ensure fair work conditions and analysing aspects of digital labour more specifically for impoverished and rural communities.

1. Introduction

When examining digital labour, the phenomena of digital work and digital labour encompass many of the activities associated with Information and Communication Technologies (ICT) and conducted on the global internet (Fuchs, 2014; Fuchs & Sevignani, 2013). Digital work was described by Fuchs and Sevignani (2013) as the creation of new products and services through the use of the human mind, speech and various forms of digital media. Also, Fuchs (2014) mentioned that digital labour includes various forms of digital work that is both paid and unpaid that necessary for the consumption, production and the use of digital media. Digital labour activities such as software engineering, social networking, browsing of data and many others can contribute to the technological and economic growth/development of emerging economies (Fuchs & Sevignani, 2013).

African countries tend to trail behind the rest of the world in terms of economic and technological developments and often experience major challenges such as high unemployment (Mtsweni & Burge, 2014). For instance, many African countries including South Africa often register unemployment rates ranging between 10% and 27% or higher (World Bank, 2018). ILO (2019) recorded for South Africa a national unemployment rate of 28.5%. Unemployment levels in South Africa may be caused by certain factors such as lack of means to pursue job opportunities, lack of readiness (skillset) required for potential jobs and lack of education or knowledge (Dalberg, 2016). Drivers of economic growth such as small and medium enterprises (SMEs) in Africa contribute notably to reducing unemployment notably through hiring people with disadvantaged backgrounds, disabilities, through the use of ICT (Okewu, 2015; Asongu, Biekpe & Tchamyou, 2019).

There are major barriers that often inhibit economic and technological developments in African developing countries such as a lack of development of the infrastructure necessary for telecommunications, and overall Information and Communication Technology adoption (Mbuyisa & Leonard, 2015). In developing countries, there are often additional technological infrastructure issues such as lack of smartphones, personal computers and poor or expensive internet connectivity (Mtsweni & Burge, 2014). Although there has been some widespread use of mobile technologies, particularly in South Africa, there are fears that mobile technologies may not contribute sufficiently to the development of impoverished and rural communities due to the lack of ICT infrastructure, and therefore lead to the further increase in the digital divide (Bimbe et al., 2015).

Moreover, there is a lack of properly designed policies to enable the wide, affordable distribution and efficient use of Information and Communication Technologies in African countries and address challenges such as unemployment, economic inequality, and low financial development (Mbuyisa & Leonard, 2015; Tchamyou, Erreygers & Cassimon, 2019). Butt (2015) explained that telecommunications government policies in certain parts of Africa have a significant impact on how people can use their mobile phones for information-sharing and social networking which are both useful for business activities such as herding. Appropriate policies regarding ICT investment, development of skilled labour and foreign-trade imports are often lacking in African countries (Cirera, Lage & Sabetti, 2016).

With all the challenges that affect development in African countries, digital labour activities such as crowdsourcing tend to be beneficial as they harness the skills of multiple workers or crowdworkers on online platforms for organisations to be more productive in their processes (Mtsweni et al., 2016). Through crowdsourcing initiatives such as microwork, multiple workers can be assigned with different small tasks on a common online platform according to workers' skill levels, thus more employment opportunities can be provided for more workers (Mtsweni et al., 2016; Onkokame, Schoentgen & Gillwald, 2018). However, with all the issues in developing countries that digital labour activities can address and mitigate, there are certain significant drawbacks which can be experienced by people who participate in digital work. For example, digital workers can be barred from entering certain digital labour markets based on economic status, nationality or religion. Also, workers can be prevented from accessing knowledge about business processes and developing their skills, and digital workers who reach significant success exploit other workers with lower skills (Graham et al., 2017; Mtsweni & Burge 2014).

The main purpose of this research is to investigate the attitudes toward and experiences of digital workers by primarily exploring and analysing the experiences of South African crowdworkers around digital labour. As there are a limited but growing number of studies that examine the technology practices such as crowdsourcing in depth, the research aims to make a further contribution to the body of literature in this regard (Sassetti, 2019). Various literature sources were analysed to explain the economic and technological issues in African countries, the digital labour activities and key challenges that would affect digital workers in South Africa. The research explored various digital labour aspects which would relate to the attitudes and experiences of digital workers, and that affect the intention to participate, the actual and continued participation in digital labour as described in the framework in figure 1a. The analysis of these digital labour aspects for this research would uncover rich, critical insights that could serve as a valuable contribution to the research community, as well as policymakers, platform owners and crowdworkers.

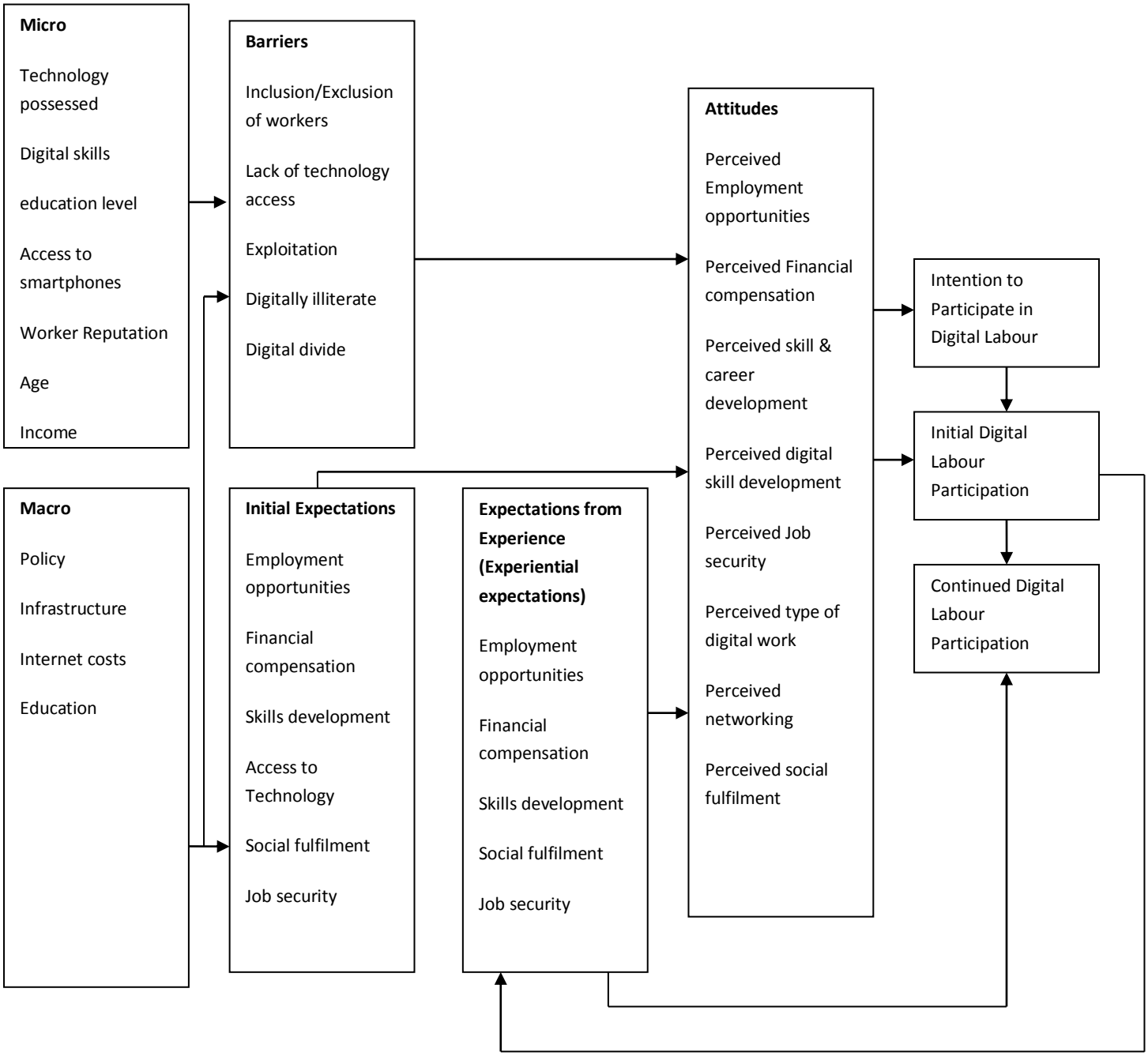

Figure 1 Digital Labour Theoretical Framework

1.1 Problem Statement

There exists a research gap in literature for the clear analysis of the experiences, as well as the attitudes of people toward participating in digital labour practices as a whole within the context of developing countries. Even though there are a growing number of literature studies that aim to address this research gap, many of the studies examine attitudes only toward specific technology practices, such as crowdsourcing or microwork (Sassetti, 2019). Also according to Rahi and Ghani

(2019), there were only a few studies that examined the continued or sustained use of technology in regions of Africa or South Africa, which is significantly explored in this research. This research on digital labour aims to analyse the attitudes and experiences of people participating in digital labour practices through focusing on crowdsourcing platforms that support primarily digital activities such as blogging, photo-editing and various others.

1.2 Research Questions

With regards to research questions, the main research question that is investigated in this research is: ”What is the relationship between the digital labour attitudes and the intention of people to participate in digital labour?”. It is vital to investigate attitudes of digital labourers towards digital labour as literature sources explain issues around digital labour such as how digital workers can be exploited by online employers through being made to work for free or low payment or digital workers having their private information intercepted and used fraudulently, to mention a few issues. Some additional research questions to be addressed in this research are:

- What is the relationship between the digital labour attitudes with people's initial participation or experience of digital labour?
- How are people’s views of digital labour affected by their experience of digital labour?
- What would be the relationship between people’s initial participation in or past experience with digital labour and the continuation of people in digital labour practices?

1.3 Research Objectives

The objectives around the main research questions would be concerned with different aspects around digital labour such as workers' initial expectations, digital labour barriers and workers’ experience and how they may affect attitudes of digital workers towards digital labour. The relationship between these major aspects is illustrated in the Digital Labour Framework which is proposed later in the research based on the literature review and the Self-Determination Theory (Figure 1a). The objectives that would be achieved for the research are described below:

- To explore the influence of the barriers on the attitudes toward digital labour. This objective was included to investigate the effect of the digital labour barriers on the attitudes and hence on the relationships investigated in the first and second research questions involving the attitudes.
- To explore the influence of the initial expectations on the attitudes toward digital labour. It was important to investigate the effect of the initial expectations on the attitudes, which could consequently affect the relationships examined in the first and second research questions.
- To explore the influence of the experiential expectations on the attitudes toward digital labour. The importance of this objective was that the relationships being investigated in the research questions and involving the digital labour attitudes could be potentially influenced by the experiential expectations.
- To determine the relationship between the attitudes and the intention to participate in digital labour.

- To determine the relationship between the attitudes and the actual participation in digital labour
- To determine how the key aspects of digital labour experience affect people's views around digital labour.
- To determine the relationship between the experiential expectations and the continued participation in digital labour

1.4 Research Plan

For conducting the research, the ontological view adopted was primarily objectivist, while the epistemological consideration was mainly positivist. The approach to theory utilised was an abductive, as this research involved the use of the Figure 1a theoretical framework which described theories that would be validated, along with open-ended views that would contradict or add new knowledge to the framework. The research purpose would largely be descriptive. An online survey with likert-scale and open-ended questions was used for gathering data from a sample of 70 respondents. The respondents would consist of people who had basic digital skills and may or may not have participated in crowdsourcing platforms. The respondents were provided with a remuneration of R50 for participating in the survey. For ethical considerations, ethics clearance was obtained from the UCT Ethics Department using a commerce ethics form. The research was conducted within a South African context, for any individual for the survey who had basic digital skills and who had or had not participated in crowdsourcing platforms.

The survey data collected was then analysed using mixed methods, with focus mainly being on the quantitative data analysis. The likert-scale questions in the survey were primarily analysed using quantitative analysis techniques. These techniques used were Cronbach Alpha for Descriptive Statistics, Reliability Analysis, Exploratory Factor Analysis, Spearman Rank Correlation and Regression Analysis to validate the relationships between the main theories described in the Figure 1a framework and the research questions. The open-ended questions were primarily analysed in the qualitative data analysis, with thematic analysis being used to identify aspects of digital labour experience, and hence address the third research question around digital labour experience. The results from the quantitative and qualitative sets of data would then be interpreted, with the qualitative results being analysed to see if they would reinforce, contradict or add to the quantitative results and the Figure 1a theories. The data analysis results would also be compared with literature theories as well. Thereafter, the conclusions would be drawn to assess whether the research questions and objectives were met from the data analysis results and the research conducted, along with research limitations and future recommendations also being discussed.

1.5 Scope and Limitations

Regarding the scope, the research would investigate the attitudes and experiences of people who have basic ICT skills and who may potentially become crowdworkers, as well as those who already have crowdwork experience. The research would target people who perform work on digital gig economy platforms, which are sites primarily for hosting intangible work that is delivered digitally for a form of payment (Heeks, 2017). So the research would direct less attention to people who are

on platforms like Uber, Airbnb, that host work is partly physical and more towards platforms like Upwork, M4Jam and many others. The participants who are primarily residing in South Africa as this research would place emphasis on digital labour practice in an African developing country context.

Concerning the limitations, obtaining research funding, particularly to afford to remunerate a sizeable sample of participants for a survey was a significant challenge. There would also exist certain sites such indeed.co.za or jobvine as that may charge a fee for obtaining access to people and contacts, posting a simple job and even just for registering an account with the site. Moreover, obtaining access to respondents and contacts on a notable number of digital platforms would be difficult, as certain sites such as Upwork, PeoplePerHour may charge a user for even basic contact information of other fellow users, or may have stringent regulations for contacting other users.

1.6 Contribution of the Study

Analysing attitudes and experiences around digital labour in a developing country context, like South Africa, would uncover rich, critical insights that could serve as a valuable contribution to the research community, as well as policymakers for decisions around policies, platform owners and crowdworkers. Policymakers could use this digital labour for making better, well-informed decisions about the policies around ICT and workers that should be implemented. Platform owners could use the insights from this research to identify suitable workers that would be most successful on their platforms based on the workers' motivations as well as their skillsets. Additionally, crowdworkers could become more informed about the experiences of digital labour practices, and therefore be able to choose the most suitable platforms and type of digital jobs for them.

1.7 Thesis Structure

In the following chapter, Chapter 2, the literature review that describes the various theories gathered from multiple literature sources necessary for this research is included. Chapter 3 describes and explains the Self-Determination Theory that was used for the Figure 1a Theoretical framework along with the key constructs described in the framework and the sources that the constructs were derived from. Then in Chapter 4, the research methodology would be described in full detail and include key aspects which would be crucial for conducting the research such as philosophical considerations, approach to theory, research purpose, resources, data collection and analysis.

Afterwards, some of the ethical and confidentiality considerations that were rigorously examined to meet ethical requirements for this research on Digital Labour would also be explained. Chapter 5 includes the analysis of the quantitative and qualitative findings, results and methods used for analysing the sets of data. Also, Chapter 5 covered the interpretation of the results by comparing the qualitative findings and themes with the quantitative results and also the data analysis results with the framework theories and theories from the literature sources. Lastly, the final conclusions drawn from the data analysis to evaluate whether the research questions were adequately addressed when the research conducted would be covered in Chapter 6. Also, in Chapter 6, the research limitations, contributions of the research and the recommendations for future research would be described.

2. Literature Review

This section presents a brief overview of the context and core literature underlying the research. It summarizes the challenges which developing countries face and then looks at the possible digital labour initiatives which potentially aid development and provide full or part-time employment opportunities. It concludes with problems identified with digital labour in general, and specifically in developing country contexts.

2.1 Challenges in Developing Countries

In developing countries like South Africa, problems such as unemployment, widespread poverty and others are those that the use of ICTs such as the internet help to address by enabling job creation, creation of new products and innovations, development of SMEs and through various other ways (Asongu et al. 2019; Mbongo & De Berquin, 2019). However, certain challenges in African countries can hinder the use of ICTs and digital labour practices such as poor ICT infrastructure, lack of effective ICT policies and others (Butt, 2015). The challenges present in developing countries are described in the paragraphs that follow.

2.1.1 Infrastructure/Mobile Technology

A major challenge often faced by African developing countries is a significant lack of technology infrastructure that is required for economic and ICT development (Mbuyisa & Leonard, 2015). As an example, often low-end feature phones are used by a lot of people in poor communities in Africa, especially in countries like Kenya and Nigeria where in most cases, people cannot afford to purchase infrastructures such as costly smartphones, or high-quality broadband internet (Murugesan, 2013). Moreover, there is a huge gap in internet penetration that exist between developed countries and African countries, especially when analysing aspects such as the quality of internet being used (Pénard, Poussing, Mukoko & Piaptie, 2015).

Concerning the quality of internet, most internet connection speeds tend to be much slower than the broadband connections used in developed nations, particularly for online activities that entail high bandwidth usage such as streaming of videos (Pénard et al., 2015). Also, the lack of digital policies, human capital in the form of knowledge, expert skills and even political stability hinders the penetration and adoption of ICTs, particularly the internet, in many African nations such as Cameroon and Somalia (Asongu & Le Roux, 2017; Pénard et al., 2015). The infrastructure that supports connectivity for accessing data and enhancing communication, particularly when using mobile devices, is still required even though there has been a rise in the use of mobile devices in African countries (Robberts, Engelbrecht & Van Der Poll, 2015).

Countries like South Africa, however, tend to have more advanced ICT and mobile infrastructure than other developing countries. South Africa also tends to have more widespread use of advanced technology such as smartphones, which facilitates crowdsourcing activities and initiatives such as microwork than other African countries (Chuene & Mtsweni, 2015). Also, a key advantage of the use of mobile phones is that social media applications that have been designed for mobile phones can be used even by people with low ICT literacy for communication, exchange of information and for

gaining basic ICT skills (Bornman, 2016; Stork, Calandro & Gillwald, 2013). According to Stats SA (2018), in South Africa, there were 64.7% households nationally that had at least a single person with access to the internet in various places or outlets such as home, work, internet cafes or study place.

Additionally, provinces in South Africa such as the Western Cape, Gauteng and Mpumalanga had the greatest percentages of households that had internet access with percentages of 72,4%, 74,6% and 70,2% respectively (Stats SA, 2018). Moreover, 75% of the web traffic in South Africa consisted of mobile device users, which reiterates the importance of the use of mobile devices within South Africa (Qwertydigital, 2017). Chigada and Hirschfelder (2017) mentioned that South Africa was recorded to have the highest mobile phone diffusion rate in Africa which was at 89%, with 34% of South African mobile phones being smartphones. Smartphones have become steadily cheaper and available which has led to increased use of the internet and online data services such as Mobile Banking applications, mobile money transfer systems such as M-Pesa and various other uses (Chigada & Hirschfelder, 2017).

2.1.2 Government Policy and Service

Often, there is a lack of implementation of appropriate policies in developing countries which are critical for enhancing ICT adoption, innovation, education, research and development (Asongu, 2017). Developing countries seek for foreign investments regarding uptake of technology, but often lack necessary components in their policies such as contractual agreements, foreign alliances, to effectively collaborate with other foreign entities (Osabutey & Debrah, 2012). African Governments frequently struggle to effectively implement the appropriate policies for ensuring the effective adoption and use of ICTs, especially with the pressure growing demands from citizens and global rules that change time with time (Nkwe, 2012).

The segregation of the education system in South Africa led to many people being deprived of learning subjects, such as Mathematics and English. As a result, numerous South Africans may be less aware of the implication of the policies that exist concerning technology usage, as well as being less able to understand and comprehend the ICT policies that would benefit them (Twinomurinzi et al., 2012). Additionally, ICT Policies are often shaped by values from developed countries, making ICT policies difficult to implement in certain communities in South Africa with circumstances such as different cultures, different languages, poverty and lack of education to name a few (Krauss 2013).

2.1.3 ICT Skills

Possessing basic ICT skills has become very essential for countries not only in Africa but in the world, to be competitive, innovative and responsive to change in global markets (Akomea-Bonsu & Sampong, 2012). Basic ICT skills, which are important for the use of information and the internet to support economic, as well as social and cultural activities, are often unequally spread among different populations groups in developing countries, particularly in South Africa (Bornman, 2016). In certain African countries, students, including adults tend to struggle with basic language literacy skills due to a lack of successful language teaching approaches. As a result, people in African

countries become ill-equipped for grasping further education and gaining employment opportunities (Abrami et al., 2016).

Those people who have acquired more skills generally obtain more internet access and job opportunities than those people, like people from rural areas, who often possess less or no skills (Bornman, 2016; Stork et al., 2013). The lack of education for industry contributes significantly to a shortage of skills in ICT, which can notably affect economic growth and development in South Africa (Ansen, 2014). Provision of appropriate education through certain institutions and government policies is essential for numerous people to gain basic and technical ICT skills, and thus gain more employment opportunities (Ansen, 2014; Bornman, 2016). Although there have been developments in ICT infrastructures, more knowledge and training is required on how to effectively utilise technologies for ICT activities such as eLearning that are essential for economic development (Abrami et al., 2016).

2.2 Digital Labour Initiatives

Several of the digital labour initiatives that are practised which include teleconsulting, crowdsourcing, microwork, impact sourcing and others, are crucial for addressing the major circumstances in African countries like South Africa such as unemployment, poverty and others (Mtsweni & Burge 2014). Digital labour activities are perceived to yield key benefits for workers and organisations such as enhanced productivity, increased sources of employment globally and nationally, development of skills and professional status (Mtsweni et al., 2016). Some of the major digital labour initiatives that are widely practised in developing country contexts, in particular, are described in the subheadings that follow.

2.2.1 Crowdsourcing

Crowdsourcing is known to be the digital labour activity where numerous amount of people can reach out to each other through a network on an ICT platform to share and exchange ideas and resources for achieving common objectives that could be mutually beneficial (Machine & Ophoff 2014). The idea of sharing and collaborating resources, ideas and information has been witnessed on global digital platforms such as Facebook, LinkedIn, YouTube, Wikipedia which all rely on the contribution of various content by clients around the world, even from developing countries (Bott, Gigler & Young, 2014).

Crowdsourcing has many types of implementations which are most widely practised in developing countries that include crowd co-creation, crowdfunding, crowd voting, crowd processing and microwork (Chuene & Mtsweni, 2015; Cupido & Ophoff, 2014). Crowd co-creation, for instance, involves people on a crowdsourcing platform sharing creative solutions to problems and developing of products or services such as online textbooks, historical exhibits and more (Solemon, Ariffin, Din & Anwar, 2013). A crowdsourcing platform called Idea Bounty is a crowd co-creation used by companies such as First National Bank, Unilever and Breweries in South Africa to create various ideas that could be narrowed down to the best idea or solution being selected (Gatautis, Vitkauskaite, 2014).

Crowd voting involves the voting of a group of people on a crowdsourcing platform concerning ideas, opinions and key decisions as witnessed in political campaigns and colleges (Mtsweni et al, 2016). Ushahidi, as a popular example, was used in Kenya for voting in political elections, as well as being used for reporting on crisis natural disasters and government corruption in Uganda, Nigeria, Libya, Egypt and other countries (Wazny, 2017). Regarding Crowd Wisdom, people contribute ideas and knowledge which is essential to determining future predictions, solving certain problems or shaping an organisation's strategy (Solemon et al., 2013). The Enhancing Neuroimaging and Genetics through Meta-Analysis (ENIGMA), a neuroscience project which involved the contribution of researchers from South Africa is an example of a multinational Crowd Wisdom project (Mohammadi, 2015).

With crowdfunding, a crowd of people who are in a network gather funds together towards potential enterprise ventures or projects such as projects in education (Mtsweni et al., 2016). Belleflamme, Omrani and Peitz (2015) described two major kinds of crowdfunding which are namely investment-based crowdfunding and reward or donation-based crowdfunding. With Investment-based crowdfunding, people who contribute funds obtain a return or higher interest loan, whereas, in reward or donation-based crowdfunding, funders may receive a prize for contributing or just freely support the project cause but do not expect any financial compensation (Belleflamme et al., 2015). Some popular crowdfunding platforms include CrowdPower, for renewable energy projects in developing countries and Kiva, which provides funding assistance for various businesses and institutions in countries like Kenya and Uganda (FSA Africa et al., 2017).

By tapping into the skills and expertise of multiple workers on a crowdsourcing platform, organisations can also benefit by being more productive through crowdsourcing initiatives such as microwork, where workers can be assigned with different small tasks on a common online platform according to the different level of skill of the workers (Mtsweni et al., 2016). As mobile phones are widely used in many African countries, crowdsourcing techniques can be used to address issues of lack of ICT infrastructure which can affect various business activities for institutions and organizations (Murugesan, 2013). Organizations and institutions, through harnessing high-level skills of many workers can also be more innovative and ultimately more profitable through the sharing of ideas and knowledge, creation of new products, the contribution of funds, construction of development programs, on crowdsourcing platforms (Chuene & Mtsweni, 2015; Tripathi et al., 2014). Also, with disintermediation, which involves providing workers with the opportunity to contact and reach their customers directly through crowdsourcing platforms without a mediating agent or company, workers have the chance to interact and learn more about their clients and become more productive in their services (Graham et al., 2017; Langley & Leyshon,2017).

An additional crowdsourcing technique, namely microwork, is an activity also used in organisations for breaking down a complex task of a certain size into smaller micro-tasks which could also be performed by people who do not have advanced mobile infrastructures. Microwork could beneficial even for people who do not possess smartphones or personal computers (Mtsweni et al., 2016). Commonly used microwork platforms used by African internet users include Amazon Mechanical Turk, Freelancer, Upwork, and African digital platforms such as Jana (previously known as Txteagle),

Mintor, Hooros, Crew Pencil and several others (Onkokame et al., 2018). Microwork platforms are recognised to provide certain benefits particularly for poor communities such as skills development, flexible work hours from any location, provision of wages to support households and communities. However, with microwork, low-paid jobs with low skill tend to be targeted towards groups of people on global internet platforms that are marginalised and viewed as disposable, such as people of colour, women, prisoners, homeless people and others (Casilli, 2017).

2.2.2 Teleconsulting

Regarding health services in African countries, teleconsulting is a digital labour initiative where consultations occur between doctors and patients for diagnosis, treatments and transmission of medical data through technologies such as video links and networks (Mayoka et al., 2012). Teleconsulting also involves the application of ICTs in medicine to utilise medical information for educating healthcare providers, patients, medical workers in addition to the treatment of diseases and conditions (Misra et al., 2020). Some of the technologies used in teleconsultations for patients in African countries include Short Message Service (SMS), Multimedia Messaging Service, and the voice call function which are features that can be used for even patients who only possess low-end feature phones and have limited access to latest technologies (Nhavoto & Grönlund, 2014).

In African countries, such as South Africa, Kenya, Tanzania and others, there are about up to 40% of people that reside in rural areas and depend on applications of services like teleconsulting as their only source of health care (Combi, Pozzani & Pozzi, 2016). Often in poor urban areas and rural locations, traditional healthcare services are also provided by traditional health workers to community members where modern medicines can be expensive and unavailable. Traditional health workers, particularly in rural locations, offer physical, spiritual and educational health and nursing services (Kamsu-Foguem & Foguem, 2014, Misra et al. 2020). Teleconsulting is viewed as being beneficial as it helps patients to obtain professional advice from experts to various medical workers (Mars, 2013). Moreover, Electronic Health(E-health) approaches like teleconsulting are useful in raising awareness and providing information about different medical services and treatments in many African countries for patients to avoid being sick and obtain the healthcare and treatments they require (Blom, Laflamme & Alvesson, 2018).

For diseases such as HIV/AIDS, Malaria and others, medical services, such as HIV counselling and testing in countries like South Africa and Uganda can be marketed through crowdsourcing platforms like WeChat, Taobao and other teleconsulting applications (Mars, 2013; Tucker et al., 2018). An issue of lack of education and training among health workers tend to occur in developing countries, where health workers have difficulty in accessing or contacting medical experts or specialists for advice. The use of teleconsulting approaches such as videoconferencing, use of X-rays and images from medical scans, text messaging using apps like Whatsapp and others can be utilised for inexperienced health workers to obtain expert advice, training and health knowledge from specialists (Combi et al., 2016; Kamsu-Foguem & Foguem, 2014).

2.2.3 Impact Sourcing

Another important initiative, impact sourcing, is where less-privileged people with a disadvantaged background, are primarily the ones provided job opportunities to obtain critical benefits such as raising of skill, knowledge levels and earning of an income through Information technology (IT)(Sandeep & Ravishankar, 2016). Less privileged people who are targeted in impact sourcing may be people who live in slums, work as a farmer, and possess a high-school education or even a university graduate degree or diploma (Heeks, 2013). Impact sourcing can be utilised as a technique for a government such as the South African government, to provide numerous jobs to many disadvantaged people through suitable policies (Wayde & Rogerson, 2014). Institutions such as governments, businesses could play a critical role in providing support and raising the skill levels of marginalised, disadvantaged people through impact sourcing (Sandeep & Ravishankar, 2016).

However, companies can also use impact sourcing to obtain cheap labour for outsourced operations and hence exploit impact sourcing workers, which would be a disadvantage for impact source workers (Lacity et al., 2014). Moreover impact source workers are viewed by companies as being eager to perform their tasks and unlikely to leave or change jobs, making impact-sourcing workers exploitable (Burgess, Ravishankar & Oshri, 2015). Another issue in impact sourcing is that when fraudulent workers obtain employment on a crowdsourcing platform hosted by a company, for example, fraudulent workers could end up depriving honest workers of crucial opportunities. Also, if companies do detect the presence of fraudulent workers on their crowdsourcing platforms, companies may decide to limit the number of workers on their crowdsourcing platform, which could further deprive truthful workers of employment opportunities (El Maarry, Güntzer & Balke, 2015).

2.2.4 Outsourcing

When considering outsourcing, it is described as the initiative where the operational activities and responsibilities are handed over to another company or supplier (Wachira et al., 2016). Some of the outsourcing techniques which are becoming more widely practised in developing countries are information technology outsourcing (ITO) and business process outsourcing (BPO) (Abbott, 2013; Wachira et al., 2016). ITO is an outsourcing technique which is primarily concerned with software development and maintenance. BPO, on the other hand, is mainly focused on breaking down of business services into processes which can be executed and supported by ICTs, with call and contact services in South Africa being an example of BPO (Abbott, 2013).

Outsourcing is utilised by companies to improve efficiency and performance in business activities through reducing the size of workforce and processes which would result in lower costs, reduced overheads, rapid decision-making and greater productivity for companies (Mbuba & Wang, 2014). However, for workers, there may be some who lose their jobs when companies decide to reduce workforce size and workers may get exploited for their labour by companies while being paid low wages (Lacity, Rottman & Carmel 2014). There tends to be less emphasis on addressing social needs in outsourcing when compared to impact sourcing. Consequently, the needs of workers, in terms of reasonable wages, skills and community development, may not even be considered by companies in BPO and ITO (Heeks, 2013).

2.3 Issues and Challenges with Digital Labour

Putting into practice digital labour techniques and activities could still give rise to significant challenges for digital workers even though digital labour can provide many vital benefits to developing countries in Africa. Some of the issues that may arise with digital labourers seeking digital work are described in addition to the challenges in developing countries already described.

2.3.1 Exclusion

One significant problem in digital labour is that people using digital and social media platforms can be excluded from certain labour markets and digital jobs due to race, gender or economic status even though a notable portion of digital work opportunities are targeted towards African developing countries (Graham et al., 2017). Major powerful companies can implement surveillance of social media users, including those from developing countries like South Africa, on online platforms and place users into different groups based on characteristics such as ethnicity, gender and age (Fuchs, 2012). As a result, certain users can be prevented from accessing certain products, services, websites and even digital jobs based on certain characteristics that platform providers may deem to be desirable or undesirable (Fuchs, 2012; Graham et al., 2017).

2.3.2 Re-intermediation

Another notable challenge with digital labour is that digital workers in African developing countries who become highly skilled and successful could proceed to employ and aggregate other digital workers of less experience to undertake digital work that successful digital workers may find burdensome in a process called re-intermediation (Benghozi & Paris, 2016; Graham et al., 2017). With re-intermediation, digital workers, often in African developing countries, who have low experience or low skill can be exploited by other more successful digital workers, and be made to undertake low-skilled and very low-paying jobs (Benghozi & Paris, 2016; Graham et al., 2017).

2.3.3 Exploitation

Digital workers in developing countries may be prevented from being able to access knowledge about business processes of their companies and be deprived of the opportunity to enhance their skills and gain knowledge especially if they have a low skill set and also may feel less secure in their jobs (Graham et al., 2017; Mann & Graham 2016). Digital workers can, therefore, be exploited through being deprived of acquiring certain skills, experience and further employment opportunities (Mann & Graham 2016). Also, global outsourcing could lead to jobs with low skill being targeted often towards lower-income countries like South Africa with low payment which could increase inequality as employers provide low-paying jobs to certain workers based on the developing country the workers are from and the workers' skill levels (Fu, 2019).

2.3.4 Lack of Bargaining Power

Often on digital platforms, workers tend to lack the ability to govern communicate with each other due to the restricting of interactions on digital platforms. Workers, as a result, are unable to unite and form unions and harness bargaining power to obtain fair compensation and other work conditions (Graham et al., 2019). As employers tend to favour higher-skilled workers and divert resources and opportunities away from lower-skilled workers, who are often from developing

countries like South Africa to higher-skilled workers, the low-skilled would have their wages reduced and lose their bargaining power (Dunn, 2017). In addition to the issue of bargaining power, there is often competition among workers, particularly in countries like South Africa, with different skill levels that are seeking after the same kind of jobs and clients, potentially resulting in workers undercutting each other by charging rates for their services that are lower than their counterparts (Graham et al., 2017; Graham et al., 2019).

2.4 Literature Research Gap

Regarding the main aim of this research, there have been some studies that similarly examined the perceptions and attitudes of people around digital labour practices such as crowdsourcing and how they would address major issues in developing countries such as unemployment (Nkuna et al., 2020). Nkuna et al (2020) particularly investigated the impact of activities such as crowdsourcing and microwork on the livelihoods of youth in Mamelodi, South Africa particularly in providing youths digital jobs to young, unemployed people even though those jobs may be short-term and not have desirable payment.

Also, Jaziri and Miralam (2019) in their research analysed how the intention of entrepreneurs in Tunisia to participate in investment-based crowdfunding platforms would be affected by certain factors relating to attitudes such as perceived trust of crowdfunding platforms, the usefulness of crowdfunding and others. So this research was aimed at contributing to the growing body of literature in the analysis of attitudes toward technology practices, particularly by placing focus on the attitudes of people towards the sustaining the practices of digital labour, for which there are a limited amount of studies (Rahi & Ghani, 2019).

Also, the motivations of individuals were found to have an impact on their participation in digital labour activities in a growing number of studies. For instance, Muldoon et al. (2018) described that the internal motivations of individuals could be enhanced or lowered by incentives such as monetary rewards, relating to the idea of the Self-Determination Theory used for this research. Self-determination Theory is the idea that describes the types of motivations of individuals, both internal and external when undertaking new experiences or activities (Rahi & Ghani,2019).

Liu and Sundar (2018) mentioned that monetary rewards and other incentives could affect the individual's performance and motivation on platforms such as Amazon Mechanical Turk. However, Liu and Sundar (2018) also expressed that several studies observed that external rewards would not discourage the internal motivation of the individual unless the interest of the individual in the job and the consequent reward was high. This research would explore the attitudes toward digital labour by utilising the Self Determination Theory that describes the different kinds of motivations, from the external rewards such as payment, relationships to pure inherent interest in undertaking an activity itself, as it relates to digital labour.

2.5 Literature Review Summary

Developing countries like South Africa are often encountered with major problems when implementing ICT initiatives such as Infrastructure, lack of implementation of appropriate policies and the unequal spread of basic ICT skills amongst populations, even though South Africa has greater internet penetration, ICT and mobile infrastructure than other African countries. Digital Labour initiatives such as crowdsourcing techniques, microwork, teleconsulting, impact sourcing and even outsourcing are perceived to bring about key benefits for countries like South Africa such as a reduction in unemployment, poverty, development of skills, knowledge sharing and creation, greater access to services such as health and others. However, digital labour initiatives can also bring challenges for workers such as exclusion from platforms based on religion, race, lack of bargaining power, exploitation of labour and others. This research aims, in particular, to address the research gap of analysis of attitudes toward the sustaining of digital labour practices, using theories such as Self-Determination Theory to explore attitudinal and motivational aspects affecting digital labour participation.

3. Proposed Theoretical Framework

The theoretical framework used for conducting this research was constructed using concepts mainly from the various sources of literature discussed in this article. However, the underlying theory for the proposed framework is Self-Determination Theory (SDT). SDT was used for describing the attitudes and expectations that could cause workers to decide to take part in digital labour activities. SDT aspects such as monetary compensation, professional status, social fulfilment and others were used to describe the different types of motivations and attitudes that digital workers may possess both when choosing to participate in digital labour initially, and when deciding to continue performing digital work. The Self Determination Theory and its application in the digital labour theoretical framework are described in the text that follows.

3.1 Self-Determination Theory (SDT)

Self-Determination Theory is frequently used to describe and explain the motivations of an individual for undertaking a particular kind of work or task (Adukaite & Cantoni, 2016). SDT as initially developed as explicitly the Self Determination Theory in the 1980s and from motivation theories that were in the field of psychology that were being developed in the 1970s (Deci & Ryan, 1985; Deci & Ryan, 2002; Deci & Ryan, 2008). SDT was developed to put into perspective the idea of how individuals desire growth, exploring new experiences, reaching a sense of a united self inherently and the other idea of individuals' motivation being responsive to and being controlled by the external environment (Deci & Ryan, 2002). Although the SDT was developed from largely psychological theories, essential motivational theories covered in SDT were found to be applicable in various areas such as education work, digital work, parenting, physical activity, health and others.

The self-determination theory serves a role of making a distinction between intrinsic and extrinsic motivation. Intrinsic motivation is where people become more willing to participate in an activity because of the pleasure they obtain from the activity itself (Gagné & Deci, 2005). Intrinsic motivations such as enjoyment and excitement from an activity, care for a community, social fulfilment, and expression of creative talent can take effect even with regards to digital labour practices such as crowdsourcing and many others (Battistella & Nonino, 2012).

Extrinsic motivation, on the other hand, is where people undertake an activity or a task because of the satisfaction they might obtain from the reward that the task might yield (Gagné & Deci, 2005). Certain extrinsic motivations such as financial compensation, acquiring new professional skills, enhancing a professional status and others are crucial aspects for explaining what would cause workers to participate or not participate in digital labour activities (Battistella & Nonino, 2012). In SDT, an individual can also be said to be externally regulated, implying that their behaviour towards an activity would be determined by an external party such as a boss at work.

An important idea in SDT is that of internalisation, where attitudes, values are adopted by an individual to the extent that the behaviour of an individual becomes internally regulated rather than being external regulated and an individual develops a sense of self (Gagné & Deci, 2005). SDT describes how the motivation for a task can reach a level where it becomes internalised as part of

the individual's ambitions (Huili, Zhenzhen & Tao, 2016). When an individual's motivation reaches the level of integrated regulation, that individual develops a full sense of self through the activity or job they perform and thus become self-determined (Gagné & Deci, 2005).

Regarding Digital Labour, the SDT theory is useful for the theoretical framework because SDT helps to explain how digital workers' motivations can encourage initial digital labour participation and the continued participation of workers in digital labour. Compared to other frameworks such as Technology Acceptance Model (TAM) and Theory of Reasoned Action (TRA), Self-Determination Theory has a greater in-depth focus on the intrinsic motivations that are crucial in encouraging an individual to participate in an activity other than just exploring the external rewards or influences on an individual (Khan et al., 2018). Rahi and Ghani (2019) also mentioned that the SDT provides deeper analysis and understanding on the intrinsic and extrinsic motivations that could bring satisfaction for an individual in undertaking a technology practice, unlike TRA and TAM that focus on extrinsic motivations, such as payment, usefulness, for acceptance and use of technology.

3.2 Proposed Digital Labour Framework

For the theoretical framework displayed in Figure 1a, the main constructs described were micro-factors, macro-factors, barriers, expectations, attitudes, intention to participate, initial digital labour participation and continued digital labour participation. The aspects that are grouped under the main constructs of the framework were discovered primarily from the various literature sources that were analysed for the research. The macro construct was used to describe the issues that would affect digital labour practices regionally or even countrywide in African countries like South Africa. The main macro issues explained in the literature that would affect digital labour included policy, education, foreign investment, governance, ICT infrastructure, human capital and resource, mobile infrastructures and others.

For the micro construct, the aspects described were those that could significantly affect an individual worker's ability and willingness to participate in digital labour. The micro construct aspects included access to technology, education level, digital literacy, technology possessed, workers reputation, age and income. These aspects, which were described in the literature, could determine the kind of barriers to digital labour that an individual worker may experience. The initial expectations construct would consist of aspects that describe what workers would require from participating in digital labour based on their initial perception of digital labour such as financial compensation and others. On the other hand, the experiential expectations consisted of aspects that describe what workers would anticipate from digital labour based on their experience of digital labour such as financial compensation, job security and others.

The attitudes construct consisted of the different motivations that workers would possess as a result of their perception or experience of digital labour, with the different circumstances and barriers taken into consideration. The other constructs which include the intention to participate, initial or actual participation in digital labour and continued participation all describe a digital worker's decision to take part in digital labour activities and the initial and continued experiences realised in digital labour. The construct, intention to participate, described the decision of an

individual to participate in digital labour which was viewed to have a close relationship with the initial participation in or experience of digital labour. The initial participation construct described an individual's initial experience of digital labour. The initial participation was viewed as having a positive effect on the experiential expectations construct. The continued participation in digital labour represents an individual's continued experience in digital labour over time.

3.3 Summary

The Self-Determination Theory was used for describing the attitudes and motivations that influence the participation of individuals in digital labour practices by identifying the different types of motivation which are the intrinsic and extrinsic motivation. SDT had a greater in-depth focus on the intrinsic motivations unlike the other frameworks such as TAM and TRA that focused mostly on external motivating factors such as payment and usefulness and was, therefore, was the most preferred theory for this research. For the Figure 1a theoretical framework, the macro, micro and barriers constructs were used to describe the issues that affect the implementation of technology practices regionally, nationwide, for an individual and specifically in digital work platforms. The initial and experiential expectations constructs represented what people would require from participating in digital labour before and after their initial digital labour experience respectively. The attitude construct would represent their view of digital labour and was viewed to affect the intention to participate, and initial participation in digital labour. The initial participation would consequently be viewed to affect the continued digital labour participation for individuals.

4. Research Methodology

4.1 Philosophical Considerations

The ontological stance taken in this research was objectivist because digital labour research would adopt the view that knowledge about digital labour is largely already available in the external world and obtained by researching about already-known facts around digital labour. The ontological stance taken for this research would hold the view that information and ideas around digital labour would be obtained by observing and learning about the external world and would be less oriented towards, if not totally opposed to the personal beliefs or convictions of the researcher (Elander & Cronje, 2016).

The epistemological stance for this research would be a positivist approach because a greater in-depth analysis of digital labour would largely involve researching well-known, objective facts and theories about crucial issues around digital labour. The positivist approach would be most suitable for this research as more emphasis would be more directed towards facts uninfluenced by subjective opinions and the use of quantitative methods for analysing data (Alharahsheh & Pius, 2020). Through the analysis of facts and theories which are already widely known, a greater understanding of challenges and aspects that shape the experiences and attitudes of workers towards digital labour practices, in reality, could be obtained. Additionally, a positivist epistemological stance would coincide fittingly with the objectivist stance with regards to ontological considerations for this research (Siponen & Tsohou, 2018).

4.2 Theory Approach and Purpose

The purpose for which this research was conducted was mostly descriptive because the research was directed at gathering findings from conducting surveys involving digital labourers. Research findings from surveys would be used to investigate and explain the relationships between different digital labour aspects and how they affect the experiences and attitudes of digital labourers toward digital labour practices. With regards to the theory approach for this research, the most suitable approach to be adopted would mainly be abductive. An abductive approach to theory would allow for well-known theories described in literature sources, such as those in Figure 1a, to be investigated and validated through the analysis of quantitative Likert-scale survey responses. Additionally, with the abductive approach, the Figure 1a theories could also be modified, supported or contradicted by survey respondents' views and experiences from open-ended qualitative responses, which could also lead to the discovery of additional insights.

4.3 Pretest and Pilot Study

The survey questionnaire was validated with a senior research supervisor in the Department of Information Systems, Commerce Faculty at the University of Cape Town. The questionnaire is shown in Appendix A: Research Instrument under the subtitle Questionnaire. There is also Table 40c in Appendix A that shows the sources where the questions for the questionnaire were obtained. The pretesting was conducted to ensure there were no errors on the questionnaire such as spelling mistakes, numbering and others (Gomesa, et al., 2016). The questionnaire was constructed online

on a survey website called qualtrics and also had to be tested to ensure there were no online errors such as broken links, widgets that didn't function and others. Additionally, with the pretesting, the questions on the survey questionnaire were validated to ensure they were readable and understandable by any random respondent. Once the research instrument was validated, the feedback was provided to ensure that the necessary changes were made and any errors would be eliminated.

With regards to the pilot study, the survey questionnaire was distributed to 5 respondents to ensure that the questionnaire was readable, functional online and convenient to complete. All the responses were collected from the respondents online on the qualtrics website. The questionnaire on average was answered by the respondents in a time frame of between 20 – 40 minutes. When the responses were collected, some edits and improvements were made to the questionnaire layout to make the questionnaire more convenient. The questionnaire as a whole was viewed as understandable and interesting by the respondents. The responses for the pilot study were removed from the final survey responses that would subsequently be used for data analysis.

4.4 Sampling Frame

The sampling method adopted for undertaking the research would be convenient sampling. Convenient sampling method was suitable as it would allow for those participants who are able and willing to volunteer to participate in the research and who perform digital work (Mapande, et al., 2018). Digital labourers would refer to people who participate in producing digital work for other clients who require digital work in return for a payment (Graham et al., 2017). These digital labourers for this research include people who have minimal digital skills such as web browsing, blogging and others. So respondents for a survey conducted in this research on digital labour were undertaking digital work, particularly crowdsourcing, and being paid at any amount for doing digital work.

Crowdsourcing experiences of respondents, in particular, were the digital labour experiences primarily being investigated. Digital labourers from different companies, institutions, online social networks and other places were targeted for this research and searched for in various places and networks such as crowdsourcing sites like htxt, entrepreneurmag and the LinkedIn social network for people with different IT professions and others. A total of 70 respondents obtained for the sample size would be sufficient data to be collected for this research on digital labour to produce statistically significant findings, as has been the case with other similar studies in Information Systems (IS) (Dey et al., 2016). For the sample size, certain limits were taken into consideration such as the funding to pay multiple participants and access certain sites, willingness of respondents to participate and contribute with complete responses.

4.5 Research Propositions (Quantitative Analysis)

The propositions that were investigated in the quantitative data analysis were based on the main constructs for the research framework. The diagram showing the framework with the research propositions is displayed in Figure 1b.

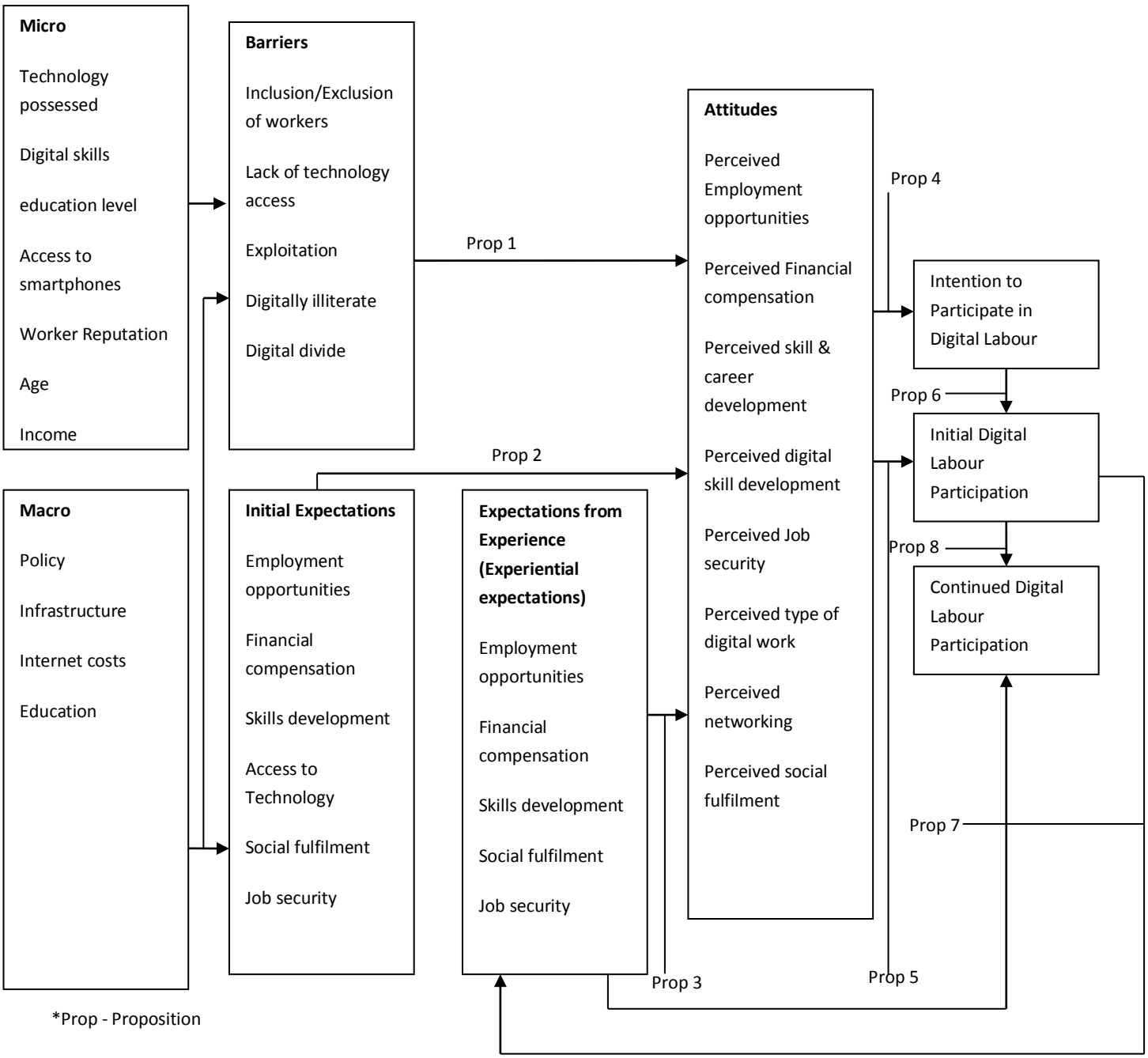

Figure 1b Digital Labour Theoretical Framework with Proposition Relationships

- Proposition 1- Digital labour barriers would have a negative relationship with the attitudes of digital workers toward digital labour.
- Proposition 2 –Initial Expectations of digital labour would have a positive relationship with the attitude of individuals toward digital labour.
- Proposition 3 – Experiential Expectations of digital labour would have a positive relationship with the attitude of digital workers toward digital labour.
- Proposition 4 - Attitudes of individuals towards digital labour would have a positive relationship with their intention to participate in digital labour.
- Proposition 5 – Attitudes of digital workers would have a positive relationship with their initial or actual participation in digital labour.
- Proposition 6 - The intention to participate in digital labour would have a positive relationship with the Initial Participation in Digital Labour.
- Proposition 7 - Initial Participation in Digital Labour would have a positive relationship with the experiential expectations for digital labour
- Proposition 8 – Experiential expectations of digital workers concerning digital labour would have a positive relationship on the Continued Participation in Digital Labour

The propositions would be instrumental in addressing the main aims for this research by analysing the framework constructs such as the expectations, barriers of digital labour and how they influence the attitudes and experiences of digital workers when participating in digital labour.

4.6 Mixed-Methods Approach

Regarding data collection in this digital labour research, the data would be obtained using a survey tool called Qualtrics to design an online questionnaire which would be distributed to respondents who were able to access the questionnaire online. The method used for conducting data analysis in this research was a mixed methods approach with the primary focus being mostly on the quantitative aspect of the data analysis.

The quantitative part of the mixed methods approach for this research was most appropriate because quantitative method coincided suitably with the ontological and epistemological stances used described earlier in this article. Conducting qualitative analysis of the open-ended survey questions was helpful because it would give a further in-depth analysis of the aspects around the digital labour experiences. Both quantitative and qualitative analysis techniques were performed in parallel with both results being used for interpretation to address research questions and objectives for digital labour.

For the quantitative part of mixed methods analysis, descriptive statistics were recorded for the data variables identified. The research data variables would represent the likert-scale survey questions asked for each of the constructs in the framework described in Figure 1a. Correlation analysis was performed on the research data to identify the relationships between data variables. The reliability analysis of the data variables was conducted to ascertain that the questions represented by data

variables would fit well with the framework constructs. Factor analysis was performed on the data for identifying large sets of variables, representing the likert-scale survey questions that could form homogeneous groups or factors which would relate with aspects of the digital labour framework constructs. Tools such as Statistica were used for performing key statistical tests on research quantitative data.

For the qualitative analysis, the thematic analysis would be used to analyse the findings from interview questions and identify key themes in their responses. Software such as NVIVO and Excel would be used for highlighting and organising themes and responses for analysis. The themes would be analysed to investigate how they correspond in particular with different aspects of digital workers' experiences. The analysis of the qualitative findings would be interpreted along with the quantitative findings to yield an in-depth discussion on the different attitudes and experiences of digital workers.

4.7 Resources and Plan

For resources used, there was no cost for setting up a questionnaire and distributing it online through qualtrics. There were no transport costs, as all the questionnaire responses were done and collected online. However, funding was necessary as a financial incentive to encourage participation in the research. For the main financial incentive, each respondent was paid an amount of R50 for fully completing the questionnaire through electronic funds transfer (EFT) to their bank accounts or as mobile airtime.

The way respondents were rewarded was that once each respondent had completed a questionnaire, their responses would be checked to see if the questions had been completed. If each respondent had completed every question on the questionnaire, each respondent would then be told that they qualify for the reward and would be asked for their bank details via Electronic mail (email) to send the respondent a payment of R50. The bank details that were requested for were the bank account number, name of the bank and the branch code for the bank details. These details would not, however, be used for the research and would be kept confidential. The payment of R50 was sent to each respondent along with a notification of payment to verify that the financial reward had been sent to the respondent.

The secondary alternative was available in the form of R50 mobile airtime being sent to the participant's phone number for a fully complete questionnaire, only in the case where sending of R50 through EFT to a respondent was not viable or preferred. How the payment was given was that when a respondent had filled in a questionnaire, their questionnaire would be checked for completeness, to ensure no blank responses were left. If the respondent's questionnaire was complete, they would be notified through email and Short Message Service (SMS). The respondent's phone number would be requested and obtained through SMS and email. The airtime would thereafter be sent to the respondent's phone number along with an SMS message to confirm that the mobile airtime of R50 has been sent to the respondent. Implementing a financial incentive for this survey was necessary to encourage participants to undertake the survey and fill in the

questionnaire. The Research Timeline outlining the dates around which the stages of the research took place is shown in Table 1.

Table 1 Research Timeline

Task	Start Date	End Date
Dissertation Proposal	15 February 2019	15 March 2019
Lit review	18 March 2019	25 April 2019
Research Design	26 April 2019	06 June 2019
Ethics Clearance	07 June 2019	15 June 2019
Data Collection	16 June 2019	26 November 2019
Data analysis	26 November 2019	23 January 2020
Dissertation Presentation	27 January 2020	27 January 2020
Dissertation Hand-in	24 January 2020	12 May 2020

4.8 Confidentiality and Ethics Approval

With regards to ethical considerations, there were no ethical issues that needed to be addressed concerning race, religion or age. On confidentiality considerations, there were no names of individuals or companies or any other sensitive information of respondent that were disclosed in the online questionnaires. Ethics clearance was obtained from the UCT Ethics Department. A consent form with a commerce ethics form and an ethics approval was used for obtaining consent from respondents for conducting the survey.

Regarding ethical implications when conducting the survey, the consent form was used to gain the consent of the respondent to participate in the survey to ensure ethical practice when conducting the survey (Kelley et al., 2003). The respondent would also be allowed to opt out of the survey at any point they choose during their participation. Regarding the incentive used for the survey, the incentive was included to show regard for survey participants and compensate them fairly for the time they would spend in completing the questionnaire and the valuable insights they would contribute. The remuneration amount, however, was offered at a small amount to ensure that the incentive would encourage participation and avoid altering the survey responses that are contributed. Also, the consent form included with the online questionnaire highlighted clearly the

condition for receiving payment for participation which was the completion of all the questions in the questionnaire (Cobanoglu & Cobanoglu, 2003).

4.9 Summary

This research would adopt a mixed methods approach that focuses mainly on using quantitative analysis techniques analysing widely recognised theories around digital labour described in literature sources that are generalizable. However, this research would also aim to explore open-ended, subjective views through the qualitative analysis to support, contradict quantitative findings and Figure 1a theories. Propositions in Figure 1b relating to the research questions would be investigated particularly through the quantitative analysis techniques to address main research questions. For conducting the research, a survey consisting of an online questionnaire that has been validated and pretested would be rolled out to a convenient sample of 70 respondents with a monetary incentive to encourage participation. Ethical considerations such as providing only small participation rewards, using anonymous questionnaires, keeping information strictly confidential and gaining consent for respondents' participation were observed for this research.

5. Data Analysis and Findings

For the research data analysis, there were two main parts to the analysis, which were the quantitative and qualitative sets of data analysis. For this research, the data analysis was focused mainly on the quantitative analysis findings and results, with the qualitative analysis being used for additional analysis to either support, contradict or add to the quantitative analysis and the Figure1a theories guiding the research. The qualitative analysis was therefore secondary to the quantitative analysis. The following two subsections describe in detail the procedures, data, tests conducted in the quantitative and the qualitative sets of data analysis.

5.1 Quantitative Data Analysis

The data used for the quantitative analysis was quantified from the responses given to the likert-scale questionnaire questions, which asked for the views of the survey respondents around the expectations, barriers and the attitudes around digital labour. The likert scale questions also included the respondents' intentions to participate in and reactions toward initial and continued participation in digital labour and crowdsourcing. Responses analysed in the quantitative analysis included the responses from respondents with and those without crowdsourcing experience. The quantitative part of the data analysis was critical for investigating the relationships between the main framework constructs that were outlined in the propositions and testing if the eight propositions stated were valid and effective in addressing the main research questions.

The main statistical methods used for analysing the data were descriptive statistics, Cronbach alpha Reliability analysis, factor analysis, spearman's rank correlation analysis and regression analysis respectively. These statistical methods were conducted using the software programs which were namely TIBCO Statistica and Microsoft (MS) Office Excel 2010.

5.1.1 Demographics Charts and Statistics

The demographics for the respondents that took part in the survey were aggregated and described using pie charts and bar graphs for representation. The pie charts and bar graphs were produced using the MS Excel 2010 program. The demographics variables described for the respondents were age, gender, education, internet device ownership and crowdsourcing experience.

Age

The graph below shows the bar graph for the age of the respondents:

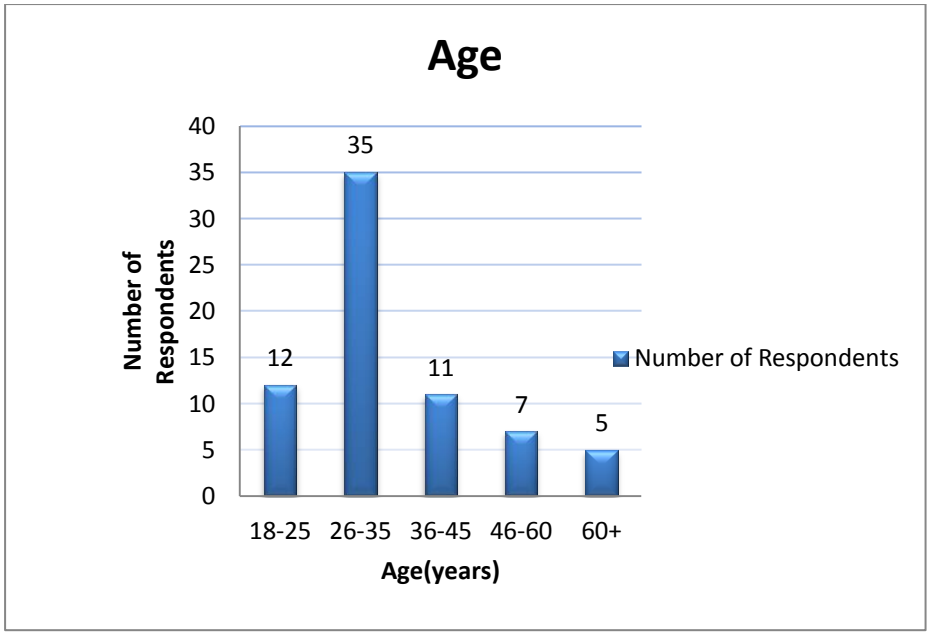

Figure 2 Bar Chart Showing Respondents' Ages

Most of the Respondents that took part in the survey were under the age of 45 years. The age group with the largest number of respondents was the one with ages between 26 and 35 years, which would be representative of largely young ICT professionals that are in South Africa. Even though the majority of the respondents were below the age of 45 years, there were also a significant portion of respondents that were above the age of 46 years and even 60 years, who were able to contribute their views and possible experiences in digital labour.

Gender

The graph that is shown below in Figure 3 displays a pie chart representing the number of respondents that correspond to each gender.

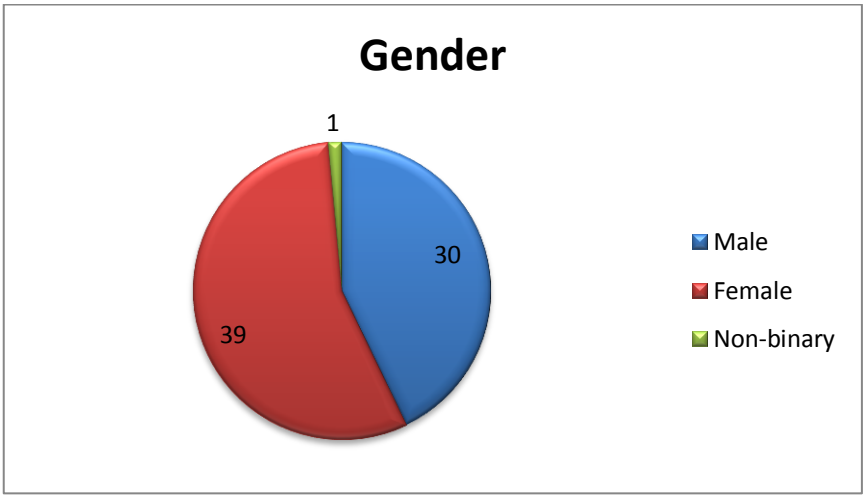

Figure 3 Gender Pie Chart

The gender groups that represented the number of respondents in the survey were the traditional male and female groups, with the female groups representing the highest number of respondents at

39, followed by the male group of respondents at 30. Only 1 respondent was observed to be outside of the traditional gender groups and in the non-binary gender group to represent alternative gender groups.

Education

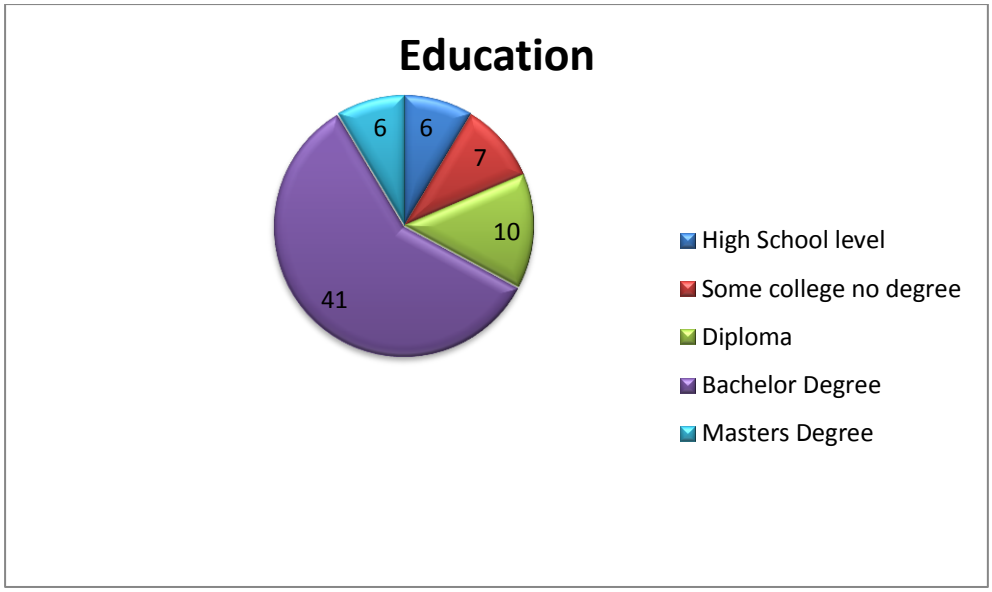

Figure 4 Education Pie Chart

From the pie chart in Figure 4, most of the respondents had obtained their highest form of education at tertiary level, with 41 respondents having a Bachelor's Degree, 6 respondents obtaining a Master's degree and 7 respondents obtaining some college education without a degree. Additionally, 10 respondents also possessed a Diploma. Overall, most of the survey respondents that participated in the survey had education at tertiary level in addition to having basic ICT skills as well. Only 6 respondents had High School Education as their highest form of education.

Internet Device Ownership

The graph in Figure 5 shows the number of respondents who own and use the technology devices such as a Personal Computer(PC), Smartphone or an electronic tablet to access the internet and conduct their online work or activities.

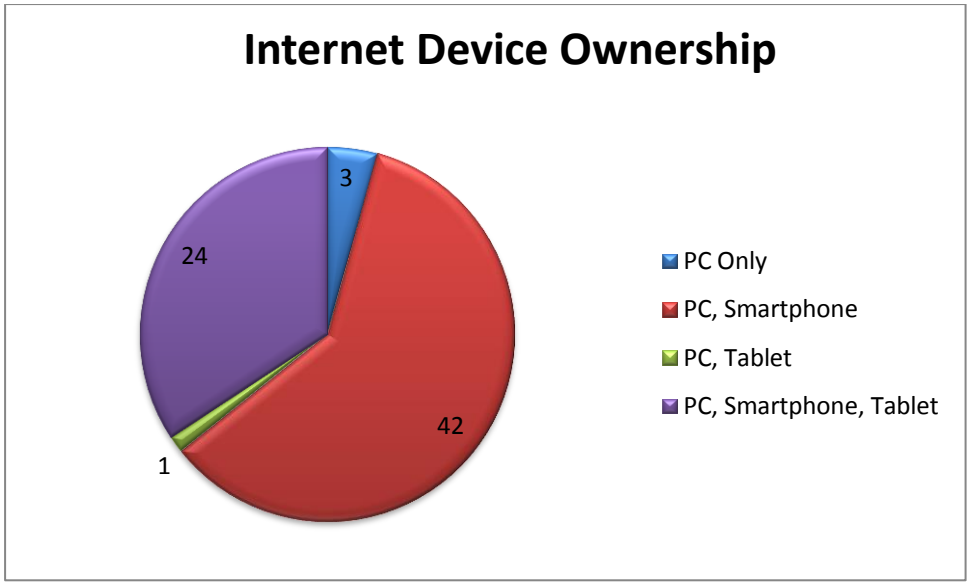

Figure 5 Internet Device Ownership

It was observed that all 70 of the respondents had access to a PC and that 66 of the respondents would use a smartphone, which would support the literature on the point about South Africa having the highest usage of technology and diffusion of smartphones in Africa. Only 3 of the respondents stated that they had their PC only and 1 respondent mentioned that they would use a tablet in addition to owning a PC. Also, all the respondents had means of connecting to the internet, through various means such as Fibre internet, Wireless Local Area Networks (WLAN) or mobile routers, which yields support for the literature on the fact that there is greater internet access in South Africa than in other African countries.

Crowdsourcing Experience

Figure 6 shows the bar graph representing the number of respondents that have the corresponding range of years of crowdsourcing experience.

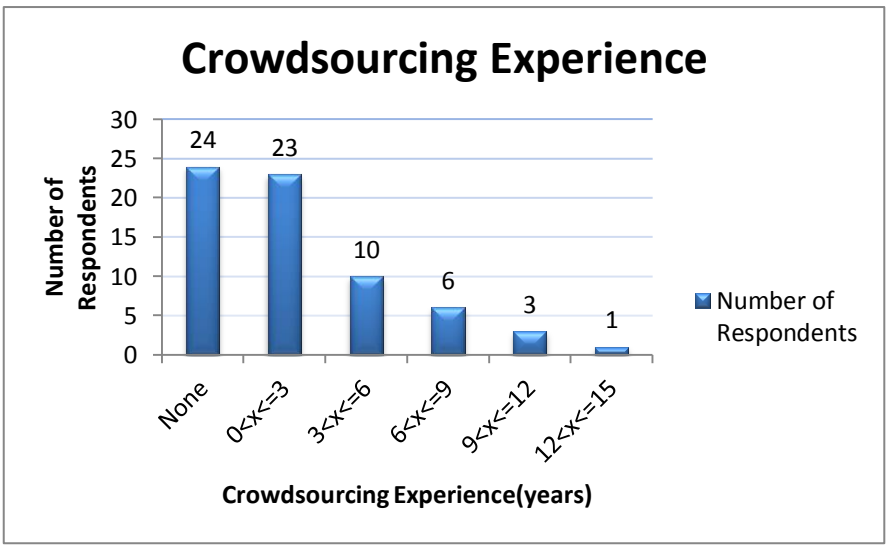

Figure 6 Crowdsourcing Experience Bar Graph

The majority of respondents, which were a total of 43, had some crowdsourcing experience and stated the amount of experience they had participating in crowdsourcing activities, which was to be expected as a lot of the respondents had some basic and advanced ICT skills and had access to technologies. However, there were also a significant number of people, 24 respondents, who mentioned that they had no experience with crowdsourcing and had therefore not participated on crowdsourcing platforms. There were 3 other respondents who were not counted in this bar graph as they had not stated the amount of crowdsourcing experience they had even though all three respondents had participated in crowdsourcing platforms before.

Of the 43 respondents that had crowdsourcing experience, 23 people had a minimum experience of 3 years or less. A few individuals had less than a year of experience participating in crowdsourcing. Only 4 individuals had participated in crowdsourcing activities for a more extended period, at 9 years or more. The other 16 individuals had between 3 to 9 years of experience with crowdsourcing, meaning that most people with crowdsourcing experience had minimal experience with crowdsourcing. The descriptive statistics showing the values for the mean, median and the standard deviation demographic variables are shown in Table 2.

Table 2 Descriptive Statistics for Demographic Variables

Descriptive Statistics (Demographic Variables)							
Variable	**Valid N**	**Mean**	**Median**	**Mode**	**Minimum**	**Maximum**	**Std.Dev.**
Age	70	2.40	2.00	2	1	5	1.11
Gender	70	1.59	2.00	2	1	3	0.52
Education	70	3.49	4.00	4	1	5	1.07
Crowdwork Experience(Year Group)	67	1.16	1.00	0	0	5	1.23
Electronic Devices	70	2.66	2.00	2	1	4	1.01

With the demographics in Table 2, the data for each of the demographics were observed to resemble an approximate normal distribution as the mean, median and mode for each of the demographic variables were approximately close to each other. For the age demographic, the mean, median and mode were close to a value of 2, which signified that most respondents on average were of the age group of 26 – 35 years as shown in figure 2. For the gender graphic, the values for the mean, median and mode were approximately close to 2, implying that most respondents were of the female gender group, as denoted by the value 2 as shown in Figure 3. With regards to the education, the mean, median and mode values were reasonably close to a value of 4, which indicated that most respondents had a bachelor's degree as signified by the value 4 and displayed in Figure 4.

Concerning crowdsourcing or crowdwork experience, the mean and median had values close to 1, whereas the mode had a value of 0. The result for crowdwork experience indicated that though a respondent on average would have under 3 years of crowdsourcing experience, as denoted by the mean and median values close to 1, most respondents in the sample had no crowdsourcing

experience, as denoted by the mode value of 0, and shown in Figure 6. For electronic devices, the mean, median and mode had values reasonably close to 2, implying that most respondents on average had a PC and a smartphone, as denoted by the value 2 and shown in the pie chart in figure 5.

5.1.2 Descriptive Statistics for Digital Labour Constructs

There were also descriptive statistics used for the main constructs in the digital labour framework in Figure 1a, initial expectations, expectations from experience, barriers, attitudes, intention to participate, initial participation and continued participation. The variables for the main constructs were derived from the likert-scale questions in the survey questionnaire which were asked based on the constructs. As the aspects for both initial and experiential expectations were very similar, the likert-scale questions around digital labour expectations could be used for both constructs. The likert-scale questions contained certain statements of facts around the constructs that the respondent would respond to by either choosing to strongly agree with, fairly agree with, stay neutral on, somewhat disagree or strongly disagree with the statement. The respondents' answers were denoted by scores of 1 to 5 corresponding with the responses from strongly disagree to strongly agree respectively. A 5-point interval scale was used for each of the likert-scale questions.

Table 3 shows statistics for the variables for the initial expectations construct, for those respondents who had no crowdsourcing experience and had initial, perceived views about crowdsourcing activities. For the expectations variables, if the respondent had crowdsourcing experience, the expectations would represent the experiential expectations construct. However, if the respondent had no crowdsourcing experience, as with the statistics in Table 3, the expectations variables would represent initial expectations. For each variable of the initial expectations construct, the likert-scale question, from which the variable is derived, is mentioned in brackets after the variable name (e.g. 'LSQ1' would stand for Likert-Scale Question one). Also, for the variable names, the term 'Expct' would stand for expectations, which could be used for either initial or experiential expectations. For the case of the statistics in Table 3, the variables would represent the aspects of the initial expectation construct.

Table 3 Descriptive Statistics for Initial Expectations

Descriptive Statistics (Initial Expectations Variables)						
Variable	**Valid N**	**Mean**	**Median**	**Minimum**	**Maximum**	**Std.Dev.**
ExpctOpportunity (LSQ1)	24	3.75	4	1	5	0.94
ExpctCompensation (LSQ2)	24	2.92	3	1	5	1.02
ExpctLivingWage (LSQ3)	24	3.08	3	1	5	1.10
ExpctDigitalSkill (LSQ4)	24	3.92	4	1	5	0.93
ExpctInternetAccess (LSQ5)	24	4.50	5	1	5	0.93
ExpctRelationships (LSQ6)	24	3.75	4	2	5	0.94
ExpctSocialBelonging (LSQ7)	24	3.25	3	1	5	0.99
ExpctSocialMedia (LSQ8)	24	4.08	4	3	5	0.65
ExpctKnowledge (LSQ9)	24	3.79	4	2	5	0.88
ExpctProductivity (LSQ10)	24	3.21	3	1	5	1.02
ExpctSecurity (LSQ11)	24	4.17	5	1	5	1.24
ExpctRealWorldImpact (LSQ12)	24	3.38	3	1	5	1.01

Table 3 shows that 24 respondents, which is less than half of all the 70 survey respondents had no previous experience participating in crowdsourcing. The values for the test statistics, the means and the median in Table 3 appear to indicate that the respondents, on average, had certain initial expectations about digital labour that were positive and other expectations that were neutral, concerning certain issues around digital labour. For example, for the variable representing availability of digital labour opportunities (i.e. the 'ExpctOpportunity' variable), the respondents, on average, were mildly positive about expecting work opportunities in Digital Labour to be available, as indicated by the mean and median values close to a value of 4.

On the other hand, the variable representing the initial expectation of getting a living wage from doing digital work (i.e. the 'ExpctLivingWage' variable) had mean and median values close to 3. The mean and median values suggest that most respondents would be neutral regarding the initial expectation of a living wage. The initial expectations variables had mean and median values that were close to each other which would be indicative of a normal distribution. The sets of data that each of the initial expectation variables represent would, therefore, be approximately normal. Table 4 shows the descriptive statistics for the variables derived from the experiential expectations construct As with Table 3, the term 'Expct' would also stand for expectation in Table 4, while the term 'LSQ1' for example would stand for Likert-Scale Question one.

Table 4 Descriptive Statistics for Experiential Expectations

Descriptive Statistics (Experiential Expectations Variables)						
Variable	**Valid N**	**Mean**	**Median**	**Minimum**	**Maximum**	**Std.Dev.**
ExpctOpportunity (LSQ1)	46	3.78	4	1	5	0.94
ExpctCompensation (LSQ2)	46	3.57	4	1	5	1.11
ExpctLivingWage ((LSQ3))	46	3.70	4	1	5	1.05
ExpctDigitalSkill (LSQ4)	46	4.17	4	2	5	0.88
ExpctInternetAccess (LSQ5)	46	4.52	5	3	5	0.62
ExpctRelationships (LSQ6)	46	3.87	4	2	5	0.91
ExpctSocialBelonging (LSQ7)	46	3.22	3	1	5	1.01
ExpctSocialMedia (LSQ8)	46	4.11	4	2	5	0.82
ExpctKnowledge (LSQ9)	46	4.04	4	1	5	0.92
ExpctProductivity (LSQ10)	46	3.63	4	1	5	1.04
ExpctSecurity (LSQ11)	46	4.37	5	2	5	0.93
ExpctRealWorldImpact (LSQ12)	46	3.98	4	2	5	0.88

There were 46 respondents whose responses were analysed, implying that the majority of the respondents who took part in the survey had experience participating in crowdsourcing activities. Most of the mean and median values in Table 4 for the experiential expectations variables were close to 4, which would suggest that the respondents on average had fairly positive views for most of the expectations around crowdsourcing and digital labour activities. The average result for experiential expectations was observed to be more positive than the average result of initial expectations. This would mean that the respondents with crowdsourcing experience had higher expectations of what they would require from digital labour than the other 24 respondents. The mean and median values would suggest that the experience for an average respondent would have a fairly positive effect on a respondent's views about the expectations around digital labour.

As an example, the variable, 'ExpctInternetAccess, had values for its mean and median which were close to 5, indicating that respondents had a strongly positive expectation that internet access would be available for individuals participating in online work. Only the variable, 'ExpctSocialBelonging', had mean and median values that were close or equal to 3. From the mean and median scores for the 'ExpctSocialBelonging' variable, the respondents on average would seem to have a neutral view of the expectation of obtaining a social belonging on platforms when participating in digital labour. The mean and median values for all the variables in Table 4 were close to each other which meant that the data represented by each of the variables resembled a normal distribution.

Table 5 shows the descriptive statistics for the variables that are representative of the aspects of the Barriers construct in Figure 1a. For each variable name, the term 'Bar' denoted that the variable was a barrier. Also, notably for the scores representing the respondents' answers, the variables, BarRace, BarCitizenship, BarDigitalSkills, BarInternetCost, BarInternetPolicy, BarCompetency and BarInfoSecurity each had their scores reverse numbered because the questions that the variables represented were negatively worded with respect to the decision to participate in digital labour. So for each variable, the higher the score was, the less effect that the barrier that represented by a variable, would have on the decision to participate in digital work activities.

Table 5 Descriptive Statistics for Barriers Construct

Descriptive Statistics (Barriers Construct Variables)						
Variable	Valid N	Mean	Median	Minimum	Maximum	Std.Dev.
BarRace (LSQ13)	70	3.11	3	1	5	1.31
BarCitizenship (LSQ14)	70	2.76	2	1	5	1.33
BarTechAccess (LSQ15)	70	4.04	4	2	5	0.86
BarInternetCost (LSQ16)	70	2.51	2	1	5	0.94
BarInternetPolicy (LSQ17)	70	2.34	2	1	5	0.96
BarPhoneAccess (LSQ18)	70	3.39	4	1	5	1.07
BarWorkBurden (LSQ19)	70	3.49	4	1	5	1.00
BarWorkBalance (LSQ20)	70	3.56	4	1	5	0.97
BarDigitalSkills (LSQ21)	70	1.47	1	1	5	0.74
BarCompetency (LSQ22)	70	2.06	2	1	5	1.08
BarInfoSecurity (LSQ23)	70	3.03	3	1	5	1.04

The results for the means and the medians of the variables in Table 5 seem to show that the respondents on average had their views negatively impacted considerably by some of the barriers around participation in crowdsourcing activities. However, the results also show that respondents on average did not have their views negatively impacted much by some of the other barriers around participation in crowdsourcing and digital labour. For the variables such as BarDigitalSkills and BarInternetCost, their means and medians were close to 2 for BarInternetCost and 1 for BarDigitalSkills, implying that most respondents' views around crowdsourcing activities were considerably and even strongly impacted negatively by the barriers, Digital Skills and the cost of internet access respectively.

Meanwhile, for variables such as the BarTechAccess and BarWorkBurden, their means and medians had scores close to or equal to 4, which indicates that the respondents' views about crowdsourcing activities were not negatively impacted much by the barriers around accessing technologies used for digital work and the burden with digital work, respectively. The variables that represented the barriers around race and Security of personal information (i.e. BarRace and BarInfoSecurity respectively) were the only variables that recorded neutral answers from the respondents overall. The mean and median scores for all the variables were reasonably close to each other and therefore represented data that resembled an approximately normal distribution.

Table 6 shows the descriptive statistics for the variables that represent the constructs for attitudes, the intention to participate, initial participation and continued participation in Digital Labour. For the first 17 variables, the prefix 'Att' denoted the attitudes construct that the variables would represent. The 'ParticipationIntention' variable represented the intentions to participate in digital labour for all the survey respondents. The variable 'InitialParticipation' corresponded to the views of all the survey respondents concerning the actual or initial participation in digital labour. The'ContinuedParticipation' variable corresponded to the responses from the survey respondents who had participated in crowdsourcing platforms and who yielded their responses to the question around the willingness to continue participating in crowdsourcing platforms.

Table 6 Description Statistics for Attitudes and Participation Variables

Descriptive Statistics (Attitudes Variables and Participation Constructs)						
Variable	Valid N	Mean	Median	Minimum	Maximum	Std.Dev.
AttUnemployment (LSQ24)	70	4.00	4	1	5	0.90
AttLivingPay (LSQ25)	70	3.17	3	1	5	1.10
AttWorkOpportunity (LSQ26)	70	4.10	4	2	5	0.84
AttTechnologyUse (LSQ27)	70	4.14	4	2	5	0.89
AttWorkLocation (LSQ28)	70	4.60	5	3	5	0.62
AttDigitalSkills (LSQ29)	70	3.60	4	1	5	0.95
AttCareerGoals (LSQ30)	70	3.64	4	1	5	0.92
AttWorkCohesion (LSQ31)	70	3.36	3	1	5	0.87
AttCommunication (LSQ32)	70	3.21	3	1	5	1.05
AttRelationships (LSQ33)	70	3.96	4	2	5	0.81
AttCompetence (LSQ34)	70	3.06	3	1	5	1.05
AttWorkSatisfaction (LSQ35)	70	3.44	4	1	5	1.04
AttWorkAlternatives (LSQ36)	70	3.24	3	1	5	0.98
AttOnlineFraud(LSQ37)	70	2.69	3	1	5	1.04
AttRealWorldImpact (LSQ38)	70	3.70	4	2	5	0.82
AttInfoSecurity (LSQ39)	70	2.96	3	1	5	1.03
AttCrowdworkJobSecurity (LSQ40)	70	3.37	3	1	5	1.04
ParticipationIntention (LSQ1b)	70	3.97	4	1	5	0.92
InitialParticipation (LSQ41)	70	3.89	4	1	5	0.89
ContinuedParticipation (LSQ42)	46	4.00	4	1	5	0.98

For the attitudes variables in table 6, the majority of the mean and median values were close to 4 or greater, which indicated that for the respondents on average, their reactions to the majority of attitudes toward digital work activities were fairly positive. For example, for the variable 'AttUnemployment', the mean and median values were equal to 4 indicating that most respondents were fairly positive that unemployment would be reduced through participation in digital labour. Moreover, for the variable 'AttWorkSatisfaction', the respondents on average had a fairly positive attitude to the idea that participating in digital work activities can be enjoyable and satisfying, as denoted by the mean and median values that were reasonably close and equal to 4.

However, eight attitude variables recorded neutral scores for the means and medians, which signified that the respondents also had a notable number of neutral attitudes around digital work activities. As an example, the variable 'AttLivingPay' recorded values close to 3 for the mean and the median which would suggest that the respondents on average were undecided on their attitude concerning adequate compensation for participating in digital labour to sustain a living. Also, for the variable "AttWorkAlternatives", the mean and median had scores close to 3, signifying that most respondents were undecided on their attitude concerning digital labour jobs being an alternative to traditional regular manual jobs.

For the "ParticipationIntention" variable, the mean and median values that were close to 4 indicate that on average most respondents had some interest in intending to participate in digital labour. The respondents, on average, seem to signify that they had a reasonably positive view about the initial

or actual experience with digital labour as indicated by the "InitialParticipation" variable which had mean and median values close to 4. For the "ContinuedParticipation" variable, the mean and median both had values equal to 4 indicating that respondents on average who had experience with crowdsourcing seemed fairly eager to continue participating on digital platforms. All the variables in table 6 had mean and median values that were close to each other which suggested the data that each of the variables represented were approximately normally distributed.

5.1.3 Reliability Analysis

The Cronbach Alpha method was used to test and to ascertain how well the variables representing the survey questions fit together in each construct. For reliability within the construct to be obtained, the variables had to achieve a Cronbach alpha value >0.6. If the Cronbach alpha value was less than 0.6 after analysing the variables in a construct together, certain variables would be excluded for the Cronbach Alpha value to reach above the threshold value of 0.6. Table 7 shows the variables in the initial expectations along with the corresponding statistics and the Cronbach alpha value.

Table 7 Reliability Analysis Statistics for Initial Expectations

Summary for scale: Mean=43.65 **Std.Dv.**=6.54 **Valid** N:24 **(Initial Expectations Construct Variables)** **Cronbach alpha**: 0.79 **Standardized alpha:** 0.80 **Average inter-item corr.:** 0.27					
Variable	**Mean if (deleted)**	**Var. if (deleted)**	**StDv. if (deleted)**	**Itm-Totl (Correl.)**	**Alpha if (deleted)**
ExpctOpportunity (LSQ1)	39.91	33.64	5.80	0.58	0.76
ExpctCompensation (LSQ2)	40.70	33.08	5.75	0.60	0.75
ExpctLivingWage (LSQ3)	40.61	34.50	5.87	0.41	0.77
ExpctDigitalSkill (LSQ4)	39.74	32.89	5.73	0.67	0.75
ExpctInternetAccess (LSQ5)	39.17	34.84	5.90	0.48	0.77
ExpctRelationships (LSQ6)	39.91	37.99	6.16	0.18	0.80
ExpctSocialBelonging (LSQ7)	40.43	40.16	6.34	-0.02	0.81
ExpctSocialMedia (LSQ8)	39.57	35.12	5.93	0.69	0.76
ExpctKnowledge (LSQ9)	39.87	35.07	5.92	0.49	0.77
ExpctProductivity (LSQ10)	40.43	36.16	6.01	0.30	0.79
ExpctSecurity (LSQ11)	39.52	33.03	5.75	0.45	0.77
ExpctRealWorldImpact (LSQ12)	40.30	34.12	5.84	0.49	0.77

The initial expectations construct was shown in Table 7 to have a Cronbach Alpha of 0.80 when its corresponding variables were fitted together. The Cronbach Alpha value suggested that the questions suited the construct of initial expectations very fittingly. Table 8 displays the variables in the experiential expectations construct along with the relevant statistics and the Cronbach Alpha value as well.

Table 8 Item Analysis Statistics for Experiential Expectations

Summary for scale: Mean=46.96 **Std.Dv.**=6.50 **Valid** N:46 **(Experiential Expectations Construct Variables)** **Cronbach alpha:** 0.82 **Standardized alpha:** 0.82 **Average inter-item corr.:** 0.29					
Variable	**Mean if (deleted)**	**Var. if (deleted)**	**StDv. if (deleted)**	**Itm-Totl (Correl.)**	**Alpha if (deleted)**
ExpctOpportunity (LSQ1)	43.17	34.71	5.89	0.52	0.80
ExpctCompensation (LSQ2)	43.39	32.93	5.74	0.57	0.80
ExpctLivingWage (LSQ3)	43.26	32.19	5.67	0.68	0.79
ExpctDigitalSkill (LSQ4)	42.78	34.82	5.90	0.56	0.80
ExpctInternetAccess (LSQ5)	42.43	37.38	6.11	0.47	0.81
ExpctRelationships (LSQ6)	43.09	37.21	6.10	0.30	0.82
ExpctSocialBelonging (LSQ7)	43.74	37.67	6.14	0.22	0.83
ExpctSocialMedia (LSQ8)	42.85	34.48	5.87	0.65	0.79
ExpctKnowledge (LSQ9)	42.91	33.47	5.79	0.67	0.79
ExpctProductivity (LSQ10)	43.33	33.05	5.75	0.61	0.79
ExpctSecurity (LSQ11)	42.59	38.55	6.21	0.17	0.83
ExpctRealWorldImpact (LSQ12)	42.98	36.80	6.07	0.35	0.82

With the experiential expectations construct, the Cronbach Alpha value was 0.82. The high Cronbach alpha value suggested that the questions represented by the variables in Table 8 suited the experiential expectations construct appropriately. None of the questions needed to be removed from the construct. In Table 9, the variables belonging to the barriers construct are shown along with the relevant statistics and the Cronbach alpha value for the variables.

Table 9 Item Analysis Statistics for Barriers Construct

Summary for scale: Mean=12.20 **Std.Dv.**=3.36 **Valid** N:70 **(Barriers Construct Variables)** **Cronbach alpha:** 0.603 **Standardized alpha:** 0.579 **Average inter-item corr.:** 0.24					
variable	**Mean if (deleted)**	**Var. if (deleted)**	**StDv. if (deleted)**	**Itm-Totl (Correl.)**	**Alpha if (deleted)**
BarRace (LSQ13)	9.09	5.76	2.40	0.59	0.39
BarCitizenship (LSQ14)	9.44	6.53	2.56	0.42	0.51
BarInternetCost (LSQ16)	9.69	8.96	2.99	0.24	0.60
BarDigitalSkills (LSQ21)	10.73	9.88	3.14	0.16	0.63
BarInternetPolicy (LSQ17)	9.86	8.12	2.85	0.39	0.53

The Barriers construct had 6 variables representing the digital labour barriers removed. The variables had to be removed one at a time until the 5 variables in Table 9 and the Cronbach alpha reached a value of 0.603, which is only marginally greater than 0.6. The variables associated with the attitudes construct are presented in Table 10, along with the Cronbach alpha and other relevant statistics.

Table 10 Item Analysis Statistics for Attitudes Construct

Summary for scale: Mean=60.24 **Std.Dv.**=8.62 **Valid** N:70 **(Attitudes Construct Variables)** **Cronbach alpha:** 0.84 **Standardized alpha:** 0.85 **Average inter-item corr.:** 0.26					
Variable	**Mean if (deleted)**	**Var. if (deleted)**	**StDv. If (deleted)**	**Itm-Totl (Correl.)**	**Alpha if (deleted)**
AttUnemployment	56.24	63.81	7.99	0.60	0.83
AttLivingPay	57.07	63.55	7.97	0.48	0.84
AttWorkOpportunity	56.14	63.58	7.97	0.68	0.83
AttTechnologyUse	56.10	70.23	8.38	0.15	0.85
AttWorkLocation	55.64	70.06	8.37	0.27	0.84
AttDigitalSkills	56.64	65.34	8.08	0.46	0.84
AttCareerGoals	56.60	61.87	7.87	0.73	0.82
AttWorkCohesion	56.89	65.53	8.10	0.50	0.83
AttCommunication	57.03	66.54	8.16	0.33	0.84
AttRelationships	56.29	66.72	8.17	0.45	0.84
AttCompetence	57.19	62.87	7.93	0.56	0.83
AttWorkSatisfaction	56.80	62.02	7.88	0.62	0.83
AttWorkAlternatives	57.00	63.37	7.96	0.57	0.83
AttOnlineFraud	57.56	69.73	8.35	0.14	0.85
AttRealWorldImpact	56.54	65.42	8.09	0.54	0.83
AttInfoSecurity	57.29	70.66	8.41	0.09	0.86
AttCrowdworkJobSecurity	56.87	61.88	7.87	0.63	0.83

For the attitudes construct, all the questions associated with the digital labour attitudes were found to be a very suitable fit when combined, as shown by the variables in Table 10. The Cronbach Alpha had a value significantly greater than the threshold value at 0.84, which signifies that the attitudes variables combined effectively and were very reliable.

5.1.4 Factor Analysis

The Factor analysis method was performed on the variables from the reliability analysis to test if valid factors could be formed from a large number of questions that could become a suitable fit for the main constructs in Figure 1a. The Factor Analysis was performed separately for each of the main constructs. For each of the main constructs, the variables that fit well within each construct from the reliability analysis results were selected for performing Factor Analysis. Four sets of factor analysis results for the main constructs barriers, initial expectations, experiential expectations and attitudes where produced as a result. Table 11 shows the factor analysis results for the initial expectations variables, which represented the expectations of the survey respondents who had no experience participating in crowdsourcing work.

Table 11 Factor Analysis Table for Initial Expectations

Factor Loadings (Varimax normalized) (Initial Expectations Construct) Extraction: Principal components (Marked loadings are >0.60)				
Variable	**Factor (1)**	**Factor (2)**	**Factor (3)**	**Factor (4)**
ExpctRelationships	0.46	-0.64	-0.07	0.02
ExpctInternetAccess	0.39	0.56	0.23	0.57
ExpctDigitalSkill	0.44	0.45	0.56	0.37
ExpctLivingWage	-0.07	0.21	0.88	0.12
ExpctCompensation	0.08	0.02	0.85	0.16
ExpctOpportunity	0.35	0.17	0.59	0.26
ExpctSocialBelonging	0.09	-0.95	-0.13	0.15
ExpctSocialMedia	0.88	-0.02	0.24	0.14
ExpctKnowledge	0.78	-0.27	0.11	0.07
ExpctProductivity	0.28	-0.08	0.68	-0.41
ExpctSecurity	0.06	-0.24	0.21	0.87
ExpctRealWorldImpact	0.56	0.07	-0.02	0.62
Expl.Var	2.48	2.03	2.81	1.92
Prp.Totl	0.21	0.17	0.23	0.16

In table 11 there were four factors formed for the construct of initial expectations. For the initial expectations variables in Table 11, the factor loadings that were highlighted and considered were the ones that were greater than 0.6, so that the most significant variables, that did not have problems of being significantly loaded onto multiple factors, would be selected. For the first factor, the variables 'ExpctSocialMedia' and 'ExpctKnowledge' were significantly loaded onto Factor 1 with ExpctSocialMedia having the highest factor loading. The variables 'ExpctSocialBelonging' and 'ExpctRelationships' were significantly loaded onto Factor 2 with the 'ExpctSocialBelonging' having the highest factor loading. Meanwhile, the variables 'ExpctLivingWage', 'ExpctCompensation' and 'ExpctProductivity' were found to be significantly loaded onto Factor 3, with ExpctLivingWage having the highest factor loading. For factor 4, the variable that was significantly loaded onto it was 'ExpctSecurity'. The four factors were formed and identified as listed below:

Factor 1: ExpctSocialMedia – the initial expectation of being able to use social media for sharing ideas and promoting innovation, would consequently affect the initial expectation of benefitting from knowledge creation and sharing amongst communities on digital labour platforms.

Factor 2: ExpctSocialBelonging – the initial expectation of obtaining a social belonging on digital labour platforms would also influence the initial expectation of getting social relationships and connections

Factor 3: ExpctLivingWage - The initial expectation of earning a living on digital labour platforms would influence the initial expectations of earning fair compensation for participating in digital work and becoming more productive on digital platforms.

Factor 4: ExpctSecurity – There is a significant initial expectation that there would be security and privacy of personal information when participating in digital labour platforms for Factor 4.

Table 12 shows the factor analysis results for the variables in the experiential expectations construct, for those respondents who have participated in crowdsourcing activities.

Table 12 Factor Analysis table for Experiential Expectations

Factor Loadings (Varimax normalized) (Experiential Expectations Construct) Extraction: Principal components (Marked loadings are >0.60)					
Variable	**Factor (1)**	**Factor (2)**	**Factor (3)**	**Factor (4)**	**Factor (5)**
ExpctOpportunity	0.65	0.26	-0.19	0.42	-0.05
ExpctCompensation	0.84	0.02	0.09	-0.18	0.18
ExpctLivingWage	0.87	0.02	-0.14	0.19	0.25
ExpctDigitalSkill	0.57	-0.06	0.30	0.06	0.40
ExpctInternetAccess	0.34	0.10	-0.01	0.07	0.77
ExpctRelationships	-0.04	0.68	0.04	0.07	0.57
ExpctSocialBelonging	0.09	0.89	-0.04	-0.02	0.00
ExpctKnowledge	0.62	0.31	0.40	0.15	0.05
ExpctSocialMedia	0.50	0.36	0.56	0.23	-0.04
ExpctRealWorldImpact	0.07	0.03	0.18	0.92	0.08
ExpctSecurity	-0.04	-0.09	0.89	0.10	0.03
ExpctProductivity	0.57	-0.17	0.33	0.43	0.25
Expl.Var	3.30	1.59	1.57	1.36	1.24
Prp.Totl	0.27	0.13	0.13	0.11	0.10

With regards to Table 12, there were five factors formed for the experiential expectations construct from the variables associated with the construct. The factor loadings that were greater than 0.6 were chosen so that the variables with the most significant factor loadings that were not loaded onto multiple factors, would be the variables loaded onto the relevant factor. So for the first factor, the variables, 'ExpctOpportunity', 'ExpctCompensation', 'ExpctLivingWage' and 'ExpctKnowledge' were significantly loaded onto Factor 1, with the 'ExpctLivingWage' having the highest factor loading. The variables 'ExpctRelationships' and 'ExpctSocialBelonging' were significantly loaded onto factor 2, with 'ExpctSocialBelonging' being the most significantly loaded with regards to factor 2. Meanwhile, the variable 'ExpctSecurity' was the only variable that was significantly loaded onto factor 3, whereas the variable 'ExpctRealWorldImpact' was the only variable that was significantly loaded onto factor 4. For factor 5, the variable that was significantly loaded onto it was the 'ExpctInternetAccess'. The five factors were formed and identified as listed and described below:

Factor 1: ExpctLivingWage - The experiential expectation of earning a living wage would influence the experiential expectations of obtaining further employment opportunities online more easily, benefitting from knowledge creation and sharing amongst communities on digital labour platforms, and earning fair compensation for performing digital work.

Factor 2: ExpctSocialBelonging – The experiential expectation of obtaining a social belonging on digital labour platforms would affect the experiential expectation of getting social relationships and connections

Factor 3: ExpctSecurity – There is a significant experiential expectation that there would be security and privacy of personal information on digital labour platforms for Factor 3.

Factor 4: ExpctRealWorldImpact – There is a significant experiential expectation of digital work causing a real-world impact in communities for Factor 4.

Factor 5: ExpctInternetAccess – There is a significant experiential expectation that there would be sufficient internet access available for Factor 5.

The factor loadings for the variables associated with the barriers are recorded in Table 13.

Table 13 Factor Analysis Table for Barriers

Factor Loadings (Varimax normalized) (Barriers Construct) Extraction: Principal components (Marked loadings are >0.60)			
Variable	**Factor (1)**	**Factor (2)**	**Factor (3)**
BarRace (LSQ13)	0.881	-0.185	0.131
BarCitizenship (LSQ14)	0.921	0.036	0.058
BarInternetPolicy (LSQ17)	0.117	-0.897	0.126
BarInternetCost (LSQ16)	0.018	-0.902	-0.154
BarDigitalSkills (LSQ21)	0.131	0.023	0.984
Expl.Var	1.655	1.655	1.029
Prp.Totl	0.331	0.331	0.206

For the Barriers construct, there were three factors formed for the variables listed in Table 13. The variables that were highlighted had factor loadings greater than 0.6 and were loaded onto the corresponding factor, just as with the other variables associated with constructs of initial and experiential expectations. For the first factor, there were two variables were loaded onto the factor, with the 'BarCitizenship' having the highest factor loading. Moreover, two variables were significantly loaded onto factor 2, with the 'BarInternetCost' variable having slightly higher factor loading than the 'BarInternetPolicy' variable. With factor 3, the 'BarDigitalSkills' variable was the only variable that was significantly loaded onto the factor. The factors for the Barriers construct were identified as described below:

Factor 1: BarCitizenship – the barrier of citizenship or nationality on online employment opportunities would influence the barrier of race on employment opportunities.

Factor 2: BarInternetCost – the barrier of the cost of internet access due to government policy would impact the barrier of government policy on the accessibility of the internet across various parts of South Africa.

Factor 3: BarDigitalSkills – the barrier about digital skills determining the amount of payment and benefit that is received for participating in digital labour, significantly explains Factor 3.

The variables associated with the attitudes construct in Table 14 are listed along with their factor loadings for each of the factors identified.

Table 14 Factor Analysis Table for Attitudes

Factor Loadings (Varimax normalized) (Attitudes Construct) Extraction: Principal components (Marked loadings are >0.60)						
Variable	**Factor (1)**	**Factor (2)**	**Factor (3)**	**Factor (4)**	**Factor (5)**	**Factor (6)**
AttUnemployment (LSQ24)	0.11	-0.07	0.09	0.12	0.74	0.39
AttLivingPay (LSQ25)	0.34	0.05	-0.15	-0.03	0.69	-0.12
AttWorkOpportunity (LSQ26)	0.35	0.20	0.06	0.03	0.62	0.41
AttTechnologyUse (LSQ27)	0.06	-0.21	0.73	-0.13	0.07	0.32
AttWorkLocation (LSQ28)	0.07	0.15	0.20	0.05	0.05	0.82
AttDigitalSkills (LSQ29)	0.46	-0.39	-0.05	0.35	0.36	-0.09
AttCareerGoals (LSQ30)	0.52	0.02	-0.02	0.32	0.52	0.23
AttWorkCohesion (LSQ31)	0.43	-0.20	-0.27	0.63	0.17	0.28
AttCommunication (LSQ32)	0.06	0.01	0.00	0.87	0.07	0.01
AttRelationships (LSQ33)	0.28	0.05	0.57	0.48	0.10	0.02
AttCompetence (LSQ34)	0.82	-0.20	0.09	0.20	0.12	0.18
AttWorkSatisfaction (LSQ35)	0.79	0.17	0.15	0.11	0.26	-0.04
AttWorkAlternatives (LSQ36)	0.53	0.16	0.36	-0.11	0.45	0.03
AttOnlineFraud(LSQ37)	-0.12	0.86	-0.08	0.06	0.19	0.12
AttRealWorldImpact (LSQ38)	0.12	-0.12	0.31	0.52	0.51	-0.03
AttInfoSecurity (LSQ39)	0.13	0.87	-0.05	-0.12	0.01	0.02
AttCrowdworkJobSecurity (LSQ40)	0.08	0.20	0.22	0.29	0.77	-0.12
Expl.Var	2.64	1.95	1.31	2.09	3.03	1.32
Prp.Totl	0.16	0.11	0.08	0.12	0.18	0.08

Regarding the attitudes construct, six factors were identified from the variables in Table 14. With each factor, the factor loadings that were highlighted for the variables were factor loadings that were greater than 0.6. For instance, with the first factor, two variables were significantly loaded onto factor 1, with the 'AttCompetence' variable having the highest factor loading for factor 1. Two variables were significantly loaded onto factor 2, with the 'AttInfoSecurity' variable having the greatest factor loading for factor 2. For factor 3, the 'AttTechnologyUse' variable was the only variable that was significantly loaded onto the factor. Moreover, the 'AttCommunication' variable was the single variable that loaded onto Factor 4, while factor 5 had four variables loaded onto it, with the 'AttCrowdworkJobSecurity' variable being the variable with the greatest factor loading. Factor 6 only had the variable 'AttWorkLocation' loaded onto it. The six factors that were recognized in Table 14 are expressed below:

Factor 1: AttCompetence – the attitude of digital work activities being suitable for an individual's competence and professional skills would influence the attitude of being satisfied and gaining pleasure from performing digital work.

Factor 2: AttInfoSecurity – the attitude of not being too worried overall about personal information security would affect the attitude of lacking any overall worries about online fraud.

Factor 3: AttTechnologyUse – the attitude towards owning and using more technologies in digital work activities due to digital labour participation, significantly explains factor 3.

Factor 4: AttCommunication – the attitude of considerably changing the ways of communicating due to participating in digital labour, notably explains factor 4.

Factor 5: AttCrowdworkJobSecurity - the attitude of pursuing long-term crowdsourcing jobs would influence the attitude of obtaining work opportunities through digital labour participation.

Factor 6: AttWorkLocation – the attitude of performing digital work from any location would significantly explain factor 6.

Discussion of Factor Analysis Findings

With the factor analysis for the barriers, most of the factors that emerged for the barriers were also present in the theoretical framework. The factors for the barriers construct which included the BarCitizenship, Bardigitalskills and BarInternetCost related with the aspects in Figure 1a being inclusion/exclusion of workers, digital divide, lack of technology access and the policy (aspect in Figure 1a macro construct). This result would suggest that most of the barriers that are regarded to be significant in the view around digital labour participation in theoretical studies were also found to be the most significant aspects for survey respondents.

Regarding the initial expectations, some Figure 1a aspects for the initial expectations were found to relate to the factors for the initial expectations. For instance, the initial expectations factors which were ExpctSocialMedia, ExpctSocialBelonging, ExpctLivingWage and ExpctSecurity matched with the Figure 1a aspects which would be Financial compensation, Social fulfilment, Employment opportunities, Access to Technology. However, some Figure 1 aspects such as Skills Development and Job Security were not found to relate with the initial expectations factors. The results would suggest that many of the aspects for initial expectations that are significant, in the view around digital labour participation for theoretical studies, were also found to be the most significant for the survey respondents. However for the aspects of Job security and skills development, although respondents may have found these aspects significant, they would find other factors such as obtaining a living wage or having a social belonging to be of greater importance.

With regards to the experiential expectation, many of the factors for the experiential expectations were found to relate with the Figure 1a aspects. In the case of the experiential expectations, the factors ExpctLivingWage, ExpctSocialBelonging, ExpctSecurity, ExpctRealWorldImpact, ExpctInternetAccess, and ExpctLivingWage were found to resemble the Figure 1a aspects which were Employment opportunities, Financial compensation, Skills development and Social fulfilment. The result would imply that most of the experiential expectations aspects that bear significance in the view concerning digital labour participation in the Figure 1a framework would be the experiential expectations with the most impact on the view concerning digital labour for the survey respondents.

For the attitudes, many of the attitude factors were observed to relate to Figure 1a attitude aspects. The attitude factors AttCompetence, AttInfoSecurity, AttTechnologyUse, AttCommunication, AttWorkLocation and AttCrowdworkJobSecurity resembled the Figure 1a attitude aspects such as Perceived Employment opportunities, Perceived Financial compensation, Perceived skill & career

development, Perceived digital skill development, Perceived social fulfilment Perceived networking and Perceived Job security. The result would indicate that many of the attitude aspects described in Figure 1a theories to be significant in the view regarding digital labour participation were also observed to be significant for the survey respondents.

5.1.5 Correlation and Regression Analysis

The Spearman Rank Correlation analysis method was performed for each of the propositions to test whether there were significant relationships that would exist between variables associated with the key Figure 1a constructs which were attitudes, barriers and others. The factors that were formed from conducting factor analysis for each construct were used for performing correlation analysis to help prevent the problem of multicollinearity and make sure that independent variables remain reasonably independent of each other. The correlation tables produced for relevant variables in question were also beneficial for identifying highly-correlated variables to ensure that the regression models would be significant.

The regression analysis was also performed for each of the propositions being investigated for the research to examine what the relationship was between the dependent and independent variables that represent the Figure 1a constructs. Additionally, the regression analysis would be essential for determining how much of the variation in the dependent variable in question would be explained by the independent variables. So the regression model would be useful in helping measure how much of the changes in people's attitudes or decisions toward participating in digital labour, could be effectively explained by the key aspects of digital labour such as compensation for digital work, internet access and many others, based on responses from survey respondents.

There were average variables, denoted by the term "avg" and described in Table 54b that were used in both the regression and correlation analysis tests and were formed by averaging the data of certain variables that loaded onto the same factor during the factor analysis. Also, there were average dependent variables for propositions 1, 2, 3 and 7 used for the regression and correlation analysis tests, which were described in Table 41 and Table 54b, which were formed by averaging the data of the variables that were formed in factor analysis for each construct. The average dependent variables in Table 41 represented entire constructs and were tested for normality and were each found to represent data that approximately followed a normal distribution. The main propositions are highlighted and the analyses that were done to investigate the respective propositions are described and interpreted.

Proposition 1

The first proposition stated that the barriers to digital labour would have a negative relationship with the attitudes of individuals toward digital labour. Table 15 shows the Spearman correlation coefficients for the variables associated with the constructs, attitudes and barriers. The correlations and values that are significant at the 5% significance level are highlighted in red for both the regression model and the correlation tables.

Table 15 Correlation Table for Attitudes and Barriers

Spearman Rank Order Correlations (Barriers and Attitudes) MD pairwise deleted Marked correlations are significant at p <.05							
Variables	AttCom-petence	AttInfo-Security	AttComm-unication	AttWork-Location	AttCrowdwork-JobSecurity	AttTech-nologyUse	Attitudes Avg(Prop p1)
BarCitizenship	-0.18	0.19	-0.01	-0.06	0.01	-0.18	-0.15
BarInternetCost	-0.09	-0.09	-0.06	0.02	-0.17	0.07	0.05
BarDigitalSkills	-0.05	-0.11	0.03	-0.39	-0.15	-0.34	-0.43
BarRace	0.002	0.05	-0.03	-0.10	-0.06	-0.06	-0.07
BarInternetPolicy	-0.09	-0.09	-0.18	-0.02	-0.18	0.04	0.006

For the correlation table Table 15, it was noted that most of the variables for attitudes and barriers did not correlate significantly with each other at the 5% level. Only the variable 'BarDigitalSkills' showed significant correlation with a few of the variables for attitudes which were namely 'AttWorkLocation', AttTechnologyUse and 'AttitudesAvg(Prop1)' as denoted by their red-highlighted figures for their correlation coefficients. The variable 'AttitudesAvg(Prop1)' represented the average digital labour attitudes. The regression table, Table 16 shows the relationship of the attitudes variable with a variable for barriers that correlated along with other attitudes variables.

Table 16 Regression Model Table for Attitudes and Barriers

Regression Summary for Dependent Variable: AttitudesAvg(Prop1) **(Independent Variables: Attitudes and Barriers)** **R**= 0.40 **R²**= 0.16 **Adjusted R²**= 0.15 **F**(1,68)=13.10 p<0.0006 **Std.Error of estimate:** 0.55						
N=70	**b***	**Std.Err. (of b*)**	**b**	**Std.Err. (of b)**	**t(68)**	**p-value**
Intercept			4.85	0.15	32.65	0.000000
BarDigitalSkills	-0.40	0.11	-0.33	0.09	-3.62	0.00056

In Table 16, the attitudes variable was the dependent variable and the 'BarDigitalSkills' variable was the independent variable. The regression model was shown to be significant, with the variable 'BarDigitalSkills' having a very significant relationship with the dependent variable representing the average digital labour attitude, namely 'AttitudesAvg(Prop1)', which helped to support the claim of the first proposition. With the regression model having a correlation coefficient of 40%, this result would suggest that the average attitude of a digital worker would be moderately affected by a factor of 40%, negatively for each time the barrier of digital skill takes effect. The R^2 was 16% which indicated that although the barrier of digital skill explains a significant amount of the variation of the average attitude at 16%, there was still a large amount of variation in the average attitude towards digital labour, which is unexplained by the first proposition.

Proposition 2

The second proposition expressed that the initial expectations of digital labour would have a positive relationship with people's attitude toward digital labour. To investigate the relationship between the

initial expectations and the digital labour attitudes, the correlation analysis of the initial expectation variables and the attitudes was conducted using the factors that were formed during factor analysis in addition to other initial expectations variables. Table 17 shows the correlation coefficients particularly between the variables for initial expectations and the variable for the average digital labour attitudes. The"AttitudesAvg (Prop2)" variable described in Table 17 and Table 54b was the average attitude towards digital labour for the second proposition. The data of the 'AttitudesAvg(Prop2)' variable was only for the answers of the respondents with no crowdwork experience.

Table 17 Correlation Analysis Table Initial Expectations and Average Attitude Variable

Spearman Rank Order Correlations (Attitudes and Initial Expectations Variables) MD pairwise deleted Marked correlations are significant at p <.05000	
Variable	**AttitudesAvg-(Prop2)**
ExpctSecurity	0.03
ExpctLivingWage(avg)	0.51
ExpctSocialBelonging(avg)	-0.16
ExpctSocialMedia	0.31
ExpctLivingWage	0.43
ExpctSocialBelonging	-0.25
ExpctProductivity	0.47
ExpctKnowledge	0.02
ExpctRealWorldImpact	0.12
ExpctRelationships	-0.10
ExpctInternetAccess	0.44
ExpctDigitalSkill	0.48
ExpctOpportunity	0.18

The correlation coefficients in Table 17 showed that some of the variables for initial expectations had correlations with the average attitude variable "AttitudesAvg(Prop2)". The variables "ExpctLivingWage(avg)", "ExpctLivingWage", "ExpctProductivity", "ExpctInternetAccess" and "ExpctDigitalSkill" all had significant relationships with the average attitude variable of moderate effect. The "ExpctLivingWage(avg)" variable had the highest correlation with the average attitude variable. The results in Table 17 would indicate that aspects of the initial expectations such as obtaining of a living wage, usefulness of digital skill, obtaining of internet access, digital jobs encouraging productivity would have a significant relationship with the average attitudes towards digital labour. The regression analysis was then performed with the initial expectations variables as the independent variables and the variable "AttitudesAvg (Prop2)" as the dependent variable. The regression analysis for investigating the relationship between the average digital labour attitude and the initial expectations is shown in Table 18.

Table 18 Regression Model for Attitude and Initial Expectations

Regression Summary for Dependent Variable: AttitudesAvg(Prop2) (Independent Variable: Initial Expectations) R= .70 R²= .49 Adjusted R²= .32 F(6,17)=2.74 p<.048 Std.Error of estimate: .36						
N=24	b*	Std.Err. (of b*)	b	Std.Err. (of b)	t(17)	p-value
Intercept			3.02	0.55	5.44	0.00004
ExpctLivingWage(avg)	0.45	0.19	0.20	0.08	2.38	0.03
ExpctSocialBelonging(avg)	-0.15	0.20	-0.08	0.10	-0.77	0.45
ExpctSocialMedia	0.42	0.27	0.28	0.18	1.59	0.13
ExpctKnowledge	-0.29	0.26	-0.14	0.13	-1.12	0.28
ExpctSecurity	-0.46	0.20	-0.16	0.07	-2.29	0.04
ExpctRealWorldImpact	0.17	0.21	0.07	0.09	0.81	0.43

The regression model shown in Table 18 was shown to be very significant as indicated by the low p-value. The variable, "ExpctLivingWage(avg)" was shown to have a significant, moderate, and positive relationship with the dependent variable "AttitudesAvg (Prop2)", with the p-value lower than 0.05 and the beta value of 45%. However, the "ExpctSecurity" was also shown to have a significant, moderate, negative relationship with "AttitudesAvg (Prop2)" with a p-value lower than 0.05 and a beta value of -46%. The result for the "ExpctSecurity" variable could indicate that the more people deem online security and privacy to be important, the more reluctant people may be to participate in digital labour due to the dangers of their privacy or security of their personal information being jeopardised. The relationship between "AttitudesAvg (Prop2)" and the initial expectations variables, was shown to be significant and moderately strong and would justify the second proposition. The variation in the average attitudes variable was explained by the initial expectation variables by a moderate amount of 49% which gives support for the second proposition.

Proposition 3

The third proposition expressed that the experiential expectations of digital labour would have a positive relationship with the attitude of digital workers toward digital labour. To investigate the relationship between the digital labour attitudes and experiential expectations, correlation analysis of the variables associated with the experiential expectations and attitudes constructs, was performed to examine the relationship between the variables. Table 19 shows the correlation analysis displaying some of the essential correlation coefficients, particularly between the average digital labour attitude variable and the experiential expectations variables. The variable called 'AttitudesAvg(Prop3)' denoted the average attitude toward digital labour for the third proposition. The data of the 'AttitudesAvg(Prop3)' variable was only for the answers of the respondents with crowdwork experience.

Table 19 Correlation Analysis for Crowdworkers' Attitudes Average

Spearman Rank Order Correlations (Attitudes Average and Experiential Expectation variables) MD pairwise deleted Marked correlations are significant at p <.05	
Variable	AttitudesAvg (Prop3)
ExpctLivingWage(avg)	0.50
ExpctLivingWage	0.52
ExpctInternetAccess	0.48
ExpctSocialBelonging	0.20
ExpctSocialBelonging (avg)	0.35
ExpctSecurity	0.05
ExpctRealWrldImp	0.21

In Table 19, some experiential expectations variables did have a significant relationship with the average attitude variable, "AttitudesAvg (Prop3)" while other variables did not have a significant relationship. The variables that had the strongest correlation with the 'AttitudesAvg (Prop3)' variable were "ExpctLivingWage (avg)", "ExpctInternetAccess" and "ExpctLivingWage". The results would indicate that the experiential expectations of internet access and obtaining a living wage, around digital labour did have a relationship with the average attitude towards digital labour. Table 20 shows the regression analysis examining the effect of the independent experiential expectations variables on the dependent average attitude variable.

Table 20 Regression Model for Attitudes and Experiential Expectations

Regression Summary for Dependent Variable: AttitudesAvg (Prop3) (Independent variables: Experiential Expectations) R= 0.62 R²= 0.38 Adjusted R²= 0.32 F(4,41)=6.33 p<.00046 Std.Error of estimate: 0.41						
N=46	**b***	**Std.Err. (of b*)**	**b**	**Std.Err. (of b)**	**t(41)**	**p-value**
Intercept			1.52	0.51	2.99	0.0047
ExpctLivingWage(avg)	0.36	0.14	0.17	0.068	2.58	0.014
ExpctInternetAccess	0.29	0.14	0.23	0.11	2.12	0.040
ExpctSocialBelonging	0.15	0.12	0.073	0.061	1.20	0.24
ExpctRealWorldImpact	0.075	0.12	0.042	0.070	0.60	0.55

For the regression model in Table 20, the p-value result which was less than 0.00046 would suggest that the independent variables representing the experiential expectations had a significant, moderate relationship with the dependent variable, "AttitudesAvg (Prop3)" which would yield support for the claim of the third Proposition. The R-value of 62% denoted that there was a moderately strong relationship between the initial expectations variables and the "AttitudesAvg (Prop3)" variable. The independent variables ExpctLivingWage (avg) and ExpctInternetAccess were shown to be the variables with significant, positive, mediocre individual relationships with the average attitude variable as they had beta (b*) values of 36% and 29% respectively. The R^2 value of 38% would suggest that the third proposition would moderately explain 38% of the variation in the average attitude variable. The proposition would, therefore, explain a notable amount of the variation in the average digital labour attitude towards digital labour.

Proposition 4

With regards to the fourth proposition, it stated that the attitudes of individuals toward digital labour would have a positive relationship with their intention to participate in digital labour. The relationship between the attitudes and the intention to participate variables was examined using correlation analysis. Table 21 narrowly focuses on showing the correlation of the variables representing attitudes with the "ParticipationIntention" variable.

Table 21 Correlation Analysis Table for Participation Intention and Attitudes

Spearman Rank Order Correlations (Attitudes and Participation Intention for All Respondents) MD pairwise deleted Marked correlations are significant at p <.05	
Variable	**Participation-Intention**
AttCompetence	0.36
AttInfoSecurity	0.21
AttWorkLocation	0.30
AttCrowdworkJobSecurity	0.33
AttTechnologyUse	0.04
AttRealWorldImpact	0.33
AttOnlineFraud	0.22
AttWorkAlternatives	0.59
AttWorkSatisfaction	0.46
AttRelationships	0.34
AttWorkCohesion	0.32
AttCareerGoals	0.43
AttDigitalSkills	0.38
AttInfoSecurity(avg)	-0.23
AttCrowdworkJobSecurity(avg)	0.44
AttitudesAvg(Prop1)	0.12
ParticipationIntention	1.00
InitialParticipation	0.81
AttWorkOpportunity	0.51
AttLivingPay	0.28
AttUnemployment	0.29

From the correlation analysis in Table 21, many of the variables representing the attitudes construct had significant, moderate correlations with the "ParticipationIntention" variable. The variables "AttWorkAlternatives" and "AttWorkOpportunity" had, relative to other attitudes variables, the highest correlations with "ParticipationIntention" with coefficients of 0.59 and 0.51 respectively. The relationship between the attitudes variables with the ParticipationIntention variable was further investigated using backwards stepwise regression, to produce the strongest regression model. The stepwise regression produced from the backward stepwise regression performed is shown in Table 49. The resulting regression model produced is shown in Table 22.

Table 22 Regression Model for Attitudes and Participation Intention

Regression Summary for Dependent Variable: ParticipationIntention (Independent Variables: Attitudes) R= .67 R²= .45 Adjusted R²= .43 F(3,66)=18.2 p<.00000 Std.Error of estimate: .69						
N=70	b*	Std.Err. (of b*)	b	Std.Err. (of b)	t(66)	p-value
Intercept			2.12	0.52	4.05	0.0001
AttCrowdworkJobSecurity(avg)	0.27	0.11	0.33	0.13	2.52	0.01
AttTechnologyUse	-0.22	0.095	-0.23	0.098	-2.34	0.02
AttWorkAlternatives	0.51	0.11	0.48	0.10	4.67	0.00002

In the resulting regression model in Table 22, all the attitudes variables were discovered to have a very significant relationship with the dependent "ParticipationIntention" variable, as shown by their p-values. The variable AttWorkAlternatives had the strongest relationship with "ParticipationIntention" with a beta value of 51%. The variable "AttCrowdworkJobSecurity(avg)" also had a positive relationship with the "ParticipationIntention" variable of mediocre effect with a beta value of 27%. The digital labour attitudes variables had a significant moderate relationship with the dependent "ParticipationIntention" at an R-value of 67%, which yielded considerable support for the claim of the fourth proposition. The R^2 value for the regression model was 45% indicating that the attitudes variables were able to explain 45% of the variation in "ParticipationIntention". So the fourth proposition explained a considerable amount of the variation in the intention to participate in digital labour.

Proposition 5

Concerning the fifth proposition, it stated that the attitudes of digital workers would positively affect their initial participation in digital labour. To explore the relationships and the attitudes of digital workers and the initial participation in digital labour, correlation analysis was performed to examine the correlations between the variables representing the attitudes and the initial participation constructs. In Table 23, the initial participation variable was observed to correlate with most of the attitudes variables. The correlation values for the attitudes variables showed that most of the attitudes variables had significant moderate correlations with the initial participation in digital labour.

The AttWorkOpportunity had the highest correlation with the "InitialParticipation" variable with a correlation value of 55%. The attitudes variables "AttWorkAlternatives" and "AttCrowdworkJobSecurity(avg)" also had some of the highest correlations with the "InitiaParticipation" variable with values of 49% and 48% respectively. For the initial participation and attitudes variables, backwards step regression analysis was performed as many of the attitudes variables were correlated to each other. The backwards stepwise regression method was conducted to prevent the problem of multicollinearity. The results for the stepwise regression analysis performed are shown in Table 50 in the Appendices Section. Table 24 shows the regression model for the relationship between the dependent InitialParticipation variable and the independent attitudes variables.

Table 23 Correlation Analysis Table for Attitudes, Participation Intention and Initial Participation

Spearman Rank Order Correlations (Attitudes and Initial Participation All Respondents) MD pairwise deleted Marked correlations are significant at p <.05	
Variable	**Initial-Participation**
AttCompetence	0.26
AttInfoSecurity	0.31
AttWorkLocation	0.19
AttCrowdworkJobSecurity	0.32
AttTechnologyUse	0.04
AttRealWorldImpact	0.36
AttOnlineFraud	0.22
AttWorkAlternatives	0.49
AttWorkSatisfaction	0.42
AttRelationships	0.34
AttWorkCohesion	0.27
AttCommunication	0.22
AttCareerGoals	0.46
AttDigitalSkills	0.43
AttInfoSecurity(avg)	-0.29
AttCrowdworkJobSecurity(avg)	0.48
ParticipationIntention	0.81
InitialParticipation	1.00
AttWorkOpportunity	0.55
AttLivingPay	0.30
AttUnemployment	0.32

Table 24 Regression Model for Initial Participation and Attitudes

Regression Summary for Dependent Variable: InitialParticipation (Independent Variables: Attitudes) R= .62 R²= .39 Adjusted R²= .36 F(3,66)=14.06 p<.00000 Std.Error of estimate: .71						
N=70	**b***	**Std.Err. (of b*)**	**b**	**Std.Err. (of b)**	**t(66)**	**p-value**
Intercept			2.01	0.54	3.72	0.0004
AttCrowdworkJobSecurity(avg)	0.38	0.11	0.44	0.13	3.30	0.002
AttTechnologyUse	-0.21	0.10	-0.21	0.10	-2.08	0.04
AttWorkAlternatives	0.36	0.12	0.33	0.11	3.11	0.003

For the regression model in Table 24, the p-value denoted that the relationship between "InitialParticipation" and the independent variables corresponding to the digital labour attitudes was very significant. The significance of the regression model in Table 24 gave some justification for the claim of the fifth proposition. The variables "AttCrowdworkJobSecurity(avg)" and "AttWorkAlternatives" each had significant, moderate relationships with the "InitialParticipation" variable with beta values of 38% and 36% respectively. The "AttTechnology" had a negative relationship with "InitialParticipation" at a beta value -21%, which was weaker than that of the other attitudes variables in its magnitude. The attitudes variables combined had a notable, moderate relationship with the "InitialParticipation" variable at an R value of 62% which granted support for

the claim of the fifth proposition. The R^2 value of 39% suggested that in the regression model in Table 24, a moderate amount of the variation in "InitialParticipation" could be explained by the attitudes variables and hence by the claim of the fifth proposition.

Proposition 6

When considering the sixth proposition, it stated, "The intention to participate in digital labour would have a positive relationship with the Initial Participation in Digital Labour." The correlation analysis performed in Table 23 showed that the variables "InitialParticipation " and "ParticipationIntention" had a very high correlation of 81%. The regression model for the independent "ParticipationIntention" variable and the dependent "InitialParticipation" variable was shown in Table 25.

Table 25 Regression Model for Initial Participation and Participation Intention

Regression Summary for Dependent Variable: InitialParticipation (Independent Variable: ParticipationIntention) R= .83 R²= .69 Adjusted R²= .68 F(1,68)=148.12 p<.00 Std.Error of estimate: .50						
N=70	b*	Std.Err. (of b*)	b	Std.Err. (of b)	t(68)	p-value
Intercept			0.68	0.27	2.52	0.01
ParticipationIntention	0.83	0.07	0.81	0.07	12.17	0.00

Regarding the regression model, there was a very significant, strong relationship between "InitialPaticipation" and "ParticipationIntention", with a high R value of 83% which would provide strong support for the sixth proposition. The R^2 value of 69% for the regression model indicated that a large amount of the variation in the "InitialParticipation" could be explained by the "ParticipationIntention" by an amount of 69%. Furthermore, as an extension to the sixth proposition, more regression analysis was run with the attitudes variables and the "ParticipationIntention" variables as the independent variables and the" InitialParticipation" variable as the dependent variable. The backward stepwise regression method was performed to prevent multicollinearity, especially amongst the attitudes variables. The results for the stepwise regression analysis that was conducted are displayed in Table 51. The resulting regression model was shown in Table 26.

Table 26 Regression Model for Initial Participation, Participation Intention and Attitudes

Regression Summary for Dependent Variable: InitialParticipation (Independent variables: ParticipationIntention, Attitudes) R= .84 R²= .71 Adjusted R²= .70 F(2,67)=82.46 p<.00 Std.Error of estimate: .49						
N=70	b*	Std.Err. (of b*)	b	Std.Err. (of b)	t(67)	p-value
Intercept			0.29	0.31	0.95	0.35
ParticipationIntention	0.81	0.07	0.79	0.06	12.37	0.00
AttCommunication	0.16	0.07	0.14	0.06	2.44	0.02

For the regression model, the ParticipationIntention variable had a very significant and strong relationship with the dependent "InitialParticipation" variable, with a very low p-value and a beta value of 81%. The attitude variable "AttCommunication" was the only attitude variable to have a significant relationship with the "InitialParticipation" for this regression model. "AttCommunication", though, had a weak relationship with the InitialParticipation variable at a beta value of 16%. The independent variables, "AttCommunication" and "ParticipationIntention" had a very significant relationship with the "InitialParticipation" variable with an R value of 84%. The R^2 value of 71% would signify that the variation in "InitialParticipation" would be largely explained by the independent variables "ParticipationIntention" and "AttCommunication". So the intention to participate in digital labour and the digital labour attitudes would largely explain the variation in the initial participation of an individual in digital labour.

Proposition 7

With regards to the seventh proposition, it expressed the idea that the initial participation would have a positive relationship with the experiential expectations of digital labour. It was essential to analyse the relationship outlined in the sixth proposition to discover how the experiences of digital workers shape their views and expectations around digital labour. To explore with depth, the relationship stated in proposition seven, correlation analysis was performed for many of the experiential expectations variables, alongside the average experiential expectations variable named "ExpectationsAvg(Prop7)" and the "InitialParticipation" variable. Table 27 shows the correlation coefficients for the "InitialParticipation" variable and each of the experiential expectations variables.

Table 27 Correlation Analysis Table for Experiential Expectations Average and Initial Participation

Spearman Rank Order Correlations (Experiential expectations and Initial Participation) MD pairwise deleted Marked correlations are significant at p <.05	
Variables	Initial-Participation
ExpctLivingWage(avg)	0.44
ExpctLivingWage	0.46
ExpctCompensation	0.37
ExpctSecurity	0.10
ExpctInternetAccess	0.13
ExpctSocialBelonging	0.17
ExpctRelationships	0.29
ExpctSocialBelonging(avg)	0.25
ExpctRealWrldImp	0.11
ExpctKnowledge	0.50
ExpctDigitalSkill	0.33
ExpctOpportunity	0.46
ExpectationsAvg(Prop7)	0.62

For the variables associated with the experiential expectations, a majority of the expectations variables had significant correlations with the "InitialParticipation" variable. The variables, "ExpctLivingWage", "ExpctKnowledge" and "ExpctOpportunity" had moderately high correlations

with “InitialParticipation” with correlation coefficients at 46%, 50% and 46% respectively. The experiential expectations average variable, “ExpectationsAvg(Prop7)”, had the highest correlation with “InitialParticipation” at a correlation coefficient of 62%. A regression analysis was run with the “ExpectationsAvg(Prop7)” being the dependent variable and “InitialParticipation” variable being the independent variable. The resulting regression model generated from the analysis of the “ExpectationsAvg(Prop7)” and “InitialParticipation” is shown in Table 28.

Table 28 Regression Model Table Average Experiential Expectation and Initial Participation

Regression Summary for Dependent Variable: ExpectationsAvg(Prop7) (Independent Variable: InitialParticipation) R= 0.63 R²= 0.39 **Adjusted** R²= 0.38 F(1,44)=28.4 p<0.00000 **Std.Error of estimate:** 0.50						
N=46	**b***	**Std.Err. (of b*)**	**b**	**Std.Err. (of b)**	**t(44)**	**p-value**
Intercept			2.26	0.32	7.11	0.000000
InitialParticipation	0.63	0.12	0.42	0.079	5.33	0.000003

The regression model explicating the relationship between the dependent “ExpectationsAvg(Prop7)” variable and the independent “InitialParticipation” variable was determined to be highly significant, as signified by a p-value much less than 0.05. “InitialParticipation” was realised to have a strong relationship with the average experiential expectations with a correlation coefficient of 63%. The R^2 value for the regression model was 39%, which indicated that the variation in “ExpectationsAvg(Prop7)” was explained 39% by “InitialParticipation”, which considerably presents support for the claim of the seventh proposition. The regression model in Table 28 helps to explain the variation in the average experiential expectations considerably.

Proposition 8

Regarding proposition eight, it stated that the experiential expectations of digital workers concerning digital labour would have a positive relationship with the Continued Participation in Digital Labour. The value of examining the eighth proposition is in discovering how the experience of participating in digital labour might influence digital workers to continue participating in digital labour. To delve into the relationship between the experiential expectations and continued participation in digital labour, the correlation analysis of the experiential expectations was performed alongside the ContinuedParticipation variable. Most of the variables being analysed in the correlation analysis Table 29 were formed as factors in the factor analysis that was conducted, to help avoid multicollinearity as much as possible. Table 29 shows the correlations of the ContinuedParticipation with the variables associated with the experiential expectations construct.

Table 29 Correlation Analysis Table for Experiential Expectations and Continued Participation

Spearman Rank Order Correlations (Experiential Expectations and ContinuedParticipation) MD pairwise deleted Marked correlations are significant at p <0.05	
Variables	Continued-Participation
ExpctLivingWage(avg)	0.50
ExpctLivingWage	0.47
ExpctInternetAccess	0.22
ExpctSocialBelonging	0.13
ExpctSocialBelonging(avg)	0.23
ExpctSecurity	-0.05
ExpctRealWorldImpact	0.04
ExpctKnowledge	0.50

In Table 29, it was noted that only a few of the variables that were part of the experiential expectations construct had a significant correlation with the "ContinuedParticipation" variable. The variables "ExpctLivingWage(avg)", "ExpctLivingWage" and "ExpctKnowledge" had significant, moderately strong relationships with "ContinuedParticipation" as they had correlation coefficients of 50%, 47% and 50% respectively. To address the potential problem of multicollinearity amongst independent variables when performing regression analysis, backwards-step regression was performed to ensure that only independent variables that are truly independent of each other would be captured in the regression model. The stepwise regression model that was run is displayed in Table 52. The resulting regression model produced is shown in Table 30.

Table 30 Regression Model for Continued Participation and Experiential Expectations

Regression Summary for Dependent Variable: ContinuedParticipation (Independent Variables: Experiential Expectations) **R**= 0.66 **R²**= .44 **Adjusted R²**= 0.42 **F**(2,43)=17.0 **p**<.00 **Std.Error of estimate:** 0.75						
N=46	**b***	**Std.Err. (of b*)**	**b**	**Std.Err. (of b)**	**t(43)**	**p-value**
Intercept			1.08	0.53	2.04	0.048
ExpctKnowledge	0.35	0.13	0.37	0.14	2.61	0.013
ExpctLivingWage(avg)	0.41	0.13	0.39	0.13	3.02	0.004

For the regression model in Table 30, only the variables representing the experiential expectations were included and analysed. It was vital to investigate the relationship of only the experiential expectations of digital labour and the continued digital labour participation as stated in the seventh proposition, in order to investigate how much the different aspects of an individual's experience with crowdsourcing could affect their willingness to continue participating in digital labour. Of all the variables associated with experiential expectations, only the variables "ExpctKnowledge" and "ExpctLivingWage(avg)" were included in the resulting regression model after running the backwards step regression method. Also, both variables "ExpctKnowledge" and "ExpctLivingWage(avg)" had significant relationships with the "ContinuedParticipation" variable which were of moderate effect, as signified by the beta values of 35% and 41% respectively.

Furthermore, the R^2 value of 44% for the regression model in Table 30 suggested that the variation in the "ContinuedParticipation" variable was modestly explained by the experiential expectations variables "ExpctLivingWage(avg)" and "ExpctKnowledge". The R^2 value of the regression model in Table 30 would seem to justify further the claim by the eighth proposition. Further regression analysis was run to investigate whether continued digital labour participation also had a relationship with the experiential expectations alongside the initial participation in digital labour. So the variable of the initial participation constructs was also included. The regression method used for testing the relationship between the continued participation, experiential expectations and initial participation was backward stepwise regression. The corresponding stepwise regression model is shown in Table 53. The resulting regression obtained from running stepwise regression is displayed in Table 31.

Table 31 Regression Model for Continued Participation, Initial participation and experiential expectations

Regression Summary for Dependent Variable: ContinuedParticipation (Independent Variables: InitialParticipation, Experiential Expectations) **R**= 0.81 **R²**= 0.65 **Adjusted R²**= 0.64 **F**(2,43)=40.74 **p**<.00000 **Std.Error of estimate:** 0.59						
N=46	**b***	**Std.Err. (of b*)**	**b**	**Std.Err. (of b)**	**t(43)**	**p-value**
Intercept			0.49	0.40	1.22	0.23
ExpctLivingWage(avg)	0.29	0.10	0.28	0.10	2.77	0.0082
InitialParticipation	0.63	0.10	0.65	0.11	6.12	0.000000

Concerning the significance of the regression model in Table 31, the p-value was observed to be much less than 0.05, making the regression model for the "ContinuedParticipation" variable very significant. The variables "ExpctLivingWage(avg)" and "InitialParticipation" were found to be significant of all the independent experiential expectations variables that were tested, as denoted by their low p-values. "ExpctLivingWage(avg)" had a beta value of 29% which signified a relationship with "ContinuedParticipation" of moderate strength. "InitialParticipation", on the other hand, had a beta value of 63% which denoted a considerably strong relationship. The R^2 value for the regression model in Table 31 had a value of 65% which indicated that the majority variation in the "ContinuedParticipation" variable could be explained by the independent variables "ExpctLivingWage(avg)" and "InitialParticipation", giving additional support for the eighth proposition. The summary of the regression analysis tests in Table 32 that were conducted for each of the propositions included the claim being tested for and the overall test result stating if the proposition claim was justified.

Table 32 Regression Analysis Tests for Propositions

Proposition Test Number	Proposition Statements	Test Conclusion
1	The barriers to digital labour would have a negative relationship with the attitudes of individuals toward digital labour.	Statement Justified
2	The initial expectations of digital labour would have a positive relationship with people's attitudes toward digital labour.	Statement Justified
3	The experiential expectations of digital labour would have a positive relationship with the attitudes of digital workers toward digital labour.	Statement Justified
4	The attitudes of individuals toward digital labour would have a positive relationship with their intention to participate in digital labour.	Statement Justified
5	The attitudes of individuals toward digital labour would have a positive relationship with their initial participation in digital labour.	Statement Justified
6(a)	The intention of digital workers to participate in digital labour would positively affect their initial participation in digital labour.	Statement Justified
6(b)	The attitudes toward and intention of digital workers to participate in digital labour would positively affect their initial participation in digital labour.	Statement Justified
7	The initial participation would have a positive relationship with the experiential expectations in digital labour	Statement Justified
8(a)	The experiential expectations of digital workers concerning digital labour would have a positive relationship with the Continued Participation in Digital Labour.	Statement Justified
8(b)	The experiential expectations and initial participation of digital workers concerning digital labour would have a positive relationship with the Continued Participation in Digital Labour.	Statement Justified

5.2 Qualitative Data Analysis

The survey questionnaire contained some open-ended questions in which a respondent could discuss and share their views around particular, vital digital labour issues. Some of the digital labour issues that the respondents were asked about were compensation for digital labour, cost of internet access, use of technology, digital skills and other aspects that respondents deemed were essential to

them. The main purpose of the qualitative analysis was to investigate key aspects of the respondents' crowdsourcing experiences relating to the digital labour aspects, based on their responses to the open-ended survey questions. The qualitative analysis would aim to discover new theories around the experience of digital labour that could reinforce or contradict the existing theories outlined in the Figure 1a framework and being tested in the quantitative analysis. The responses to the open-ended questions were then recorded and used for qualitative analysis. The responses to the survey questions that were used were views shared by twenty respondents who had experience on crowdsourcing platforms.

For the qualitative analysis, thematic analysis was the method used to analyse the views shared by the respondents in response to the open-ended survey questions. For the thematic analysis, the open coding technique was implemented to generate the themes from the open-ended responses that were contributed (Braun & Clarke, 2006). As the questions in the research instrument were largely guided by theoretical framework aspects, many of the responses were given in correspondence to the aspects were asked about for each of the questions. Microsoft Excel was the software tool used for organizing and processing the responses, the codes and the themes. As the qualitative analysis was only secondary to the quantitative analysis for the research, the procedure applied for conducted the qualitative analysis would be sufficient. The snapshots for the process undertaken for generating the qualitative themes are shown in Appendix C, followed the resultant themes and codes in greater detail.

Additionally, for the thematic analysis, key digital labour themes that would emerge from survey responses would be identified along with the key statements and thoughts around the corresponding themes. Sentiments, words expressing feelings around particular digital labour issues were also captured for each theme. Eight main themes were discovered from the open-ended survey responses which were namely Fair Compensation, Digital Skill, Internet Cost and Access, Use of Technology, Networking opportunities, Digital Platform Type, Work Opportunities and Work Conditions. The qualitative analysis was particularly crucial for addressing the third question that stated, " How do certain aspects of digital labour affect people's experience of digital labour?". The themes are described, with the related respondents' views being listed in the sections that follow.

5.2.1 Fair Compensation

Table 33 Fair Compensation Responses

Survey Respondent	How Payment is Received	Views on Crowdsourcing payment
Respondent 2	How well task meets client requirements	"Usually better pay than employee if good at what you do", "cost more to perform the job than what it pays", "I also earn more than my peers in South Africa with traditional jobs"
Respondent 5	paid according to the complexity of the task(s	"great earning potential for writers", "Personally, money, .. as a way of paying it forward. This is why I contribute to Wikipedia…other info. portals"
Respondent 9	Number of complete tasks	"Globally, sites like UpWork exploits freelancers. You can get paid as little as $30 for an article that takes 5 - 6 hours of research, writing, and editing.", "Fortunately, I find that South African platforms like NoSweat Work pay much more fairly.", "additional income", "being paid in a stronger currency", "Global - not a good experience. Local - good experience"
Respondent 16	Number of complete tasks	"I am a writer we are often underpaid and overworked", "the payment"(main incentive), "I used to think I would. make a living but I have to put in way too much work", "competing with international people who are willing to get paid way less", "It's not regulated"

Regarding obtaining compensation for the digital work performed, most of the respondents viewed compensation as essential for participating in digital work and viewed digital work as worth being compensated for. Some respondents perceived digital labour as a way to earn an income in foreign currencies that are stronger than the local currency in South Africa. For example, Respondent 9 expressed the view concerning digital work on global platforms, "being paid in a stronger currency". However, a significant number of respondents felt that the monetary reward received for producing online work was very little. As an example, Respondent 16, as displayed in Table 33 stated, "I am a writer we are often underpaid and overworked". Similarly, Respondent 9 also expressed, "Globally, sites like UpWork exploits freelancers". The respondents feeling exploited for their online work seemed to agree with the literature which emphasizes that workers could get hired very cheaply by employers and earn low compensation depending on the labour market they are in, and due to competition with other workers for opportunities (Graham, Hjorth & Lehdonvirta, 2017).

Conversely, though, Respondent 5 mentioned about how there could be valuable opportunities to earn higher wages when they put across the following point, "great earning potential for writers,.. This is why I contribute to Wikipedia…other info. portals". Additionally, Respondent 2 mentioned, "Usually better pay than employee if good at what you do….I also earn more than my peers in South Africa with traditional jobs". The respondents receiving desirable payment for doing their digital

tasks well would seem to coincide with the literature which pointed out that workers tend to be compelled to compete for opportunities with other workers and could obtain higher or lower wages based on the skills they might or might not possess. A significant portion of the respondents believed that there was competition between workers which could negatively impact their opportunities to earn reasonable wages.

5.2.2 Digital Skill

Table 34 Digital Skill Responses

Interviewee	Type of digital skill	Views around digital skill
Respondent 3	Automotive tech research, commentary word and producing reports	"Exposure and promotion of skills", "Easy access to potential work", "Collaboration with other professionals in my field", "As a professional.., I'm able to contribute to the global automotive knowledgebase during these times of significant technological disruption."
Respondent 11	"Research, writing, SEO, editing, proofreading"	"Digital work is an excellent way for creative people to use their skills while making money.", "Interesting ..fulfilling work", "Working on Fiverr .. better than I expected."
Respondent 17	Graphics design, Design tasks	"Spec work would be design/creative work briefed openly on the internet and then only the winning work is paid for.", "This .. is exploitation of creative workers, it floods the market with bad design"

With regards to the digital skill of respondents, a significant number of respondents viewed digital platforms as an opportunity to showcase, utilise and develop their skills while participating in online jobs which they are most interested in. As an example, Respondent 3 stated, "Exposure and promotion of skills…easy access to potential work". Also, Respondent 11 expressed, "Digital work is an excellent way for creative people to use their skills while making money…Interesting…fulfilling work". Certain respondents also mentioned about how they obtain access to certain opportunities through their skills on digital platforms such as the Southern African Freelancers' Association and Fiverr. Some respondents also expressed about how they were able to network and collaborate with other online professionals with similar skillsets and obtain clients from other countries such as the United States(US) and the United Kingdom(UK) and potentially earn their income in foreign currencies due to the value of their skills.

However, there were some views from the respondents about how people could have their skills exploited without being offered fair payment for performing digital labour. In the case of Respondent 17, they expressed the following point, "Spec work would be design/creative work briefed openly on the internet and the only the winning work is paid for…. This .. is exploitation of creative workers". Views such as Respondent 17's would seem to correspond with the literature which emphasizes that digital workers can become disempowered in earning opportunities to obtain higher compensation for their labour due to lacking the level of skills that other competing digital

workers may possess (Graham, Hjorth & Lehdonvirta, 2017). As digital skill relates to the theme of compensation, some respondents who felt they did not receive fair wages also did not perceive their level of skill as an advantage for receiving higher compensation.

5.2.3 Internet Cost and Access

Table 35 Internet Cost and Access Responses

Interviewee	Type of Internet Access	View about Internet Cost and Access
Respondent 4	Work/Home ADSL	"Internet is very expensive in South Africa compared to other 3rd world countries.", "I mean you can get 20meg line in Bali for half the price,"
Respondent 5	Home Fibre	"Access to the internet in South Africa is prohibitively expensive, especially if you're not in a major city with access to a public library."
Respondent 11	Work/Home ADSL	'' It's quite expensive - not to mention that setting up ADSL through Telkom is a headache and a half. I believe that more people would be able to find employment and/or supplement their income through digital work if internet access were cheaper."
Respondent 15	Home Fibre	"Cape Town has fast fibre internet available almost anywhere", "Accomodation outside of Cape Town is more affordable but quality internet connection is not as available and reliable as fibre options in Cape Town."

Of the 20 respondents who had their responses analysed, most of the respondents had some access to the internet, with many of the respondents having smartphones and also having access to Wireless Internet and Fibre Internet Connections. As an example, Respondent 15 explained about the internet availability and cost in different parts of South Africa, "Cape Town has fast fibre internet available almost anywhere, outside of Cape Town is more affordable but quality internet connection is not as available". Respondents having internet access available to them would appear to relate with the literature which highlights that South Africa has among the most advanced ICT infrastructure in the African continent, which would also include infrastructure for networks, despite the problems of internet costs and infrastructure in many African countries (Chuene & Mtsweni, 2015).

Most respondents emphasized the point that internet access is very expensive. With the case of Respondent 4, they highlight the view, "Internet is very expensive in South Africa compared to other 3rd world countries. I mean you can get 20meg line in Bali for half the price". A notable number of respondents highlighted that South Africa has very high internet costs when compared to countries in other parts of the world. Moreover, a few respondents also expressed about how internet costs could be a barrier affecting the ability to produce digital work and obtain payment for online work produced, especially for people from low-income communities. Respondent 18 stated the following viewpoint, "It is holding back the ability to interact with crowdsourcing platforms, particularly from

disadvantaged/ previously disadvantaged segments of South African society". Respondents' views about internet costs affecting poorer communities seem to agree with the literature which emphasizes how the poorer communities in South Africa struggle to afford high-quality internet access (Murugesan, 2013).

5.2.4 Digital Platform Type

Table 36 Digital Platform Type responses

Participant	Platforms of participation	Views around Digital platform(s)
Respondent 3	Upwork, Freelancer	"Effective and safe on Upwork", "Exposure and promotion of skills and work on a suitable platform, Guaranteed remuneration through Escrow", "Yes, it has widened my horizons with regard to understanding technology in my field."
Respondent 5	Upwork, fiverr, Kickstarter, Twitter, Instagram, Facebook, LinkedIn, Freelancer	"It has allowed me to build my network, thereby increasing my client base. I also allows me to remain up-to-date with the zeitgeist so I can create relevant content for my clients", "This is also why I've used my digital skills for fundraising and community management of NGO social media platforms."
Respondent 9	SAFREA, NoSweat Work	"That global crowdsourcing sites are a waste of time, as they pay very little", "Globally, sites like UpWork exploits freelancers. You can get paid as little as $30 for an article that takes 5 - 6 hours of research, writing, and editing. Fortunately, I find that South African platforms like NoSweat Work pay much more fairly.", "get two fairly significant jobs by belonging to SAFREA."

Concerning the types of digital platforms, there were mixed views amongst the respondents about the benefit that a particular digital platform could bring for digital workers. Some respondents were relatively enthusiastic about the opportunities that different kinds of crowdsourcing platforms bring such as interesting work opportunities, networking with clients and others. For example, Respondent 5 stated, "It has allowed me to build my network, thereby increasing my client base… ". Also, Respondent 3 gave an additional perspective, "Effective and safe on Upwork…Guaranteed remuneration through Escrow… Yes, it has widened my horizons with regard to understanding technology in my field.".

Although some respondents reacted positively to the potential benefits of digital platforms such as the networking of clients, learning more about various technologies, other respondents highlighted certain drawbacks that they would experience while working on digital platforms. For instance, Respondent 9 expressed the following point with detail, "That global crowdsourcing sites are a waste of time, as they pay very little…. Fortunately, I find that South African platforms like NoSweat Work pay much more fairly.". So certain respondents found South African local platforms to be of more benefit than global platforms that could exploit digital workers and provide low compensation

as expressed in digital labour literature. There were, on the contrary, other respondents who viewed digital platforms as useful for obtaining opportunities abroad and globally other than in the local market where certain respondents did not come across many desirable opportunities.

5.2.5 Networking

Table 37 Networking Opportunities Responses

Participant	Views Around Networking individuals
Respondent 5	"great earning potential for writers, particularly if you can secure international clients who can pay in foreign currency.", " Personally, money, the opportunity to network and gain more clients, and as a way of paying it forward.", "It has allowed me to build my network, thereby increasing my client base."
Respondent 15	"I found that working online was quite lonely and I felt isolated from the world. I enjoy being a photographer more than a retoucher using crowdsourcing sites. As a photographer I interact with people a lot more."
Respondent 20	". I think because there is no human contact, the client simply do not see you as a person, just a faceless workhorse.", "I've worked remotely with other designers, writers, illustrators and photographers to do many magazines and coffee table books, without having to be in the same physical space. Many of these co-workers I've never even met in real life." "Clients always look for a bargain"

Regarding the views around networking opportunities, many of the respondents felt that they were able to interact with and form many new connections with clients who were abroad and thus obtain opportunities for interesting digital work and for higher compensation, which would notably influence the theme of fair compensation. In the case of Respondent 5, they expressed the following viewpoint, "great earning potential for writers, particularly if you can secure international clients who can pay in foreign currency". Respondent 15 gave an additional perspective, "I found that working online was quite lonely and I felt isolated from the world. I enjoy being a photographer more than a retoucher using crowdsourcing sites. As a photographer I interact with people a lot more. " So there were respondents who felt that they could fulfil their social need through their interactions with other individuals, while they perform online work.

Although the majority of respondents would discover the benefits of networking with other individuals when participating in digital work, there were a few respondents who expressed frustration over their interactions with clients. Respondent 20 made his frustration known with the

following point, “I think because there is no human contact, the client simply do not see you as a person, just a faceless workhorse… Clients always look for a bargain”. The literature expresses that digital workers could be exploited by having their work or services marketed and offered to clients by platform providers while workers are deprived of their compensation and interaction with clients, as the views by Respondent 20 around client interaction may suggest (Van Doorn, 2017).

5.2.6 Work Opportunities

Table 38 Work Opportunities Responses

Interviewee	Industry	Views around Work Opportunities
Respondent 3	Automotive and transportation	“Easy access to potential work”, “ability to select work that best suits the skillset”, “work on a suitable platform”, “Collaboration with other professionals in my field has also opened up further opportunities - such as speaking engagements.”
Respondent 5	Marketing and advertising	“there is great earning potential for writers, particularly if you can secure international clients”
Respondent 7	Pharmaceutical, ICT, Healthcare	“not enough information being available and in SA freelancing isn't as big but now I'm more open to freelancing platforms”
Respondent 9	Public relations, Copywriting, Social media, publications (magazines)	“As mentioned, global crowdsourcing sites are extremely competitive and usually the 'cheapest' rates get the jobs.”, “Global - not a good experience. Local - good experience”
Respondent 14	Film Visual effects industry	“I'd rather freelance for an employer overseas than work locally”, “to stay connected to groups and connections. can't really say that I have negative views about it.”

On work opportunities, most respondents felt that there were work opportunities readily available on digital platforms. For the kinds of work opportunities, some respondents felt that digital labour platforms could provide global opportunities which were more favourable than South African local opportunities. In Respondent 14’s case, they stated the following view, “I'd rather freelance for an employer overseas than work locally”. Respondent 5 also emphasized the view, “There is great earning potential for writers, particularly if you can secure international clients”. Certain respondents found global work opportunities to be more rewarding, as they could provide increased compensation in the form of international currency, which would link greatly with the theme on compensation.

However, Respondent 9 had a different view to global work opportunities and mentioned the following, “global crowdsourcing sites are extremely competitive and usually the 'cheapest' rates get the jobs. Global - not a good experience. Local - good experience”. Respondent 5 described how global sites, in particular, tend to exploit digital workers’ labour, and notably underpay digital workers for their efforts whereas with certain local sites like NoSweat tend to reward workers more

fairly. A notable number of respondents expressed the view that even though there would be opportunities to obtain clients, often clients would try to select the cheapest service and that digital workers would be required to put thorough effort into their digital work but obtain little to almost no reward. This would resemble the idea described in literature studies where workers obtain low payments due to clients being reluctant to pay and competing workers who charge lower rates for similar services (Graham, Hjorth & Lehdonvirta, 2017).

5.2.7 Use of Technologies

Table 39 Use of Technologies Responses

Participant	Technolog(y/ies) Owned	Device(s) most used and why
Respondent 5	PC, Smartphone	"My smartphone, because it's portable. However for content creation (crafting social media posts, writing blogs, doing research etc) I prefer my laptop because it allows for in-depth concentration and is more comfortable for me to use (because of my chronic illnesses)"
Respondent 13	PC, Tablet	"laptop, tablet and smartphone. Easy access and always have one or more device with me."
Respondent 17	PC, Smartphone	"PC, since it has the strength for my design programs."

Of the respondents who had their responses analysed, all twenty respondents mentioned that they owned a personal computer (PC) and most of the respondents also had a smartphone as well. The result of Respondents owning a PC and a Smartphone seems to be reflective of digital labour literature which emphasizes the wide use of technology in South Africa, with 89% of the South African population using mobile phones. A lot of the respondents mentioned that their PCs were necessary for the digital work that they were doing primarily, while their smartphones were vital for communicating and networking important individuals. Respondent 17 expressed the view, "PC, since it has the strength for my design programs."

Moreover, Respondent 8 mentioned, "Computer: I can multitask, organize and complete my tasks quickly and efficiently… Smartphone: For when i am not at my desk and to keep me in contact with clients". A significant number of respondents also stressed the view that their PCs and mobile phones were portable and could be used at any location for operating on their digital work at their convenience. Respondent 5 stated, "My smartphone, because it's portable. However for content creation… I prefer my laptop because it allows for in-depth concentration and is more comfortable for me to use (because of my chronic illnesses)". Both PCs and mobile were found to be transportable for use in multiple places, though the PC were utilised for executing digital tasks more than mobile phones, for many of the respondents.

5.2.8 Work Conditions

Table 40 Work Conditions Responses

Participant	Views Around Work Condition
Respondent 2	"able to travel anywhere anytime", "Working remotely and able to travel", "Flexible hours or days (take leave when needed) Usually better pay than employee if good at what you do"
Respondent 5	"This level of flexibility and ability to work remotely is absolutely vital to me because I am chronically ill", "Access to the internet in South Africa is prohibitively expensive, especially if you're not in a major city with access to a public library."
Respondent 9	"Global - not a good experience. Local - good experience", "Issues like load-shedding is a big problem when working from home", "the convenience of working remotely, being paid in a stronger currency"

With regards to the work conditions around digital labour, some respondents found the ability to work remotely in any location and the flexibility of digital work to be a significant benefit for them. Respondent 2 emphasized the point, "able to travel anywhere anytime… Working remotely… Flexible hours". Respondent 5 also reiterated a similar view, "This level of flexibility and ability to work remotely is absolutely vital to me because I am chronically ill". Conversely, relating to the theme around the cost of internet access, many of the respondents viewed the expense of internet access as a considerable challenge in carrying out digital work. Respondent 5 noted the following point, "Access to the internet in South Africa is prohibitively expensive, especially if you're not in a major city with access to a public library." A few respondents also reiterated that even other third-world countries had cheaper internet than in South Africa.

Furthermore, coinciding with the theme of fair compensation, a notable number of respondents viewed the opportunity of earning compensation in the form of foreign currency through global platforms to be a noteworthy benefit. In the case of Respondent 9, they stated, "the convenience of working remotely, being paid in a stronger currency". Respondent 2 gave another perspective on the issue of compensation, "Usually better pay than employee if good at what you do", which suggested that the digital skill could also have an impact on the amount of payment that a digital worker may receive for their labour. However, certain respondents had mentioned that a lot of input would be required for carrying out digital work, but very little output would be generated from it in the form of payment for the digital service or product delivered. Some respondents also mentioned that certain sites could exploit and underpay workers.

Additionally, a few respondents explained that clients could drive down worker wages by selecting services or commodities from workers with the lowest rates, and also delay paying digital workers. Respondent 3 mentioned though that certain sites can guarantee that payments to workers are made appropriately through agreements such as escrow agreements and license agreements. Relating to the theme of networking opportunities, some respondents felt there were several

opportunities to network and collaborate with other professionals and obtain more clients globally while performing digital work. However, few respondents had mentioned that there was a lack of face-to-face interaction with their clients, which could further cause the clients to issue unrealistic demands to digital workers while underpaying digital workers.

5.3 Discussion and Interpretation

For the data analysis, the purpose for performing the quantitative and the qualitative analysis was to use data gathered to investigate the significance and effect of the relationships between the main constructs for digital labour illustrated in the framework in Figure 1a. The research data analysis, particularly with the qualitative analysis, was also aimed at further exploring certain aspects of digital labour experiences to discover other relevant theories which could either reinforce the ideas in the framework constructs, contradict them or add to them. The quantitative and qualitative analysis results are discussed and explained in the following sections along with their implications with regards to addressing the research questions and objectives.

5.3.1 Barriers

The aspects pertaining to the digital labour barriers were investigated, mainly in the quantitative analysis, to determine if there were any significant relationships between the digital labour attitudes and the barriers. The barrier aspects, represented by the corresponding variables with relevant data in Table 5, were shown to have negative responses from the respondents' for some of the digital labour barriers. From Table 5, the barriers of internet cost, government internet policy and digital skill were shown to have overall negative responses from respondents' concerning digital labour issues of digital skill and internet policy.

The barrier of digital skill in digital labour, in particular, had a notable association with the attitude around technology use in digital labour, whereby the greater the lack in digital skills that a digital worker had, the less likely they would be to use technologies required for partaking on digital platforms. With regards to the relationship between technology use and digital skill barrier, certain technology studies have emphasized that people with lower digital skill levels tend to be more active on social media sites like Facebook than digitally higher-skilled individuals. However, people with lower digital skills are less likely to use technology platforms to seize economic opportunities or engage in online work activities that would generate income (Correa, 2016). For the qualitative responses, certain respondents mentioned that even highly skilled workers can have their work undermined by clients and underbid even by other workers charging lower rates yet producing lower-quality work.

Moreover, the barrier of digital skill also had a considerable relationship of moderate effect with the attitude toward the ability to work from any location, whereby the lower people's digital skills were, the less significant the benefit of working online from any location would be in people's view. Richardson and Bissell (2019) highlighted that although digital platforms have brought about transferability of digital skills and work across different regions, there is still the possibility that a digital business or company may or may not be able to obtain support in the form of finance sand

skilled personnel based on the physical area where they are situated. Therefore, a physical location could still bear some significance for digital labour jobs obtained by possessing digital skills.

With regards to the first proposition, the digital labour barriers had a significant relationship of moderate negative effect with the overall attitude of digital workers towards digital labour. However much of the change in the attitudes of digital workers toward digital labour would not be explained by the digital labour barriers, even though the first proposition was notably justified. Also, even though respondents mentioned in the qualitative responses that policies around internet access and cost could hinder digital work practices for underprivileged communities, most of the respondents were not affected to a large extent by such digital labour barriers such as internet cost, policy or technology access.

5.3.2 Initial Expectations

Regarding the initial expectations of digital labour, these were investigated mainly to explore the relationship between the expectations of people who had no prior digital labour experience, and the attitudes of digital workers towards digital labour. There were aspects of the initial digital labour expectations that had a notable association with certain attitudes of individuals toward digital labour, as shown in Table 44. For instance, the expectations of social belonging on digital platforms related negatively with the attitude of safety from online fraud on digital platforms such as social belonging. As individuals develop a recognisable, professional profile through social media and obtain key social relationships to boost their career online, they could become more a target for cybercriminals who would seek to rob workers of sensitive information in order to interfere with business practices or steal finances online (Gandini 2016; Zhang & Gupta, 2018).

Also, from Table 17, the expectation of obtaining a living wage from undertaking digital work had a positive association with the average attitude towards digital labour, implying that as people were expectant of obtaining a living wage from digital work, their overall reactions towards digital labour based on many different aspects would be more positive. Graham et al. (2017) mentioned that certain digital workers would get dismayed over obtaining low compensation, even for the digital work that they would take pleasure in. Digital workers often seek to gain satisfaction earning from their digital jobs potentially more than double or triple the amount of wages that they would earn in more traditional, formal jobs (Graham et al.,2017; Van Doorn, 2017). Concerning the association with the digital labour attitudes, the initial expectations around digital labour were notably positively related with the attitudes toward digital labour as a whole, with considerable effect according to the results shown in Table 18. The initial expectation of obtaining a living wage from digital work was observed to have one of the most significant, strongest relationships with the average attitude of individuals towards digital labour of all the initial digital labour expectations.

Similarly, with the qualitative responses, most respondents who had crowdsourcing experience noted that monetary compensation was their primary incentive for participating in digital labour. Respondents, for the quantitative results, on average were neutral though, concerning the initial expectation of obtaining a living wage from digital labour, as shown in Table 3. Literature studies also emphasize that for digital workers such as crowd workers, compensation for their work serves

as a primary incentive for participation in digital work, notably more than other intrinsic motivating factors influencing digital work participation (Durward, Blohm & Leimeister, 2016). Additionally, Table 18 showed that the initial expectations were able to explain the variation in the average attitude towards digital labour to a moderate degree. The result would significantly justify the second proposition of initial expectations in digital labour having a significant positive relationship with the digital labour attitudes.

5.3.3 Attitudes

There was observed to be significant relationships between some of the individual experiential expectations and the digital labour attitudes as a whole when the quantitative analysis techniques were conducted as shown in Table 19. One of the strongest, positive relationships shown in Table 48 in the Appendix section, was that of the expectation of earning a living wage and the attitude towards the job security for crowdsourcing work. Digital workers at a high-skill level would obtain more access to well-paying job opportunities than those workers at a lower-skill level, and consequently could react positively around the issue of job security (Dunn, 2017). Another significant, positive relationship shown in Table 20, was that between the experiential expectation of having internet access and the average attitude of digital workers towards digital labour.

Hjort and Poulsen (2019) highlighted that the growth of access to fast internet in several African countries, particularly in South Africa, has led to more people obtaining jobs through ICT initiatives such as e-commerce, online retailing, Business Process Outsourcing (BPO) and various others. The qualitative responses also hinted that a reduction in internet cost could ensure that there is internet access for more people, particularly people from disadvantaged communities. Overall, the relationship between the initial expectations and the digital labour attitudes was a considerable, positive relationship of moderate effect. The results in Table 20, the experiential expectations of digital labour would explain a fair amount of the change in the average attitude of individuals toward digital labour.

5.3.4 Intention to Participate in Digital Labour

For the case of the digital labour attitudes and the intention to participate in digital labour, findings in Table 22 showed that there was a notable relationship between the two variables. Many of the attitudes that were investigated were significantly associated with the intention to participate. The attitude of digital jobs being better than formal employment was the aspect that seemed to relate with the intention to participate in digital labour the strongest of all the digital labour attitudes. A particular result in Table 6 for the variable “AttWorkAlternatives” showed that most respondents had a neutral view of the attitude regarding digital jobs being better than formal employment. Dunn (2017) explained that for digital jobs, they tend to be less bound to a physical work location than the more formal forms of employment and give workers more mobility and freedom to set the kind of wages they would want to charge.

However, as digital workers become viewed as independent contractors on digital platforms, the companies providing digital platforms could use the digital work arrangement to avoid the responsibility of compensating workers fairly. Employers on digital platforms could also avoid

providing workers with insurances and benefits that would be received by formally employed workers (Van Doorn, 2017). Also, from the qualitative responses, there were views that workers could be made to work abundantly and only be compensated by a small margin, and consequently could have made the survey respondents more unsure about digital jobs being a better employment alternative. The attitude towards job security for crowdsourcing jobs was also shown in Table 21 and Table 22 to have a reasonably considerable relationship with the intention to participate in digital labour.

The respondents view on average concerning the attitude towards crowdsourcing job security was neutral, as was indicated by the statistics for the variable "AttCrowdworkJobSecurity" in Table 6. Concerning the neutral view of respondents around crowdsourcing job security, Langley and Leyshon (2017) mentioned that the contracts that are offered on a short-term or casual basis, could further highlight the job insecurity and lowering of the quality of jobs on digital platforms. From a notable number of the qualitative responses, the view expressed was that there is a need for the payment received from digital work to be ensured by crowdsourcing providers, through possible agreements. Overall, the combined effect of the individual attitudes toward digital labour exhibited a modest association with the intention to participate in digital labour. The digital labour attitudes combined were able to explain a fairly notable amount of the change in people's intentions to participate.

5.3.5 Initial Participation

The association of the digital labour attitudes and the initial or actual participation in digital labour was then investigated and observed to be significant, as shown in Table 24. Many of the digital labour attitudes had strong relationships with the initial participation, similar to the relationships they had with the intention to participate as shown in Table 23. The two attitudes concerning job security of crowdsourcing jobs and digital jobs being a better alternative than formal jobs were observed to have the most noteworthy relationships, of modest effect, with the initial participation in digital labour. As digital workers could be deprived of certain benefits that would be incorporated in a formal job, such as sick leave days, health insurance and other benefits, the drawback of certain lack of job benefits could have a direct negative impact on people's view of initial digital labour participation (Fu, 2019).

However, regarding the qualitative responses, few of the respondents mentioned that there were several opportunities to obtain payment on global platforms which could be guaranteed and in some cases, could even be higher than the payment from a traditional job. The attitudes toward digital labour, when combined had a considerable positive relationship with the initial participation in digital labour. Also, a reasonable amount of the variation in people's view of the initial participation in digital labour could be explained by the attitudes of people towards digital labour. Moreover, the respondents' initial participation of digital labour was investigated for a potential association with the intention to participate in digital labour. According to Akman and Mishra (2017), there is the possibility which occurs often that people may not always follow through with their described intentions, even though the actual use of an ICT and intention to use an ICT may be very closely related in many cases.

It was noted, from the Table 25, that the intention to participate and the initial or actual participation in digital labour had a very close relationship, with a large amount of the change in the actual digital labour participation being explained by the intention to participate in digital labour. Additionally, the combination of the intention to participate and the attitudes toward digital labour had a very close relationship with the actual digital labour participation as displayed in Table 26. Consequently, much of the change in people's view of actual digital labour participation could be explained by the combined effect of the intention to participate and the attitudes of people towards digital labour.

5.3.6 Experience

For the qualitative analysis, certain themes that were identified from the views contributed by the survey respondents had covered certain issues that coincided with some of the digital labour experience aspects that were analysed in the quantitative data analysis. The sections that follow describe the digital labour aspects around digital labour experiences from both the quantitative and qualitative aspects that reinforced and also possibly contradicted each other under the subheadings which represented some of the qualitative themes.

Compensation

When examining quantitative and qualitative analysis results, the aspect of compensation for digital labour was observed to be very significant in the decision to participate in digital labour for both sets of the qualitative and quantitative results. For instance, in the qualitative analysis, most of the respondents mentioned that compensation was one of their main incentives for participating in digital labour activities when asked about their incentives for partaking in digital labour. Meanwhile, for the quantitative analysis, the "ExpctLivingWage (avg)" was noted to have significant, moderate relationships with the average attitude towards digital labour participation and the actual view of participation in digital labour as displayed in the correlation tables, Table 19 and Table 27 respectively.

Moreover, the variables representing digital labour compensation in the quantitative analysis, "ExpctLivingWage", "ExpctCompensation" for experiential expectations, each had median values of 4 according to Table 4. Those results for the "ExpctLivingWage" and "ExpctCompensation" variables would imply that respondents had positive expectations about the wages earned from digital labour that would be adequate to sustain a living and desirable in their crowdsourcing experience. From the qualitative results, some respondents felt that the opportunities to earn wages in the form of foreign currency and to obtain more clients and guarantee of payment based on the particular digital platform would cause respondents to react positively toward digital labour. Certain respondents also were able to experience the benefit of higher wages due to their level of skill.

However, there were also a comparable number of respondents who experienced significant drawbacks regarding digital labour compensations such as late payments, low payments, unpaid work hours, irrational client demands and competition with other digital workers based on pay rates. The drawbacks experienced concerning digital labour would consequently cause certain respondents to react negatively, to the extent of even discontinuing digital work altogether. The challenges

concerning the wages of digital work seem to resemble the idea in digital labour literature that digital workers can be exploited in their digital work and deprived of fair wages, resources and jobs due having low levels of skill while those workers with a high skill level obtain opportunities for more digital work and higher wages (Dunn, 2017; Fu, 2019).

Digital Skill

For the aspect of digital skill, there was a notable relationship observed between the initial participation and the experiential expectation concerning the digital skills applied in digital labour for the quantitative analysis results. The aspect of experiential expectation concerning skill was denoted by the variable "ExpctDigitalSkill" and was shown to have significant relationships of moderate effect with the initial participation in digital labour in the correlation analysis table, Table 27. Also, the median value of 4 for the variable "ExpctDigitalSkill" indicated that respondents on average had a positive expectation that their digital skill would be useful and beneficial for performing digital labour, and coincided with many of the qualitative responses. Most respondents, for the qualitative responses, mentioned that the digital skills they possessed would enable them to obtain more opportunities globally which would agree with studies that reiterate that individuals could obtain global opportunities to partake in digital jobs such as microwork jobs and even develop new skills too.

Moreover, regarding qualitative responses, a lot of the respondents highlighted that they were able to gain more clients and interact with other professionals who they could potentially collaborate with. The advantage of direct communication with clients and other workers resembles the idea in various studies were digital workers have the opportunity of bypassing mediating companies or agents in order to interact directly with customers or other workers, resulting in digital workers gaining extra knowledge and sharing ideas (Graham et al., 2017; Langley & Leyshon, 2017). There were a few respondents, however, who experienced some notable challenges with regards to the issue of digital skill as also reflected by a few of the quantitative responses. One major challenge which affected some respondents included being undercut by other workers offering lower rates with lower quality work and being severely underpaid by clients for abundant efforts put into digital work, which would indicate considerable exploitation of their digital skill.

Internet Access

With the expense for accessing the internet, the experiential expectation around the cost of internet access had no notable relationship with the initial participation in digital work activities, as was shown by the correlation value for the variable, "ExpctInternetAccess" in Table 27. In addition to that, the mean and median values for the "ExpctInternetAccess" variable in Table 4 indicated that the respondents who had crowdsourcing experience had a strongly positive expectation of obtaining adequate internet access. The quantitative result for the experiential expectation around the cost of internet access seemed to reinforce some of the views contributed amongst the qualitative responses concerning internet cost and access.

Some of the respondents who contributed qualitative responses did undergo certain challenges with internet costs such as expensive mobile data costs and high costs for reliable wireless internet.

However, most of the qualitative respondents were able to deal with the challenges of internet costs and obtain a reasonable amount of internet access and thus their participation in digital work was not considerably affected by internet costs and access issues. Concerning the observation about the qualitative respondents, various studies around digital labour highlighted that there were recorded to be approximately 28.6 million South Africans who consume the internet, even though only 10.4% of South Africans have internet access at home (Qwertydigital, 2017; Stats SA, 2018).

Work Opportunities

When taking into consideration potential work opportunities in digital labour, the quantitative result of the experiential expectation around digital work opportunities was significantly affected, with a moderately strong effect, by the initial participation in digital labour jobs, as shown by the correlation value for the "ExpctOpportunity" variable in Table 27. Furthermore, the mean and median values shown in Table 4 for variable "ExpctOpportunity" signified that the experienced respondents concerning crowdsourcing had a fairly positive expectation about obtaining opportunities more easily through digital platforms.

With the qualitative responses, most respondents held a positive view that digital platforms could provide desirable digital opportunities, just as resembled by the quantitative result about the experiential expectation around digital work opportunities. From the qualitative responses shared, the respondents believed that digital work opportunities could be discovered, that would incorporate certain benefits such as collaboration with other professionals, developing of skills, direct contact with more clients globally and locally, working from any location and earning of foreign currency. In partial support of some of the qualitative views, digital labour studies emphasize that digital platforms have caused work to become more distributed over local and global environments, giving rise to more employment opportunities for digital workers (Richardson, 2017).

Networking

When examining the aspect of networking individuals in digital labour, certain quantitative analysis results showed the experiential expectation of having important social connections for digital labour had a fairly significant relationship with the initial participation in digital labour as displayed by the correlation value for "ExpctRelationships" in Table 27. Also, from the statistics in Table 4 for the "ExpctRelationships" variable, the respondents on average were reasonably expectant that social relationships would be essential for them just as was also shown by the qualitative responses. For the qualitative responses, most respondents mentioned that the social connections for digital labour were useful to them for executing projects, obtaining more clients and potentially earning higher wages.

In addition to the point about social connections for digital labour purposes, Richardson (2017) mentioned that the lines between socialising and performing online work would become less definitive due to the forming of work through the collaboration and interactions between digital workers that would happen on digital platforms. Only a few respondents though, from the qualitative responses, expressed that possessing a sense of social belonging on digital platforms would be of importance for them. Moreover, the mean and median value for the variable

"ExpctSocialBelonging" in Table 4 indicated the respondents were undecided about whether social belonging in digital labour would be essential for them.

For the quantitative analysis, the initial participation or experience of digital labour had a notable, moderate relationship with the average experiential expectations of digital labour as displayed in Table 28. Similarly, in the qualitative a few of the respondents who had encountered some drawbacks in their crowdsourcing experience issues such as lack of payment, burdensome work hours, either became more undecided and reluctant or just became extremely resentful of crowdsourcing platforms as a whole. However, Bordi et al. (2018) highlighted that stringent expectations of people may not necessarily always result in or be caused by undesirable experiences, such as when people find convenience in emailing contacts but struggle to manage emails that start to become plenty in number.

5.3.7 Continued Participation

When analysing the relationship involving the continued digital labour participation and the experiential expectations of digital labour, there were only a few experiential expectations that had a significant relationship with continued participation as shown in Table 29. One of the experiential expectations in digital labour that had a significant relationship with the continued digital labour participation was the experiential expectation of obtaining a living wage. Various studies emphasized that the payment received for digital work is a more significant motivator for digital workers than other intrinsic motivators (Durward et al., 2016). Additionally, in countries where there is a low GDP, like in African developing countries, wage received for digital work becomes a vital source of motivation for participation (Ellmer, Gegenhuber & Schuessler, 2019).

Another experiential expectation that had a relationship with the continued participation was the experiential expectation of knowledge creation and sharing on digital platforms. Meyer et al. (2019) mentioned how the internet has transformed the way knowledge is created and massively broadened the research scope. Davison and Ou (2017) also highlighted that knowledge can be created, shared and used to construct new ideas and solutions through social media, without interference from employers. Also from the qualitative responses, a few respondents mentioned that at times there is a lack of knowledge about freelancing platforms and opportunities that could be beneficial. The experiential expectations of digital labour represented in Table 30 had a notable moderately strong relationship with the continued digital labour participation as shown in Table 30. The continued participation in digital labour was modestly explained by the experiential expectations.

Moreover, when the experiential expectations of digital labour were combined with the initial participation in or experience with digital labour as displayed in Table 31, they had a very strong, significant relationship with the continued participation in digital labour. Also, the experiential expectations and the view about the initial participation in digital labour were able to explain a large amount of the variation in the continued participation in digital labour. The result obtained for continued participation resembled several literature studies which emphasised that people who

have experience in using a certain technology become more familiar with change and consequently are likely to continue using a technology (Gastaldi et al., 2019).

5.4 Summary of Findings

The relationship between the digital labour attitudes and the intention to participate in digital labour was investigated to address the first question. The findings in Table 22 showed that there was a notable, moderate relationship between the attitudes and the intention to participate in digital labour. The respondents on average who had a positive reaction the attitudes on average also had a positive reaction toward the intention to participate. Similarly, for the relationship between the digital labour attitudes and the initial or actual participation in digital labour highlighted in the second research question, the relationship was observed to be significant and positive, as shown in Table 24. Concerning the digital labour experiences, many of the qualitative views about their digital labour experiences were positive concerning aspects, particularly those such as compensation, networking, work opportunities and digital skills even though some qualitative views were also negative as well. Also, the qualitative result around digital labour experience largely agreed with the quantitative descriptive statistics. For the fourth research question, the quantitative results showed that the initial participation strongly, positively related with the continued participation, with the respondents on average having positive views around the continued digital labour participation.

6. Conclusion

The research was aimed at exploring in depth the various attitudes and experiences of crowdworkers in South Africa concerning digital labour. The research questions were targeted around the main constructs, described in the Digital Labour Framework in Figure 1a, which would represent the various aspects of digital labour. As there is still a research gap regarding the emphasis on digital labour in a developing country context or continued digital labour participation even though there are studies that partially cover this area, this study contributes significantly to the body of knowledge in these regards. For the research method, survey responses from 70 people potentially involved in crowdsourcing were gathered as research data to be analysed against research theories described in the Figure 1a Framework. The research data were analysed using mixed methods approach involving quantitative and qualitative analysis methods to examine whether they would reinforce, add to or contradict the Figure 1a framework theories and address the main research questions and objectives.

6.1 Research Question One

For the first research question, the first and second objectives were concerned with how the constructs of the barriers and the initial expectations would affect the digital labour attitude and consequently impact the relationship highlighted in research question one. As the research question as largely concerned with the perception of digital labour affecting the decision to participate in digital labour practice, the first and second objectives would appropriately add up towards the relationship stipulated in research question one. The first research objective was for investigating the key barriers that would relate to the attitudes toward digital labour. One of the key barriers that would affect the attitude toward digital labour was the digital skills of workers.

Other barriers such as internet costs, policies affecting internet access, potential ethnic background discrimination were observed to have no notable effect on the attitudes towards digital labour. The barriers, when combined, had a significant relationship with the attitudes towards digital labour, of mediocre effect. Then the second research objective was included to investigate the effect of the initial expectations of digital labour on the attitudes of individuals toward digital labour. The initial expectation of obtaining a living wage was observed to have one of the most significant relationships, of moderate effect with the attitudes toward digital labour. The combination of the initial expectations of digital labour had a significant positive relationship with the attitudes of digital workers toward digital labour of moderate effect.

Regarding the first research question, it asked about what relationship the digital labour attitudes would have with the intention of individuals to participate in digital labour. The average attitude of the survey respondents towards digital labour was found to be strongly positive overall. The attitudes of individuals toward digital labour were discovered to have a significant positive relationship with the intention of individuals to participate in digital labour. The attitudes around crowdsourcing job security and digital jobs being better than formal jobs had the most considerable effect on the intention to participate.

6.2 Research Question Two

The third objective was about investigating the digital labour experiences of workers participating in digital labour and the relationship of the experiential expectations with the digital labour attitudes. The experiential expectations around compensation, internet access and cost, network connections, digital skills and work opportunities were all found to positively affect the digital labour experience of individuals and to relate positively with the attitude towards digital labour. The initial experience of digital workers was observed to be overall positive. As the third objective would be oriented towards the aspects of experience, it would build on suitably to the third research question where the relationship is focused on how an individual's initial digital labour experience is affected. For the relationship highlighted in the second research question, when the attitudes toward digital labour were combined, they were found to have a notable, positive and moderate relationship with the initial participation in digital labour. When the attitudes toward digital labour were investigated together with the intention of individuals to participate in digital labour, they were all observed to relate positively and strongly with the initial experience of digital labour.

6.3 Research Question Three

The third research question was about how some of the main digital labour aspects affect the experiences of digital workers. With the third research question, the qualitative responses were primarily used to investigate aspects of digital labour experiences in greater detail. The main aspects of digital labour that had the most notable effect on the respondents' digital work experiences were compensation, work opportunities, networking opportunities and digital skills. Regarding compensation, a significant number of respondents felt that the monetary reward received for producing online work was very little, even though other respondents felt that they had been able to receive desirable wages, through global platforms and opportunities. With aspects such as work opportunities, networking opportunities and digital skills, most respondents had a positive reaction and experienced significant benefits regarding each of those aspects overall. With internet costs and access, most survey respondents had adequate internet access even though they viewed internet cost to be a significant digital labour barrier.

6.4 Research Question Four

With regards to the fourth research question, the question asked about the effect of the past experiences of digital labour on their continued participation in digital labour. The experiential expectations of digital labour were found to have a notable, moderate and positive relationship with the continued participation of workers in digital labour. Also, the initial participation of digital workers was investigated alongside the experiential expectations to test whether they would have any relationship with the continued participation in digital labour. The initial participation and the experiential expectations of digital labour had a very significant, positive and strong relationship with the continued participation of digital labour, which agreed with the outcome of other studies that examined the continued use of certain technologies. The aspects of experience and initial participation of workers in digital labour had a very strong effect on the continued participation of workers in digital labour.

6.5 Contributions of Research

This research makes a contribution to the research community by investigating key theories described in the Figure 1a framework, that would explain various aspects around ICT that affect the intention to participate, the actual and continued participation in digital labour. This digital labour research, therefore, extracts critical insights around digital labour which are not covered in many studies. Analysis results such as the relationships between the experiential expectations of sharing of knowledge, obtaining a living wage and the continued participation in digital labour were found to be of quite notable significance. Theoretical aspects of digital labour not often examined within an African context in research studies such as the attitudes concerning digital job security, digital job alternatives, were investigated to analyse their practical effect on the experiences of and actual participation in digital labour. Figure 1a theories were investigated using the research instrument in Appendix A to gather a variety of views around the different aspects of digital labour.

Moreover, this research yields a notable contribution to the community at large consisting of policymakers, platform owners and crowdworkers by highlighting the Figure 1a aspects and their effect on the experiences of digital workers such as internet costs, crowdsourcing job security, living wage and others. Analysing digital labour theories described in Figure 1a would yield insights that could be useful for creation of suitable digital jobs and policies that could form favourable work conditions for crowdworkers in digital jobs, reduce unemployment and allow crowdworkers to voice critical concerns around digital work. The digital labour research could provide crowdworkers more information about significant issues around digital platforms and jobs when selecting particular digital tasks. For platform owners, the research could grant insights into the key aspects that affect digital workers, such as workers' wages and workers' digital skills. The digital labour research could help platform owners attract the workers that are most suitable for their platforms based on criteria such as workers' skills, and devise strategies to cause their workers to be more productive in their work and to retain valuable workers.

6.6 Research Limitations

Regarding the limitations of this research, one of the main limitations of this research was a significant lack of funding to be able to include a higher number of respondents for the survey. A financial incentive was crucial for encouraging participation in the survey and the compensation offered for survey participation in certain cases was insufficient to attract more respondents at times. Also, obtaining access to respondents was a challenge because a lot of digital platforms such as PeoplePerHour, Upwork, would restrict access to contacts and conceal details of users of the platform.

6.7 Recommendations for Future Research

A recommendation for further research concerning digital labour would be to research the issue of social security in digital labour, to investigate how workers could ensure that they receive just wages and work conditions on digital platforms. With the number of prevalent digital platforms that are used in many African countries, particularly like South Africa, it is important to analyse the issue of social security concerning wages and other key work conditions around digital labour to prevent

unfair, exploitative and exclusionary practices on digital platforms. Policymakers could utilise crowdsourcing platforms and projects to engage citizens and gather ideas, information and resources that could be instrumental in formulating policies to enhance online employment opportunities and working conditions in countries like South Africa.

As an example, certain agencies such as the United Nations Non-Governmental Liaison Services (UN-NGLS), tend to use crowdsourcing platforms to engage with citizens globally, in order to gather critical contributions for achieving organisational goals, improving business practices (Ingwe, 2017). As another recommendation for future research, an increased focus on implementing digital labour in impoverished communities, not just in South Africa but also in other African countries would be of much value in research. For addressing core issues being faced in African countries through digital labour such as lack of infrastructure, lack of internet access, unemployment, carrying out research specifically targeting impoverished communities in African countries would be of critical importance.

7. References

Abbott, P. (2013). How can African countries advance their outsourcing industries: An overview of possible approaches. *The African Journal of Information Systems, 5*(1), 2.

Abrami, P. C., Wade, C. A., Lysenko, L., Marsh, J., & Gioko, A. (2016). Using educational technology to develop early literacy skills in Sub-Saharan Africa. *Education and Information Technologies*, *21*(4), 945-964.

Adukaite, A., & Cantoni, L. (2016). Raising awareness and promoting informal learning on World Heritage in Southern Africa: The case of WHACY, a gamified ICT-enhanced tool. *International Journal of Education and Development using Information and Communication Technology*, *12*(2), 50.

Akman, I., & Mishra, A. (2017). Factors influencing consumer intention in social commerce adoption. *Information Technology & People, 30*(2). DOI: 10.1108/ITP-01-2016-0006

Akomea-Bonsu, C., & Sampong, F. (2012). The impact of Information and Communication Technologies (ICT) on Small and Medium Scale Enterprises (SMEs) in the Kumasi Metropolis, Ghana, West Africa. *European Journal of Business and Management, 4*(20), 152-158.

Alamäki, A. (2018). A conceptual model for knowledge dimensions and processes in design and technology projects. *International Journal of Technology and Design Education*, *28*(3), 667-683.

Alharahsheh, H., & Pius, A. (2020). A Review of key paradigms: positivism VS interpretivism. *Global Academic Journal of Humanities and Social Sciences*, *2*(3), 39-43.

Ansen, J. B. (2014). Sustainably developing e-skills in Africa-A case with enterprise resource planning (ERP) system. *Journal of Emerging Trends in Educational Research and Policy Studies, 5*(8), 148-152.

Asongu, S. A. (2017). The comparative economics of knowledge economy in Africa: policy benchmarks, syndromes, and implications. *Journal of the Knowledge Economy*, *8*(2), 596-637.

Asongu, S., Biekpe, N. and Tchamyou, V. (2019). Remittances, ICT and doing business in Sub-Saharan Africa. *Journal of Economic Studies, 46 (*1), 35-54. DOI: 10.1108/JES-06-2017-0146

Asongu, S. A., & Le Roux, S. (2017). Enhancing ICT for inclusive human development in Sub-Saharan Africa. *Technological Forecasting and Social Change*, *118*, 44-54. DOI:10.1016/j.techfore.2017.01.026

Bimbe, N., Brownlee, J., Gregson, J., & Playforth, R. (2015, May). Knowledge sharing in Africa: Perspectives on the future. In *IST-Africa Conference, 2015*, 1-8.
DOI: 10.1109/ISTAFRICA.2015.7190594

Battistella, C., & Nonino, F. (2012). What drives collective innovation? Exploring the system of drivers for motivations in open innovation, Web-based platforms. *Information Research*, *17*(1), 513.

Belleflamme, P., Omrani, N., & Peitz, M. (2015). The economics of crowdfunding platforms. *Information Economics and Policy*, *33*, 11-28. DOI: 10.1016/J.INFOECOPOL.2015.08.003

Benghozi, P. J., & Paris, T. (2016). The cultural economy in the digital age: A revolution in intermediation? *City, Culture and Society*, *7*(2), 75-80.

Bordi, L., Okkonen, J., Mäkiniemi, J. P., & Heikkilä-Tammi, K. (2018). Communication in the digital work environment: implications for wellbeing at work. *Nordic journal of working life studies, 8*(S3). DOI: tidsskrift.dk/njwls/index

Bornman E. (2016). Information society and digital divide in South Africa: results of longitudinal surveys. *Information, Communication & Society, 19*(2), 264-278. DOI: 10.1080/1369118X.2015.1065285

Bott, M., Gigler, B. S., & Young, G. (2014). The role of crowdsourcing for better governance in fragile state contexts. *Closing the Feedback Loop*, 107-148*.* DOI: 10.1596/978-1-4648-0191-4

Braun, V. & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology, 3(*2), 77-101. DOI: 10.1191/1478088706qp063oa

Burgess, A., Ravishankar, M. N., & Oshri, I. (2015). Getting impact sourcing right. *Professional Outsourcing, 21,* 26-35. Retrieved from https://dspace.lboro.ac.uk/dspace-jspui/bitstream/2134/18723/3/BURGESS.pdf

Butt, B. (2015). Herding by mobile phone: technology, social networks and the "transformation" of pastoral herding in East Africa. *Human Ecology, 43*(1), 1-14.

Casilli, A. A. (2017). Global Digital Culture| Digital Labor Studies Go Global: Toward a Digital Decolonial Turn. *International Journal of Communication*, *11*, 3934–3954. Retrieved from http://ijoc.org/index.php/ijoc/article/download/6349/2149

Chavarika, G. V. (2016). The influence of motives on consumer attitudes toward participating in co-creation activities: a study on digital banking in South Africa (Doctoral dissertation, University of Witwatersrand, Johannesburg, South Africa). Retrieved from http://wiredspace.wits.ac.za/handle/10539/21985

Chigada, J. M., & Hirschfelder, B. (2017). Mobile banking in South Africa: A review and directions for future research. *South African Journal of Information Management, 19*(1), 1-9.

Chuene, D., & Mtsweni, J. (2015). The adoption of crowdsourcing platforms in South Africa. In *IST-Africa Conference,* 1-9. DOI: 10.1109/ISTAFRICA.2015.7190561

Cirera, X., Lage, F. and Sabetti, L. (2016). ICT Use, Innovation, and Productivity: Evidence from Sub-Saharan Africa. *World Bank Policy Research,* 7868. Retrieved from https://ssrn.com/abstract=2867649

Cobanoglu, C. & Cobanoglu, N. (2003). The effect of incentives in web surveys: application and ethical considerations. *International Journal of Market Research, 45(* 4). DOI: 10.1177/147078530304500406

Combi, C., Pozzani, G., & Pozzi, G. (2016). Telemedicine for Developing Countries. A Survey and Some Design Issues. *Applied clinical informatics, 7(*4), 1025-1050.

Correa, T. (2016). Digital skills and social media use: how Internet skills are related to different types of Facebook use among 'digital natives'. *Information, Communication & Society*, *19(*8), 1095-1107.

Cupido K., & Ophoff J. (2014). A Model of Fundamental Components for an e-Government Crowdsourcing Platform. *Electronic Journal of e-Government, 12 (*2)*,* 142-157.

Dalberg (2016). Digital Jobs in Africa: Catalyzing Inclusive Opportunities for Youth. *Rockefeller Foundation.* Retrieved from https://assets.rockefellerfoundation.org/app/uploads/20131217164951/Catalyzing-Inclusive-Opportunities-For-Youth.pdf

Davison, R. M., & Ou, C. X. (2017). Digital work in a digitally challenged organization. *Information & Management*, *54*(1), 129-137.

Deci, E. L., & Ryan, R. M. (1985). Intrinsic motivation and self-determination in human behavior. New York: Plenum.

Deci, E. L., & Ryan, R. M. (2002). Overview of self-determination theory: An organismic dialectical perspective. *Handbook of self-determination research*, (pp. 3-33).

Deci, E. L., & Ryan, R. M. (2008). Self-determination theory: A macrotheory of human motivation, development, and health. *Canadian psychology/Psychologie canadienne*, *49*(3), 182-185.

Dey, A., Vijayaraman, B. S., & Choi, J. H. (2016). RFID in US hospitals: an exploratory investigation of technology adoption. *Management Research Review*. 39(4). DOI 10.1108/MRR-09-2014-0222

Dunn, M. (2017). Digital work: New opportunities or lost wages?. *American Journal of Management*, *17*(4).

Durward, D., Blohm, I., & Leimeister, J. M. (2016). Crowd work. *Business & Information Systems Engineering*, *58*(4), 281-286.

Elander, K., & Cronje, J. C. (2016). Paradigms revisited: a quantitative investigation into a model to integrate objectivism and constructivism in instructional design. *Educational Technology Research and Development*, *64*(3), 389-405.

Ellmer, M., Gegenhuber, T. K., & Schuessler, E. S. (2019, July). Exploring Crowdworker Participation on Digital Work Platforms. In *Academy of Management Proceedings, 2019*(1). DOI:10.5465/AMBPP.2019.268

El Maarry, K., Güntzer, U., & Balke, W. T. (2015, June). Realizing impact sourcing by adaptive gold questions: a socially responsible measure for workers' trustworthiness. In *International Conference on Web-Age Information Management, 9098,* 17-29. DOI: 10.1007/978-3-319-21042-1_2

FSD Africa, Cambridge Centre for Alternative Finance & Anjarwalla and Khanna (2017). Crowdfunding in East Africa: Regulation and Policy for Market Development. Retrieved from https://www.jbs.cam.ac.uk/fileadmin/user_upload/research/centres/alternative-finance/downloads/2017-05-eastafrica-crowdfunding-report.pdf

Fu, S. (2019). Rethinking digital labour for development. *The Public Sphere: Journal of Public Policy*, *7*(1).

Fuchs, C. (2014). Theorising and analysing digital labour: From global value chains to modes of production. *The Political Economy of Communication*, *1*(2).

Gagné, M., & Deci, E. L. (2005). Self-determination theory and work motivation. *Journal of Organizational behavior*, *26*(4), 331-362.

Gandini, A. (2016). Digital work: Self-branding and social capital in the freelance knowledge economy. *Marketing theory*, *16*(1), 123-141.

Gastaldi, L., Radaelli, G., Lettieri, E., Luzzini, D., & Corso, M. (2019). Professionals' use of ICT in hospitals: the interplay between institutional and rational factors. *International Journal of Technology Management*, *80*(1-2), 85-106.

Gatara, M. (2012). Predicting Intention to Participate in Mobile Crowdsourcing Initiatives: A Study of Local Kenyan Communities (Master's thesis, University of Witwatersrand, Johannesburg, South Africa). Retrieved from http://wiredspace.wits.ac.za/bitstream/handle/10539/12467/Research%20report-(final)-revised%20submission-MGatara(494525).pdf?sequence=1

Gatautis R., Vitkauskaite, E. (2014). Crowdsourcing Application in Marketing Activities. *Procedia - Social and Behavioral Sciences, 110*, 1243-1250. DOI: 10.1016/j.sbspro.2013.12.971

Gomesa, J., Romãoa, M. & Carvalhob H. (2016). Successful IS/IT projects in Healthcare: Pretesting a questionnaire. *Procedia Computer Science, 100*, 375 – 382. DOI:10.1016/j.procs.2016.09.172

Graham, M., Hjorth, I., & Lehdonvirta, V. (2017). Digital labour and development: impacts of global digital labour platforms and the gig economy on worker livelihoods. *Transfer: European Review of Labour and Research*, *23(2),* 135–162, DOI: 1024258916687250

Graham, M., Woodcock, J., Heeks, R., Fredman, S., Du Toit, D., Belle, J.-P. v., ... Osiki, A. (2019). The Fairwork Foundation: Strategies for Improving Platform Work. In *Proceedings of the Weizenbaum Conference 2019 "Challenges of Digital Inequality - Digital Education, Digital Work, Digital Life"*, 1-8. DOI:10.34669/wi.cp/2.13

Heeks, R. (2013). Information technology impact sourcing. *Communications of the ACM, 56(*12), 22-25.

Heeks, R. (2017). Decent work and the digital gig economy: a developing country perspective on employment impacts and standards in online outsourcing, crowdwork, etc. *Development Informatics Working Paper*, (71). DOI: 10.2139/ssrn.3431033.

Hjort, J., & Poulsen, J. (2019). The arrival of fast internet and employment in Africa. *American Economic Review*, *109*(3), 1032-79.

Huili, Y., Zhenzhen, W., & Tao, Z. (2016). Study on the Investors' Participation Motivations in Award-Based Crowdfunding. *International Business and Management*, *12*(2), 29-33.

ILO (2019). Country profiles, The latest decent work statistics by country. Retrieved from https://ilostat.ilo.org/data/country-profiles/

Jaziri, R., & Miralam, M. (2019). Modelling the crowdfunding technology adoption among novice entrepreneurs: an extended TAM model. *Entrepreneurship and Sustainability Issues*, *6*(4), 2159-2179.Kamsu-Foguem, B., & Foguem, C. (2014) Telemedicine and mobile health with integrative medicine in developing countries. *Health Policy and Technology, 3*(4), 264-271.

Kelley K., Clark B., Brown V., Sitzia J., (2003). Good practice in the conduct and reporting of survey research. *International Journal for Quality in Health Care*, *15(*3), 261–266. DOI:10.1093/intqhc/mzg031

Krauss, K. (2013). Collisions between the worldviews of international ICT policy-makers and a deep rural community in South Africa: Assumptions, interpretation, implementation, and reality. *Information Technology for Development, 19*(4), 296-318.

Kumar, P. G., & Ratnakar, R. (2016). A scale to measure Farmers' Attitude towards ICT-based Extension Services. *Indian Research Journal of Extension Education*, *11*(21), 109-112.

Lacity, M., Rottman, J. W., & Carmel, E. (2014). Impact Sourcing: Employing prison inmates to perform digitally-enabled business services. *Communications of the AIS, 34*(1), 913-932.

Lacity, M. C., Willcocks, L. P., & Craig, A. (2014). South Africa's business process outsourcing services sector: Lessons for Western-based client firms. *South African Journal of Business Management, 45*(4), 45-58.

Langley, P., & Leyshon, A. (2017). Platform capitalism: the intermediation and capitalisation of digital economic circulation. *Finance and society.*, *3*(1), 11-31.

Latif, S., Rana, R., Qadir, J., Imran, M., & Younis, S. (2017). Mobile health in the developing world: Review of literature and lessons from a case study. *IEEE Access*, *5*, 11540-11556. DOI: 10.1109/ACCESS.2017.2710800

Liu, B., & Sundar, S. S. (2018). Microworkers as research participants: Does underpaying Turkers lead to cognitive dissonance?. Computers in Human Behavior, 88, 61-69.

Luther Osabutey, E., & Debrah, Y. A. (2012). Foreign direct investment and technology transfer policies in Africa: A review of the Ghanaian experience. *Thunderbird International Business Review*, *54*(4), 441-456.

Machine, D., & Ophoff, J. (2014). Understanding What Motivates Participation on Crowdsourcing Platforms. In *e-Skills for Knowledge Production and Innovation Conference, Cape Town, South Africa*, 191-200. Retrieved from http://proceedings.e-skillsconference.org/2014/e-skills191-200Machine820.pdf

Mann, L., & Graham, M. (2016). The Domestic Turn: Business Process Outsourcing and the Growing Automation of Kenyan Organisations. *The Journal of Development Studies*, *52*(4), 530-548.

Mapande, F. V., Zuva, T., & Appiah, M. (2018). Users' Perceptions on Security of Mobile Computing for Adoption of e-Applications in South Africa. In *2018 International Conference on Advances in Big Data, Computing and Data Communication Systems,* 1-8. DOI: 10.1109/ICABCD.2018.8465127

Mars, M. (2013). Telemedicine and advances in urban and rural healthcare delivery in Africa. *Progress in cardiovascular diseases*, *56*(3), 326-335.

Mayoka, K. G., Rwashana, A. S., Mbarika, V. W., & Isabalija, S. (2012). A framework for designing sustainable telemedicine information systems in developing countries. *Journal of Systems and Information Technology, 14(*3), 200-219.

Mbongo, L. D. B. E., & De Berquin, L. (2019). ICT diffusion and employment in Africa. *Economics Bulletin*, *39*(1), 521-532.

Mbuba, F. H., & Wang, W. Y. C. (2014). Software as a Service Adoption: Impact on IT Workers and Functions of IT Department. *Journal of Internet Technology, 15*(1), 116.

Mbuyisa, B., & Leonard, A. (2015). ICT Adoption in SMEs for the Alleviation of Poverty. In *International Association for Management of Technology Conference Proceedings,* 1-21. Retrieved from http://iamot2015.com/2015proceedings/documents/P105.pdf

Mohammadi, D. (2015). ENIGMA: crowdsourcing meets neuroscience. *The Lancet Neurology*, *14*(5), 462-463.

Meyer, E. T., Shankar, K., Willis, M., Sharma, S., & Sawyer, S. (2019). The social informatics of knowledge. *Journal of the Association for Information Science and Technology*, *70*(4), 307-312.

Misra, N., Khanna, R. C., Mettla, A. L., Marmamula, S., Rathi, V. M., & Das, A. V. (2020). Role of teleophthalmology to manage anterior segment conditions in vision centres of south India: EyeSmart study-I. *Indian Journal of Ophthalmology*, *68*(2), 362.

Mtsweni, J., & Burge, L. (2014, May). The potential benefits of mobile microwork services in developing nations: Research opportunities and challenges. In *IST-Africa Conference Proceedings*, 1-10. DOI**:** 10.1109/ISTAFRICA.2014.6880636

Mtsweni, J., Ngassam, E. K., & Burge, L. (2016, May). A profile-aware microtasking approach for improving task assignment in crowdsourcing services. In *IST-Africa Week Conference,* 1-10. DOI**:** 10.1109/ISTAFRICA.2016.7530702

Muldoon, C., O'Grady, M. J., & O'Hare, G. M. (2018). A survey of incentive engineering for crowdsourcing. *The Knowledge Engineering Review, 33*, 1-24. DOI: 10.1017/S000000000000000

Murugesan, S. (2013). Mobile apps in Africa. *IT Professional*, *15*(5), 8-11.

Nhavoto, J. A., & Grönlund, Å. (2014). Mobile technologies and geographic information systems to improve health care systems: a literature review. *Journal of medical Internet research mHealth and uHealth, 2*(2). DOI: 10.2196/mhealth.3216

Nkuna, M., Jordaan, M., & Zängl, P. (2020). A photovoice study on the perceptions among unemployed youth of information technology in Mamelodi, South Africa. *Social Work & Society, 18(*1).

Nkwe, N. (2012). E-government: challenges and opportunities in Botswana. *International journal of humanities and social science*, *2*(17), 39-48.

Okewu, E (2015). Enhancing Small and Medium Enterprises (SMEs) in Africa through Service Oriented Software Engineering (SOSE). In*: Covenant University International Conference on African Development Issues*, 91-97. Retrieved from http://eprints.covenantuniversity.edu.ng/id/eprint/5320

Onkokame, M., Schoentgen, A., & Gillwald, A. (2018). What is the state of microwork in Africa? A view from seven countries. *Policy Paper*, *5(*2).

Pénard, T., Poussing, N., Mukoko, B., & Piaptie, G. B. T. (2015). Internet adoption and usage patterns in Africa: Evidence from Cameroon. *Technology in Society*, *42*, 71-80. DOI:10.1016/j.techsoc.2015.03.004

Petersen, F., Brown, A., Pather, S., & Tucker, W. D. (2019). Challenges for the adoption of ICT for diabetes self-management in South Africa. *The Electronic Journal of Information Systems in Developing Countries*, 1-14. DOI: 10.1002/isd2.12113

Qwertydigital (2017). The Digital Landscape In South Africa 2017. Retrieved from https://qwertydigital.co.za/wp-content/uploads/2017/08/Digital-Statistics-in-South-Africa-2017-Report.pdf

Rahi, S., & Ghani, M. A. (2019). Integration of DeLone and McLean and self-determination theory in internet banking continuance intention context. *International Journal of Accounting & Information Management. 27(*3), 512-528. DOI: 10.1108/IJAIM-07-2018-0077.Richardson, L. (2017). Sharing as a postwork style: digital work and the co-working office. *Cambridge journal of regions, economy and society*, *10*(2), 297-310.

Richardson, L., & Bissell, D. (2019). Geographies of digital skill. *Geoforum*, *99*, 278-286. DOI: 10.1016/j.geoforum.2017.09.014

Robberts, M., Engelbrecht, K., & Van Der Poll, J. A. (2015). A framework for the support of mobile knowledge workers in South Africa. *2015 International Conference on Computing, Communication and Security,* 1-9. DOI: 10.1109/CCCS.2015.7374151

Sandeep, M. S., & Ravishankar, M. N. (2016). Impact sourcing ventures and local communities: a frame alignment perspective. *Information Systems Journal*, *26*(2), 127-155.

Sassetti, F. (2019). Social Media and Crowdsourced Election Monitoring. *Politikon: The IAPSS Journal of Political Science*, *42*, 7-39.

Siponen, M., & Tsohou, A. (2018). Demystifying the influential IS legends of positivism. *Journal of the Association for Information Systems*, *19*(7).

Solemon, B., Ariffin, I., Din, M. M., & Anwar, R. M. (2013). A review of the uses of crowdsourcing in higher education. *International Journal of Asian Social Science*, *3*(9), 2066-2073.

Stats SA (2018). General Household Survey. Retrieved from http://www.statssa.gov.za/publications/P0318/P03182018.pdf

Stork, C., Calandro, E., & Gillwald, A. (2013). Internet going mobile: internet access and use in 11 African countries. *info, 15*(5), 34-51.

Tchamyou, V. S., Erreygers, G., & Cassimon, D. (2019). Inequality, ICT and financial access in Africa. *Technological Forecasting and Social Change*, *139*, 169-184. DOI: 10.1016/j.techfore.2018.11.004

Tripathi, A., Tahmasbi, N., Khazanchi, D., & Najjar, L. (2014). Crowdsourcing typology: a review of is research and organizations. *Proceedings of the Midwest Association for Information Systems. 4,* 1-9*.* Retrieved from http://aisel.aisnet.org/mwais2014/4

Tucker, J. D., Tang, W., Li, H., Liu, C., Fu, R., Tang, S., ... & Tangthanasup, T. M. (2018). Crowdsourcing designathon: a new model for multisectoral collaboration. *BMJ Innovations*, *4*(2), 46-50.

Twinomurinzi, H., Phahlamohlaka, J., & Byrne, E. (2012). The small group subtlety of using ICT for participatory governance: A South African experience. *Government Information Quarterly, 29*(2), 203-211.

Van Doorn, N. (2017). Platform labor: on the gendered and racialized exploitation of low-income service work in the 'on-demand'economy. *Information, Communication & Society*, *20*(6), 898-914.

Varma, M., Kumar, V., Sangvikar, B., & Pawar, A. (2019). Impact Of Social Media, Security Risks And Reputation Of E-Retailer On Consumer Buying Intentions Through Trust In Online Buying: A Structural Equation Modeling Approach. *Journal of Critical Reviews*, *7*(1), 2020.

Wachira, B. (2016). Uchunguzi (Journal Watch/Montre de Journal) December 2016. *African Journal of Emergency Medicine*, *6*(4), 202.

Wachira, W., Brookes, M., & Haines, R. (2016). Viewing the impact of outsourcing from a Kenyan perspective. *Asian Journal of Management Science and Economics*, *3*(1), 24-43.

Wayde, R. P., & Rogerson, C. M. (2014). South Africa's call centre industry: The emerging challenges of a growing destination in the global South. *Mediterranean Journal of Social Sciences*, *5*(8), 208.

Wazny, K. (2017). "Crowdsourcing" ten years in: A review. *Journal of global health*, *7*(2).

World Bank (2018). Globally, Countries Lose $160 Trillion in Wealth Due to Earnings Gaps Between Women and Men. *The World Bank*. Retrieved from https://www.worldbank.org/en/news/press-release/2018/05/30/globally-countries-lose-160-trillion-in-wealth-due-to-earnings-gaps-between-women-and-men

Zhang, Z., & Gupta, B. B. (2018). Social media security and trustworthiness: overview and new direction. *Future Generation Computer Systems*, *86*, 914-925. DOI: 10.1016/j.future.2016.10.007

8. Appendices:

8.1 Appendix A: Research Instruments

Questionnaire

A. Participant Basic Info

1. Which age group do you belong to?

Please tick one box

☐ 18 to 25 years

☐ 26 to 35 years

☐ 36 to 45+ years

☐ 46 to 60 years

☐ 61+ years

2. Please could you select your gender.

☐ Male ☐ Prefer not to answer

☐ Female

3. What is your primary type of access to the internet?

☐ Public place (e.g. library,)

☐ Work / Home ADSL

☐ Home Fibre

☐ Mobile Phone

☐ Mobile Router

Other : ☐

B. Competencies

4. What is the highest level of qualifications you have received?

Please tick one box

- ☐ Less than high school
- ☐ High school degree or equivalent
- ☐ Some college but no degree
- ☐ Diploma
- ☐ Bachelor degree
- ☐ Graduate degree

Other : ☐

5. Please select the electronic devices that you possess/have access to.

- ☐ Personal Computer
- ☐ Tablet
- ☐ Smartphone
- ☐ Feature phone

6. Please select, of the technical skills shown below, the ones which you are able to perform:

-

- ☐ download & save files, such as graphics, documents from the Internet
- ☐ locate a website given the address
- ☐ Building webpages/sites using HTML/ CSS or other tools
- ☐ Design charts and spreadsheets

☐ Create database

☐ set up an email account

☐ read email messages

☐ Editing images and photos with tools such as adobe Photoshop

☐ Writing and Sharing content on social networking, blogging sites

☐ Basic use of simple computer coding languages such as PHP, python, JavaScript etc.

☐ Networking people through social media websites and platforms

☐ advanced programming skills

☐ advanced graphics design

☐ translating

☐ proofreading

Other skills : ☐

7. Which industries are you be involved in? (This question is to find out if type of industry affects the attitude towards digital labour participation)

☐

8. What kind of digital tasks would you feel most able to perform on a crowdsourcing platform?

☐

9. **Do you participate in any online crowdsourcing job through the internet?**

   ☐ Yes

   ☐ No

10. **Do you have any intention of participating in any online crowdsourcing jobs?**

    ◯ Very eager ◯ Eager ◯ Undecided ◯ Uninterested ◯ Very Uninterested

11. **Which any online crowdsourcing platforms are you aware of if any (e.g. twitter, YouTube, freelancer, kickstarter, M4Jam)?**

12. **What is the number of years have you been working on crowdsourcing platforms?**

13. **Regarding your crowdsourcing**
    a. **Please could you state the crowdsourcing platform you are currently on(e.g. M4Jam, Freelancer etc).**

    b. **Do you receive any payment for work that is**

produced online or through the internet? If so, how?

- ☐ Yes, I get paid for the number of tasks that I complete
- ☐ For each task, I do get paid according to how well the task has met client
- ☐ Yes I get paid according to the complexity of the task(s) that I complete
- ☐ No I do not get paid for the work I produce

Other payment method

14. How do feel about being the monetary compensation for digital work or the lack thereof?

15. What would be the main incentives that would motivate the participation of individuals in crowdsourcing initiatives?

16. Which technology devices (PC, mobile phone, tablet,

laptop etc.) do you use the most for crowdsourcing initiatives, and why?

17. **Which types of online tasks have you performed or are you performing?**

- ☐ Translation
- ☐ Sentiment analysis of social media posts
- ☐ Transcribing documents
- ☐ Photo-flagging
- ☐ Video- tagging
- ☐ Graphics design
- ☐ Algorithm writing

Other :

C. Expectations

	Regarding Digital Labour,....	Disagree	Disagree	Neutral	Agree	Agree
	I could obtain further employment opportunities more easily through online platforms					
	I feel I could get desirable financial compensation for the amount of online work that I produce on crowdsourcing platforms					
	Digital skills would be sought after and useful for jobs offered online					
	I have sufficient access to the internet in order to browse through or participate in digital platforms					
	Social connections and relationships are important for me when considering participating in online work					
	I feel a social belonging when using online platforms and networks					
	Social media is a useful way to promote innovation and developing of new ideas					
	Crowdsourcing will help with knowledge creation and sharing for communities, workers and people					
	Digital labour would make me more productive in my work					
	The security and privacy of my personal information and sensitive information for me is critical when doing online work					
	I feel that it is vital for me to participate in online work that makes a significant real-world impact in communities					

D. Barriers

Regarding Digital Labour,....	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
An individual's race could affect the number of employment opportunities online that one can get access to					
An individual's citizenship or location could also affect the number of employment opportunities online that one can get access to					
I am able to obtain affordable and adequate internet access the internet through a mobile phone, PC, or other digital means					
Government policy has made the internet more costly to access and use					
Government policy has an effect on whether the internet access across various parts of South Africa					
Smartphones are widely available and affordable					
I feel that the workload and the amount of hours spent doing work online would be manageable and not burdensome					
I feel that I can obtain the right balance between my work and spare time when doing online crowdsourcing work					
People who possess more digital skills are more likely to get paid and benefit more from digital work than those who are less digitally literate					
My competencies such as professional skills and education are critical for the kinds of online crowdsourcing jobs that I can undertake					
Privacy and Security Concerns about my personal information cause me to be less willing to pursue digital online jobs					

E. Attitudes

Regarding Digital Labour,....	**Strongly Disagree**	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**
Work that is performed online and through digital media can help to significantly reduce unemployment					
The compensation for my work done online is sufficient to sustain a living					
I could gain opportunities to build my professional skills and career through digital work					
The more technology possessed, the more one is likely to participate in digital platforms and networks					
Having the ability to work from any location for an online platform is a significant benefit					
Crowdsourcing has helped me improve my computer literacy and digital skills					
I believe digital work helps me to attain my career goals					
Helped me to work more cohesively with other crowdsourcing workers.					
It totally transformed channels of communication					
I believe that I could establish key business and social relationships and contacts through online platforms					

The crowdsourcing job represents the measure of my competence and skills					
Online jobs consist of the form of work that I am most interested in and that I enjoy					
Crowdsourcing jobs are better than traditional manual work/employment alternatives					
Potential fraud on online platforms makes me feel less certain about being able to obtain employment opportunities online					
I feel that participating in online work can cause me to make a significant real-world impact in communities and change people lives					
Concerns about the security my personal information online make me more reluctant to pursue digital online jobs					
I feel that I could work in a crowdsourcing job long-term without significant worry about losing my job					

F. Participation in Digital Labour

57. What is your impression of internet (mobile internet, Wi-Fi, LAN cable, dial-up etc.) costs and how they may affect participation on crowdsourcing platforms?

58. **Has participation in crowdsourcing changed any aspect(s) of your life in any way? If so, which aspects?**

59. **In what ways has your experience affected your view on working on crowdsourcing platforms from the time before you first participated in crowdsourcing?**

60. **How would you describe your experience or reaction to working with digital/ online platforms?**

◯ Very Good ◯ Good ◯ Neutral ◯ Bad ◯ Very Bad

61. **What were the causes that affected your reaction to/ experience with digital labour/online platforms?**

62. **Are you eager continuing working with digital labour platforms in the future?**

◯ Very eager ◯ Eager ◯ Undecided ◯ Uninterested ◯ Very Uninterested

Table 40b Digital Labour Framework Constructs' Sources

Construct/Sub-construct	Literature Source(s)	Explanation
Micro	Mtsweni and Burge (2014)	Term ' Micro' for this construct used to describe Aspects that affect the participation of an individual(e.g. micro-workers), on online platforms such as access to job opportunities, skills etc.
Technology possessed	Mbuyisa and Leonard (2015)	Refers to the technology that an individual has access to use, as technologies such as mobile phones could have impact on the kind of functionality and digital work that could be performed.
Digital skills	Mtsweni and Burge (2014)	Refers to digital skill an individual has to perform certain kinds of digital works from transcribing to programming tasks as examples.
Education Level	Chuene and Mtsweni (2015)	Denotes the education level of individual which could determine the digital jobs that could be accessed
Access to smartphones	Chigada and Hirschfelder (2017)	Refers to the ability of one to access smartphones necessary for online work
Worker Reputation	Durward, D., Blohm, I., & Leimeister, J. M. (2016)	Refers to the online reputation of digital workers based on reviews from online consumers
Age	Graham et al (2017),	Indicates how one may obtain access to certain digital jobs or opportunities based on age
Income	Durward, D., Blohm, I., & Leimeister, J. M. (2016), Graham et al. (2019)	Describes the ability of one to earn an income through performing digital work.
Macro	Tchamyou, Erreygers & Cassimon (2019)	Construct Represents the aspects that could affect the implementation of digital labour for many people in a region or country
Policy	Luther Osabutey & Debrah (2012), Bornman (2016)	Aspect describes the policies that implementation and use of ICTs in a country like South Africa and hence the practice of digital labour
Infrastructure	Butt (2015)	This aspect describes the ICT infrastructure and hardware that supports ICTs, mobile applications, networks and consequently affects the practices of digital labour
Internet costs	Cirera, Lage and Sabetti (2016)	Aspect describing the cost of internet access which often has its impact in a developing country context
Education	Asongu (2017)	This aspect is included as it highlights how education can impact digital labour practice as it is essential for human capital and the

		advancement of ICTs implementation and usage.
Barriers	Graham et al. (2017), Mann and Graham (2016)	The construct describes those aspects that enable or inhibit the willingness and ability of individuals to participate in digital labour practices such as the exclusion of workers, exploitation of labour etc.
Inclusion/Exclusion of workers	Graham et al. (2017), Mbuyisa, and Leonard (2015)	Emphasises the exclusion of workers from certain platforms due to religion, ethnicity etc.
Lack of technology access	Mbuyisa and Leonard (2015)	Highlights the barrier of access to ICTs and even networks were digital work is conducted
Exploitation of work	Fu (2019)	Indicates how digital labour often gets exploited particularly through lack of pay and cumbersome work hours
Digitally illiterate	Abrami et al. (2016)	This aspect describes possessing or lacking could potentially impact participation in digital labour activities such as a teacher's ability to conduct lessons based ICT literacy
Digital divide	Mtsweni and Burge (2014)	Indicates how problems with technologies such as lacking access to networks, internet and other technologies compared to other people in various parts of the world can impact participation in digital labour.
Initial Expectations	Rahi and Ghani (2019)	Construct represents the aspects that relate to the initial expectations of digital labour before one has participated in digital labour
Employment opportunities	Mtsweni et al. (2016)	Highlights the initial expectation obtaining access to employment job opportunities on online platforms
Financial compensation	Graham et al. (2019)	Emphasises the initial expectation of obtaining a desirable wage for performing digital work
Skills development	Cirera, Lage and Sabetti (2016)	Emphasises the initial expectations that people ould have to develop ICT skills through the use of technologies like the internet and digital jobs
Access to Technology	Mbuyisa and Leonard (2015)	Describes the initial expectation of individuals to access technologies, especially with the increased availability of mobile phones and the internet even in contexts like South Africa
Social fulfilment	Khan et al. (2016)	Highlights the expectation of people to obtain social fulfilment in digital labour through social online platforms and enhanced intrinsic motivation to participate in online activities. Represent an SDT aspect.

Job security	Graham et al. (2017)	This aspect describes the expectation of obtaining job security in digital labour through building online reputation and ranking systems which could promote opportunities for some and be a barrier to others.
Experiential expectations	Rahi and Ghani (2019)	Construct represents the expectations of digital labour after some initial experience participating in digital labour platforms.
Employment opportunities	Mtsweni et al. (2016)	Describe the experiential expectation of having employment opportunities being made available on online platforms even after some initial participation.
Financial compensation	Graham et al. (2019)	Highlights the experiential expectation of receiving desirable payment for digital work produced
Skills development	Cirera, Lage and Sabetti (2016)	Describes the expectation of enhancing digital skill even after the initial experience with using technologies and participating in digital work
Social fulfilment	Khan et al. (2018)	Calls attention to the expectation of achieving social fulfilment through participating on social digital labour platforms even after initial digital labour participation. Resembles an SDT aspect that represents a form of intrinsic motivation to participate in digital work.
Job security	Graham et al. (2017)	Highlights the experiential expectation of acquiring job security through techniques such as online reputation and ranking systems even after initial participation in online jobs
Attitudes	Rahi and Ghani (2019)	Construct represents the aspects of attitudes toward digital labour participation. Covers aspects that also resemble certain motivational factors covered in the SDT.
Perceived Employment opportunities	Mbuyisa and Leonard (2015)	This aspect that describes the attitude around the employment opportunities available as a result of increased ICT development
Perceived Financial compensation	Graham et al. (2017)	Highlights the attitude towards the payment received for digital work performed, if they would view the payment as desirable.
Perceived skill & career development	Rahi and Ghani (2019)	Emphasises about the attitude toward the opportunities for individuals to develop their career and skills on digital platforms
Perceived digital skill development	Chuene and Mtsweni (2015)	Describes the attitude of people concerning the opportunities to develop digital skills on digital platforms such as microwork platforms like Amazon Mechanical Turks and others
Perceived Job security	Graham et al. (2017), Graham et al. (2019)	Indicates to the attitude regarding job security with digital work, with users from across the globe on online platforms able to competing for digital jobs and other circumstances.

Perceived type of digital work	Graham et al. (2017)	Calls attention to the attitude around the types of digital work available from the digital jobs involving small tasks such as transcribing to those jobs requiring more expertise like web designing, programming and others.
Perceived networking	Cupido and Ophoff (2014)	Highlights the attitude concerning the opportunities to networking people on online platforms for sharing of ideas, resources, information and other purposes while participating in digital work
Perceived social fulfilment	Richardson (2017)	Emphasises the attitude towards the opportunities for social fulfilment on digital platforms such as social media sites here people, fellow digital workers could connect.
Intention to Participate in Digital Labour Table 40c Questionnaire Sources	Jaziri and Miralam (2019)	Construct describes the intention of individuals to participate in digital labour, similar to the TAM construct. However, this construct is for participating in a technology practice and not the use of a particular technology
Initial Digital Labour Participation	Rahi and Ghani (2019)	Construct highlights the initial or actual participation in digital labour, similar to the actual use of technology in TAM. However
Continued Digital Labour Participation	Khan et al. (2018), Rahi and Ghani (2019)	Construct emphasises the continued participation in digital labour practices which is similar to the construct of continuance intention present in other studies. Focus is more on the continued experience than the intention to continue in digital labour.

Question	**Source**
1. Which age group do you belong to?	Chavarika (2016).
2. Please could you select your gender.	Chavarika (2016).
3. What is your primary type of access to the internet?	Figure 1a aspect addressed- access to technology Source- Mbuyisa and Leonard (2015)
Competency	

4. What is the highest level of qualifications you have received?	Chavarika (2016).
5. Please select the electronic devices that you possess/have access to.	Chavarika (2016).
6. Please select, of the technical skills shown below, the ones which you are able to perform:	Chavarika (2016).
7. Which industries are you be involved in? (This question is to find out if type of industry affects the attitude towards digital labour participation)	Gatara (2012)
8. What kind of digital tasks would you feel most able to perform on a crowdsourcing platform?	Question Made Up Figure 1a aspect addressed- Perceived type of digital work Source - Graham et al. (2017)
9. Do you participate in any online crowdsourcing job through the internet?	Question Made up Figure 1a aspect addressed – Perceived type of digital work Source - Graham et al. (2017)
10. Do you have any intention of participating in any online crowdsourcing jobs?	Figure 1a construct addressed– Intention to Participate in Digital Labour
11. Which any online crowdsourcing platforms are you aware of if any (e.g. twitter, YouTube, freelancer, kickstarter, M4Jam)?	Question Made Up Source: Mtsweni et al. (2016)
12. What is the number of years have you been working on crowdsourcing platforms?	Question asked referring to question about the length of use of technology. Chavarika, G. V. (2016).
a. Please could you state the crowdsourcing platform you are currently on(e.g. M4Jam, Freelancer etc).	

	Question Made Up Figure 1a aspect addressed – Perceived type of digital work Source - Graham et al. (2017)
b. Do you receive any payment for work that is produced online or through the internet? If so, how?	Question Figure 1a aspect addressed– Perceived Financial Compensation Graham et al. (2019)
13. How do feel about being the monetary compensation for digital work or the lack thereof?	Gatara (2012)
14. What would be the main incentives that would motivate the participation of individuals in crowdsourcing initiatives?	Chavarika (2016)
15. Which technology devices (PC, mobile phone, tablet, laptop etc.) do you use the most for crowdsourcing initiatives, and why?	Gatara (2012)
16. Which types of online tasks have you performed or are you performing?	Question made up Figure 1a aspect addressed – Perceived type of digital work Source - Graham et al. (2017)
Expectations (Likert Scale)	
17. I could obtain further employment opportunities more easily through online platforms	Question made up Source - Graham et al. (2019)
18. I feel I could get desirable financial compensation for the amount of online work that I produce on crowdsourcing platforms	Question Tailored from source

	Source - Gatara (2012)
19. Digital skills would be sought after and useful for jobs offered online	Question Tailored from source Source - Gatara (2012)
20. I have sufficient access to the internet in order to browse through or participate in digital platforms	Question Tailored from the source in terms of ability to access online platforms Source - Gatara (2012)
21. Social connections and relationships are important for me when considering participating in online work	Question Tailored from source Source - Gatara (2012)
22. I feel a social belonging when using online platforms and networks	Gatara (2012)
23. Social media is a useful way to promote innovation and developing of new ideas	Question Tailored from source Source - Gatara (2012)
24. Crowdsourcing will help with knowledge creation and sharing for communities, workers and people	Gatara (2012)
25. Digital labour would make me more productive in my work	Question made Up Source - Cupido and Ophoff (2014)
26. The security and privacy of my personal information and sensitive information for me is critical when doing online work	Question Tailored from source Source - Gatara (2012)
27. I feel that it is vital for me to participate in online work that makes a significant real-world impact in communities	Question Tailored from source Source - Gatara (2012)
Barriers (Likert Scale)	
28. An individual's race could affect the number of employment opportunities online that one can get	Question Made Up

	access to	Source - Graham et al. (2017)
29.	An individual's citizenship or location could also affect the number of employment opportunities online that one can get access to	Question Made Up Source - Graham et al. (2017)
30.	I am able to obtain affordable and adequate internet access the internet through a mobile phone, PC, or other digital means	Question Tailored from source Source - Gatara (2012)
31.	Government policy has made the internet more costly to access and use	Question Made Up Figure 1 aspect addressed - Policy Source - Mbuyisa and Leonard (2015)
32.	Government policy has an effect on whether the internet access across various parts of South Africa	Question Made Up Figure 1a aspect addressed - Policy Source - Mbuyisa and Leonard (2015)
33.	Smartphones are widely available and affordable	Gatara (2012)
34.	I feel that the workload and the amount of hours spent doing work online would be manageable and not burdensome	Question Made Up Source - Graham et al. (2019), Fu (2019)
35.	I feel that I can obtain the right balance between my work and spare time when doing online crowdsourcing work	Question Made Up Source - Graham et al. (2017)
36.	People who possess more digital skills are more likely to get paid and benefit more from digital work than those who are less digitally literate	Question Made Up Source - Mtsweni and Burge (2014)
37.	My competencies such as professional skills and education are critical for the kinds of online crowdsourcing jobs that I can undertake	Question Made Up Source - Chuene and Mtsweni (2015)

38. Privacy and Security Concerns about my personal information cause me to be less willing to pursue digital online jobs	Question Tailored from source Source - Gatara (2012)
Attitudes (Likert Scale)	
39. Work that is performed online and through digital media can help to significantly reduce unemployment	Question Tailored from source Source - Gatara (2012)
40. The compensation for my work done online is sufficient to sustain a living	Question Tailored from source Source - Gatara (2012)
41. I could gain opportunities to build my professional skills and career through digital work	Question Tailored from source Source - Gatara (2012)
42. The more technology possessed, the more one is likely to participate in digital platforms and networks	Question Made Up Source - Mbuyisa and Leonard (2015)
43. Having the ability to work from any location for an online platform is a significant benefit	Question Made Up Source - Graham et al. (2017)
44. Crowdsourcing has helped me improve my computer literacy and digital skills	Gatara (2012)
45. I believe digital work helps me to attain my career goals	Question Tailored from source Source - Gatara (2012)
46. Helped me to work more cohesively with other crowdsourcing workers.	Question Tailored from source Source - Gatara (2012)
47. It totally transformed channels of communication	Question Tailored from source

	Source - Gatara (2012)
48. I believe that I could establish key business and social relationships and contacts through online platforms	Gatara (2012)
49. The crowdsourcing job represents the measure of my competence and skills	Question Made Up Source - Cirera, Lage and Sabetti (2016)
50. Online jobs consist of the form of work that I am most interested in and that I enjoy	Gatara (2012)
51. Crowdsourcing jobs are better than traditional manual work/employment alternatives	Gatara (2012)
52. Potential fraud on online platforms makes me feel less certain about being able to obtain employment opportunities online	Question Tailored from source on the issue of safety of personal details Source - Gatara (2012)
53. I feel that participating in online work can cause me to make a significant real-world impact in communities and change people lives	Question Tailored from source Source - Gatara (2012)
54. Concerns about the security my personal information online make me more reluctant to pursue digital online jobs	Question Tailored from source Source - Gatara (2012)
55. I feel that I could work in a crowdsourcing job long-term without significant worry about losing my job	Question Made Up Graham et al. (2017)
Overall Evaluation on Participation in Digital Labour (mostly open-ended)	
56. What is your impression of internet (mobile internet, Wi-Fi, LAN cable, dial-up etc.) costs and how they may affect participation on crowdsourcing platforms?	Question Made Up Mbuyisa and Leonard (2015
57. Has participation in crowdsourcing changed any aspect(s) of your life in any way? If so, which aspects?	Question Tailored from source Source - Gatara (2012)

58.	In what ways has your experience affected your view on working on crowdsourcing platforms from the time before you first participated in crowdsourcing?	Question Tailored from source Source - Gatara (2012)
59.	How would you describe your experience or reaction to working with digital/ online platforms?	Question Tailored from source Source - Gatara (2012)
60.	What were the causes that affected your reaction to/ experience with digital labour/online platforms?	Question Tailored from source Source - Gatara (2012)
61.	Are you eager continuing working with digital labour platforms in the future? (Likert scale)	Question Tailored from source Source - Gatara (2012)

Consent Letter

Request to conduct research and survey participation consent form

Dear Sir/Madam,

In terms of the requirements for completing a Masters Degree in Information Systems at the University of Cape Town a research study is required.

The researcher, in this case Cuthbert Chidoori, has chosen to conduct a case study entitled Attitudes Toward and Experiences of Digital Labour in South Africa. The objective of the research is to investigate the attitudes and experiences of people participating in digital labour in South Africa. The research will be aim at gathering information particularly about how people, who receive compensation for contributing online work to crowdsourcing sites in South Africa, feel about producing online work and participating in crowdsourcing sites.

Your participation in this research is voluntary. All information will be treated in a confidential manner and used exclusively for the purpose of this study. No individual names will be recorded or published. You will not be requested to supply any identifiable information for the research, ensuring anonymity of your responses. You can choose to withdraw from the research at any time for whatever reason, in accordance with ethical research requirements.

The data collection method will be a survey questionnaire which will be completed and used for research analysis. The questionnaire will be completed online and will last 30 minutes. If you are willing to participate in this study, kindly sign the attached form and return to me at your earliest convenience. If the questionnaire is fully completed, you will be notified and rewarded a R50 payment sent through electronic funds transfer to your bank account. Alternatively, if a R50 payment through is not viable, a reward of R50 mobile airtime will be sent to your mobile number.

Should you have any questions regarding this research, please feel free to contact me on my telephone at 0785805044 or email: chdcut001@myuct.ac.za

Your participation in this study would be greatly appreciated, but is entirely voluntary.

Sincerely,

Cuthbert Chidoori

Researcher \ M.Com Student, (UCT)
Department of Information Systems
University of Cape Town
Email: chdcut001@myuct.ac.za

Prof. Jean-Paul Van Belle

Research Supervisor
Department of Information Systems
University of Cape Town
Email: jean-paul.vanbelle@uct.ac.za

8.2 Appendix B: Supporting Quantitative Analysis Results

Normality Tests

Table 41 Descriptive Statistics for Proposition Dependent Variables

Descriptive Statistics (Testing Proposition Dependent Variables)										
Variable	Valid N	Mean	Median	Mode	Frequency (of Mode)	Mini-mum	Maxi-mum	Std.Dev.	Skew-ness	Kurtosis
AttitudesAvg (Prop1)	70	4.37	4.50	5	25.00	3.00	5.00	0.60	-0.52	-0.92
AttitudesAvg (Prop2)	24	3.53	3.46	3.33	4	2.83	4.92	0.43	1.29	3.50
Attitudes-Avg(Prop3)	46	3.61	3.62	Multiple	2	2.60	4.71	0.49	0.18	-0.30
Expectations-Avg(Prop6)	46	3.90	3.85	Multiple	6	2.00	5.00	0.64	-0.51	0.62

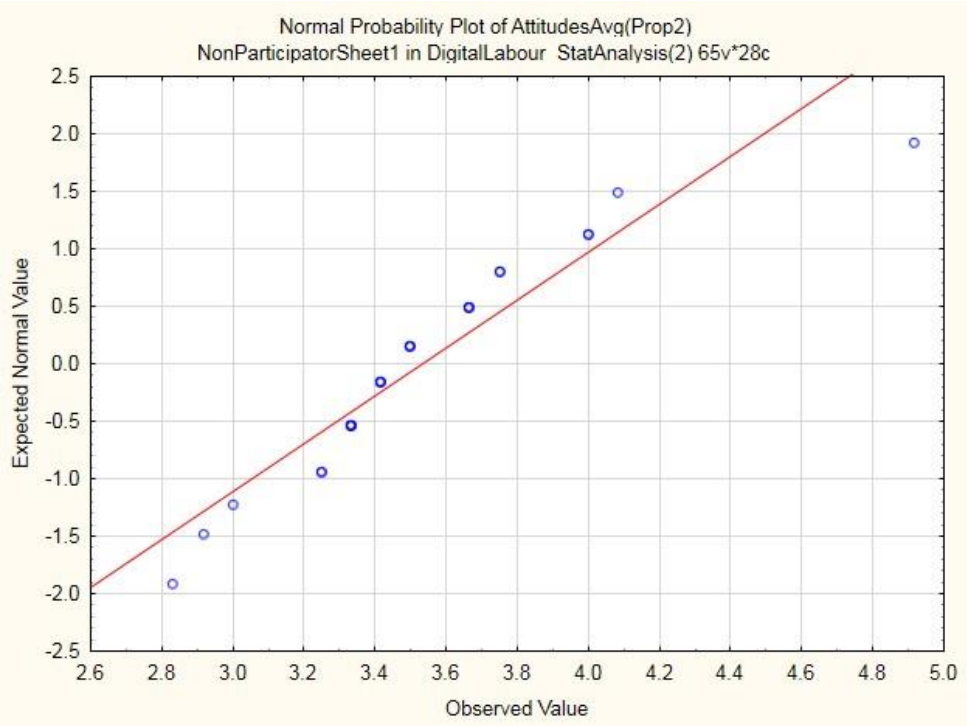

Figure 7 Normal Graph for Average Attitudes Proposition 2 Variable

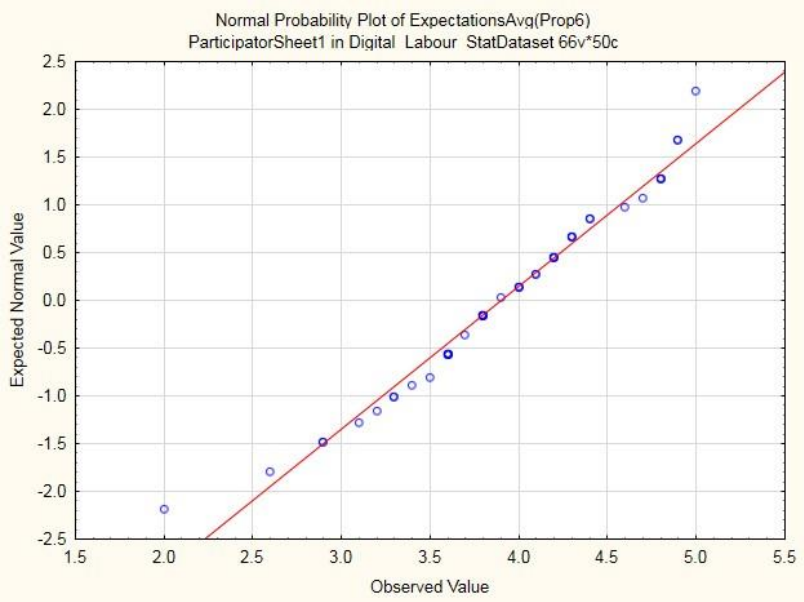

Figure 8 Normal Graph for Average Expectations Proposition 7

Correlation Analysis Tables

Table 42 Correlation Analysis Table for Initial Expectations and Attitudes

Spearman Rank Order Correlations (NonCrowdworkers Initial Expectations MD pairwise deleted Marked correlations are significant at p <.05						
Variable	**Expct-Security**	**ExpctLiving-Wage(avg)**	**ExpctSocial-Belonging(avg)**	**Expct-SocialMedia**	**Expct-LivingWage**	**ExpctSocial-Belonging**
ExpctSecurity	1.00					
ExpctLiving-Wage(avg)	0.23	1.00				
ExpctSocial-Belonging(avg)	0.29	-0.10	1.00			
Expct-SocialMedia	0.28	0.16	0.27	1.00		
Expct-LivingWage	0.18	0.90	-0.16	0.13	1.00	
ExpctSocial-Belonging	0.44	-0.10	0.87	0.14	-0.18	1.00

Table 43 Correlation Analysis for Non-Crowdworkers' Attitudes

Spearman Rank Order Correlations (NonCrowdworkers Attitudes Variables) MD pairwise deleted Marked correlations are significant at p <.05000					
Variable	**AttLiving-Pay(avg)**	**AttLiving-Pay**	**AttOnline-Fraud(avg)**	**AttOnlineFraud**	**AttWork-Alternatives(avg)**
AttLivingPay(avg)	1.00				
AttLivingPay	0.84	1.00			
AttOnlineFraud(avg)	0.11	0.06	1.00		
AttOnlineFraud	0.23	0.17	0.78	1.00	
AttWorkAlternatives(avg)	0.21	0.16	0.15	0.18	1.00
AttWorkAlternatives	0.03	-0.07	-0.03	0.08	0.86
AttRelationships	0.02	-0.14	-0.02	-0.27	0.15
AttRelationships(avg)	0.11	-0.11	0.07	-0.16	0.15
AttWorkLocation	0.06	0.04	0.17	0.16	0.39
AttRealWorldImpact	0.13	0.05	-0.27	-0.01	0.21

Variable	**AttWork-Alternatives**	**AttRelation-ships**	**AttRelation-ships(avg)**	**AttWork-Location**	**AttReal-WorldImpact**
AttLivingPay(avg)					
AttLivingPay					
AttOnlineFraud(avg)					
AttOnlineFraud					
AttWorkAlternatives(avg)					
AttWorkAlternatives	1.00				
AttRelationships	0.01	1.00			
AttRelationships(avg)	0.01	0.82	1.00		
AttWorkLocation	0.35	0.28	0.28	1.00	
AttRealWorldImpact	0.37	0.13	0.28	0.19	1.00

Table 44 Correlation Analysis Table for Attitudes and Initial Expectations

Spearman Rank Order Correlations (NonCrowdworkers Attitudes vs Initial Expectations) MD pairwise deleted Marked correlations are significant at p <0.05						
Variable	**Expct-Security**	**ExpctLiving-Wage(avg)**	**ExpctSocial-Belonging(avg)**	**Expct-SocialMedia**	**ExpctLiving-Wage**	**ExpctSocial-Belonging**
AttLivingComp(avg)	-0.28	0.38	-0.10	0.01	0.25	-0.07
AttLivingComp	-0.40	0.33	-0.17	-0.13	0.27	-0.13
AttOnlineFraud(avg)	-0.10	0.21	-0.48	-0.15	0.38	-0.45
AttOnlineFraud	-0.24	0.34	-0.71	-0.12	0.45	-0.65
AttWorkAlternatives(avg)	0.03	0.23	0.12	0.25	0.09	0.09
AttWorkAlternatives	-0.03	0.06	0.15	0.19	-0.16	0.07
AttRelationships	-0.10	0.06	0.32	0.31	0.13	0.07
AttRelationships(avg)	0.09	0.24	0.27	0.28	0.29	0.15
AttWorkLoc	-0.17	-0.01	-0.19	0.10	-0.09	-0.32
AttRealWorldImpact	0.14	0.38	0.02	0.33	0.24	-0.09

Table 45 Correlation Analysis Table for Attitudes All Respondents part 1

Spearman Rank Order Correlations (Attitudes, All Respondents) MD pairwise deleted Marked correlations are significant at p <.05000							
Variable	**AttComp-etence**	**AttInfo-Security**	**AttWork-Location**	**AttCrowdwork-JobSecurity**	**AttTech-nologyUse**	**AttReal-WorldImpact**	**AttOn-lineFraud**
AttCompetence	1.00						
AttInfoSecurity	-0.03	1.00					
AttWorkLoc	0.22	0.16	1.00				
AttCrowdwork-JobSecurity	0.24	0.12	0.13	1.00			
AttTechUse	0.24	-0.10	0.35	0.22	1.00		
AttRealWorldImpact	0.28	-0.14	0.20	0.47	0.14	1.00	
AttOnlineFraud	-0.15	0.61	0.15	0.27	-0.11	0.02	1.00
AttWorkAlternatives	0.40	0.13	0.25	0.45	0.30	0.31	0.12
AttWorkSatisfaction	0.57	0.13	0.15	0.36	0.15	0.43	0.13
AttRelationships	0.40	-0.01	0.21	0.35	0.20	0.41	-0.07
AttWorkCohesion	0.50	-0.18	0.09	0.18	-0.01	0.30	-0.02
AttCommunication	0.17	-0.09	-0.01	0.30	0.10	0.34	0.04
AttCareerGoals	0.52	0.03	0.26	0.42	0.19	0.52	0.11
AttDigitalSkills	0.47	-0.15	0.00	0.37	0.12	0.47	-0.17
AttInfo-Security(avg)	0.10	-0.90	-0.18	-0.22	0.10	0.08	-0.88
AttCrowdwork-JobSecurity(avg)	0.37	0.16	0.29	0.80	0.32	0.49	0.28
AttitudesAvg(Prop1)	0.26	0.00	0.71	0.19	0.89	0.20	0.01
Participation-Intention	0.36	0.21	0.30	0.33	0.04	0.33	0.22
Initial-Participation	0.26	0.31	0.19	0.32	0.04	0.36	0.22
AttWorkOpp	0.41	0.24	0.32	0.53	0.24	0.34	0.27
AttLivingComp	0.31	0.11	0.05	0.45	0.00	0.26	0.09
AttUnemployment	0.36	0.06	0.30	0.45	0.31	0.49	0.12

Table 46 Correlation Analysis Table for Attitudes All Respondents part 2

Spearman Rank Order Correlations (Attitudes, All Respondents) MD pairwise deleted Marked correlations are significant at p <.05000							
Variable	**AttWork-Satisfaction**	**AttRelat-ionships**	**AttWork-Cohesion**	**AttComm-unication**	**AttCareer-Goals**	**AttDigital-Skills**	**AttInfo-Security(avg)**
AttCompetence	0.57	0.40	0.50	0.17	0.52	0.47	0.10
AttInfoSecurity	0.13	-0.01	-0.18	-0.09	0.03	-0.15	-0.90
AttWorkLocation	0.15	0.21	0.09	-0.01	0.26	-0.001	-0.18
AttCrowdwork-JobSecurity	0.36	0.35	0.18	0.30	0.42	0.37	-0.22
AttTechUse	0.15	0.20	-0.01	0.10	0.19	0.12	0.10
AttRealWorldImpact	0.43	0.41	0.30	0.34	0.52	0.47	0.08
AttOnlineFraud	0.13	-0.07	-0.02	0.04	0.11	-0.17	-0.88
AttWorkAlternatives	0.53	0.25	0.15	0.04	0.41	0.36	-0.13
AttWorkSatisfaction	1.00						
AttRelationships	0.35	1.00					
AttWorkCohesion	0.31	0.28	1.00				
AttCommunication	0.12	0.25	0.51	1.00			
AttCareerGoals	0.55	0.38	0.46	0.26	1.00		
AttDigitalSkills	0.48	0.32	0.50	0.33	0.54	1.00	
AttInfoSecurity(avg)	-0.15	0.06	0.11	0.01	-0.09	0.18	1.00
AttCrowdwork-JobSecurity(avg)	0.43	0.37	0.26	0.23	0.57	0.43	-0.24
AttitudesAvg(Prop1)	0.18	0.22	0.04	0.06	0.25	0.07	-0.02
Participation-Intention	0.46	0.34	0.32	0.08	0.43	0.38	-0.23
InitialParticipation	0.42	0.34	0.27	0.22	0.46	0.43	-0.29
AttWorkOpp	0.49	0.32	0.26	0.21	0.63	0.39	-0.29
AttLivingComp	0.36	0.19	0.18	0.00	0.42	0.29	-0.09
AttUnemployment	0.27	0.29	0.30	0.07	0.42	0.37	-0.09

Table 47 Correlation Analysis Table for Attitudes All Respondents part 3

Spearman Rank Order Correlations (Attitudes, All Respondents) MD pairwise deleted Marked correlations are significant at p <.05000						
Variable	**AttCrowdworkJob-Security(avg)**	**Attitudes-Avg (Prop1)**	**AttWork-Opp**	**AttLiving-Comp**	**AttUnem-ployment**	**AttWork-Alternatives**
AttCompetence	0.37	0.26	0.41	0.31	0.36	0.40
AttInfoSecurity	0.16	0.00	0.24	0.11	0.06	0.13
AttWorkLocation	0.29	0.71	0.32	0.05	0.30	0.25
AttCrowdwork-JobSecurity	0.80	0.19	0.53	0.45	0.45	0.45
AttTechUse	0.32	0.89	0.24	0.00	0.31	0.30
AttRealWorldImpact	0.49	0.20	0.34	0.26	0.49	0.31
AttOnlineFraud	0.28	0.01	0.27	0.09	0.12	0.12
AttWorkAlternatives						1.00
AttWorkSatisfaction	0.43	0.18	0.49	0.36	0.27	0.53
AttRelationships	0.37	0.22	0.32	0.19	0.29	0.25
AttWorkCohesion	0.26	0.04	0.26	0.18	0.30	0.15
AttCommunication	0.23	0.06	0.21	0.00	0.07	0.04
AttCareerGoals	0.57	0.25	0.63	0.42	0.42	0.41
AttDigitalSkills	0.43	0.07	0.39	0.29	0.37	0.36
AttInfoSecurity(avg)	-0.24	-0.02	-0.29	-0.09	-0.09	-0.13
AttCrowdwork-JobSecurity(avg)	1.00					0.51
AttitudesAvg(Prop1)	0.35	1.00				0.31
Participation-Intention	0.44	0.12	0.51	0.28	0.29	0.59
Participation-interest	0.48	0.09	0.55	0.30	0.32	0.49
AttWorkOpp	0.86	0.32	1.00			0.48
AttLivingComp	0.47	0.01	0.40	1.00		0.35
AttUnemployment	0.80	0.35	0.61	0.33	1.00	0.34

Table 48 Correlation Analysis for Crowdworkers' Attitudes and Expectations

Spearman Rank Order Correlations (Crowdworkers Attitudes and Experiential Expectations) MD pairwise deleted Marked correlations are significant at p <.05000							
Variables	AttCrowdwork-JobSecurity(avg)	AttRealWorld-Impact(avg)	AttOnline-Fraud(avg)	AttComp-etence(avg)	AttComm-unication(avg)	AttTech-nologyUse	AttWork-Location
AttCrowdwork-JobSecurity(avg)	1.00						
AttRealWorld-Impact(avg)	0.52	1.00					
AttOnline-Fraud(avg)	0.24	-0.02	1.00				
AttCompetence-(avg)	0.49	0.58	-0.01	1.00			
AttComm-unication(avg)	0.17	0.30	-0.09	0.27	1.00		
AttTechnology-Use	0.34	0.31	-0.04	0.25	0.01	1.00	
AttWorkLocation	0.24	0.26	0.13	0.17	-0.04	0.36	1.00
AttitudesAvg-(Prop3)	0.70	0.73	0.34	0.67	0.43	0.52	0.46
ExpctLiving-Wage(avg)	0.57	0.43	0.08	0.53	0.13	0.10	0.30
ExpctLivingWage	0.66	0.43	0.21	0.46	0.09	0.05	0.33
ExpctInternet-Access	0.46	0.41	0.14	0.30	0.21	0.05	0.24
ExpctSocial-Belonging	0.13	0.24	-0.27	0.22	0.31	0.08	0.11
ExpctSocial-Belonging(avg)	0.25	0.37	-0.17	0.23	0.45	0.15	0.21
ExpctSecurity	0.02	-0.06	-0.23	-0.03	0.19	0.17	0.11
ExpctReal-WorldImpact	0.38	0.30	-0.16	0.02	-0.09	0.30	0.21

Stepwise Regression Tables

Table 49 Stepwise Regression Table Participationintention and Attitudes

Summary of stepwise regression; variable: ParticipationIntention (Independent Variables: Attitudes) Backward stepwise P to enter: .05, P to remove: .05							
Effect	Steps	Degr. of (Freedom)	F to (remove)	P to (remove)	F to (enter)	P to (enter)	Effect (status)
AttCompetence	Step Number 1	1	2.39	0.13			In
AttCommunication		1	0.08	0.78			Removed
AttWorkLocation		1	1.38	0.24			In
AttTechnologyUse		1	5.91	0.02			In
AttInfoSecurity(avg)		1	0.74	0.39			In
AttCrowdworkJobSecurity(avg)		1	3.002	0.09			In
AttWorkAlternatives		1	15.4906	0.0002			In
AttCrowdworkJobSecurity(avg)	Step Number 5	1	6.36	0.01			In
AttWorkAlternatives		1	21.83	0.00002			In
AttTechnologyUse		1	5.46	0.02			In
AttWorkLocation		1			2.006	0.16	Out
AttCompetence		1			1.96	0.17	Out
AttInfoSecurity(avg)		1			0.42	0.52	Out
AttCommunication		1			0.01	0.91	Out

Table 50 Stepwise Regression Table for InitialParticipation and Attitudes

Summary of stepwise regression; variable: InitialParticipation (Independent Variables: Attitudes) Backward stepwise P to enter: .05, P to remove: .05							
Effect	Steps	Degr. of (Freedom)	F to (remove)	P to (remove)	F to (enter)	P to (enter)	Effect (status)
AttCompetence	Step Number 1	1	0.20	0.66			In
AttCommunication		1	1.53	0.22			In
AttWorkLocation		1	0.08	0.78			Removed
AttTechnologyUse		1	3.33	0.07			In
AttInfoSecurity(avg)		1	0.88	0.35			In
AttCrowdworkJobSecurity(avg)		1	5.50	0.02			In
AttWorkAlternatives		1	8.16	0.006			In
AttCrowdworkJobSecurity(avg)	Step Number 5	1	10.90	0.002			In
AttTechnologyUse		1	4.32	0.04			In
AttWorkAlternatives		1	9.69	0.003			In
AttCommunication		1			1.59	0.21	Out
AttInfoSecurity(avg)		1			0.62	0.43	Out
AttCompetence		1			0.20	0.65	Out
AttWorkLocation		1			0.16	0.69	Out

Table 51 Stepwise Regression Table for InitialParticipation, ParticipationIntention and Attitudes

Summary of stepwise regression; variable: InitialParticipation (Independent Variables: ParticipationIntention, Attitudes) Backward stepwise P to enter: .05, P to remove: .05							
Effect	**Steps**	**Degr. of (Freedom)**	**F to (remove)**	**P to (remove)**	**F to (enter)**	**P to (enter)**	**Effect (status)**
AttCompetence	Step Number 1	1	1.54	0.22			In
AttCommunication		1	3.83	0.05			In
AttWorkLocation		1	0.81	0.37			In
AttTechnologyUse		1	0.00	0.99			Removed
AttCrowdwork-JobSecurity(avg)		1	1.03	0.32			In
AttInfoSecurity(avg)		1	0.22	0.64			In
AttWorkAlternatives		1	0.0008	0.98			In
AttCareerGoals		1	0.84	0.36			In
ParticipationIntention		1	67.08	0.00			In
ParticipationIntention	Step Number 8	1	152.9	0.00			In
AttCommunication		1	5.97	0.02			In
AttCrwdsrcJobSecurity(avg)		1			1.99	0.16	Out
AttCompetence		1			1.00	0.32	Out
AttCareerGoals		1			0.94	0.33	Out
AttWorkLocation		1			0.45	0.51	Out
AttInfoSecurity(avg)		1			0.89	0.35	Out
AttWorkAlternatives		1			0.05	0.83	Out
AttTechnologyUse		1			0.03	0.87	Out

Table 52 Stepwise Regression Table for ContinuedParticipation and Experiential Expectations

Summary of stepwise regression; variable: ContinuedParticipation (Independent Variables: Experiential Expectations) Backward stepwise P to enter: .05, P to remove: .05							
Effect	**Steps**	**Degr. of (Freedom)**	**F to (remove)**	**P to (remove)**	**F to (enter)**	**P to (enter)**	**Effect (status)**
ExpctLivingWage(avg)	Step Number 1	1	3.94	0.05			In
ExpctSocialBelonging(avg)		1	1.18	0.29			In
ExpctInternetAccess		1	0.00	1.00			Removed
ExpctSecurity		1	0.60	0.44			In
ExpctRealWorldImpact		1	2.10	0.16			In
ExpctKnowledge		1	2.09	0.16			In
ExpctSocialMedia		1	0.14	0.71			In
ExpctProductivity		1	5.07	0.03			In
ExpctDigitalSkill		1	0.82	0.37			In
ExpctOpportunity		1	0.16	0.69			In
ExpctLivingWage(avg)	Step Number 9	1	9.14	0.004			In
ExpctKnowledge		1	6.79	0.01			In
ExpctProductivity		1			1.87	0.18	Out
ExpctRealWorldImpact		1			0.96	0.33	Out
ExpctSocialBelonging(avg)		1			0.57	0.46	Out
ExpctDigitalSkill		1			0.17	0.68	Out
ExpctSecurity		1			0.62	0.43	Out
ExpctOpportunity		1			0.16	0.69	Out
ExpctSocialMedia		1			0.003	0.96	Out
ExpctInternetAccess		1			0.02	0.88	Out

Table 53 Stepwise Regression Table for ContinuedParticipation, InitialParticipation and Experiential Expectations

Summary of stepwise regression; variable: ContinuedParticipation (Independent Variables: InitialParticipation, Experiential Expectations) Backward stepwise P to enter: .05, P to remove: .05							
Effect	**Steps**	**Degr. of (Freedom)**	**F to (remove)**	**P to (remove)**	**F to (enter)**	**P to (enter)**	**Effect (status)**
ExpctLivingWage(avg)	Step Number 1	1	2.44	0.13			In
ExpctLivingWage		1	0.83	0.37			In
ExpctSocialBelonging(avg)		1	0.41	0.52			In
ExpctSocialBelonging		1	0.16	0.69			In
ExpctInternetAccess		1	0.31	0.58			In
ExpctSecurity		1	2.64	0.11			In
ExpctRealWorldImpact		1	0.001	0.97			Removed
ExpctKnowledge		1	0.83	0.37			In
InitialParticipation		1	26.1	0.00001			In
ExpctLivingWage(avg)	Step Number 8	1	7.67	0.008			In
InitialParticipation		1	37.4	0.000			In
ExpctSecurity		1			1.90	0.18	Out
ExpctLivingWage		1			0.34	0.56	Out
ExpctKnowledge		1			0.40	0.53	Out
ExpctSocialBelonging(avg)		1			0.03	0.86	Out
ExpctInternetAccess		1			0.08	0.78	Out
ExpctSocialBelonging		1			0.003	0.95	Out
ExpctRealWorldImpact		1			0.40	0.53	Out

Variables' Defintions and Descriptions

Table 54 Quantitative Data Variables Table for Names and Meanings

Variable	Likert Scale Question
1. ExpctOpportunity (ExpectationOpportunities)	I could obtain further employment opportunities more easily through online platforms
2. ExpctCompensation (ExpectationCompensation)	I feel I could get desirable and fair financial compensation for the amount of online work that I produce on crowdsourcing platforms
3. ExpctLivingWge (ExpectationLivingWage)	I feel that I could receive payment for my online digital work which would be able to keep up my standard of living
4. ExpctDigitalSkill (ExpectationDigitalSkill)	Digital skills would be sought after and useful for jobs offered online
5. ExpctInternetAccess (ExpectationNetworkAccess)	I have sufficient access to the internet in order to browse through or participate in digital platforms
6. ExpctRelationships (ExpectationRelationships)	Social connections and relationships are important for me when considering participating in online work
7. ExpctSocialBelonging(ExpectationSocialBelonging)	I feel a social belonging when using online platforms and networks which is important for me
8. ExpctSocialMedia (ExpectationSocialMediaInnovation)	Social media is a useful way to promote innovation and developing of new ideas
9. ExpctKnowledge (ExpectationKnowledge)	Crowdsourcing will help with knowledge creation and sharing for communities, workers and people
10. ExpctProductivity (ExpectationProductivity)	Digital labour would make me more productive in my work
11. ExpctSecurity (Expectation)	The security and privacy of my personal information and sensitive information for me is critical when doing online work
12. ExpctRealWorldImpact (ExpectationRealWorldImpact)	I feel that it is vital for me to participate in online work that makes a significant real-world impact in communities
13. BarRace (BarriersRace)	An individual's race could affect the number of employment opportunities online that one can get access to

14. BarCitizenship	An individual's citizenship or location could also affect the number of employment opportunities online that one can get access to
15. BarTechnologyAccess (BarriersTechnologyAccess)	I am able to obtain affordable and adequate internet access the internet through a mobile phone, PC, or other digital means
16. BarInternetCost (BarriersInternetCost)	Government policy has made the internet more costly to access and use
17. BarInternetPolicy (BarriersInternetPolicy)	Government policy has an effect on whether the internet access across various parts of South Africa
18. BarPhoneAccess (BarriersPhoneAccess)	Smartphones are widely available and affordable
19. BarWorkBurden	I feel that the workload and the amount of hours spent doing work online would be manageable and not burdensome
20. BarWorkBalance	I feel that I can obtain the right balance between my work and spare time when doing online crowdsourcing work
21. BarDigitalSkills (BarriersDigitalSkills)	People who possess more digital skills are more likely to get paid and benefit more from digital work than those who are less digitally literate
22. BarCompetency(BarriersProfesionalCompetency)	My competencies such as professional skills and education are critical for the kinds of online crowdsourcing jobs that I can undertake
23. BarInfoSecurity (BarriersInformationSecurity)	Privacy and Security Concerns about my personal information cause me to be less willing to pursue digital online jobs
24. AttUnemployment (AttitudeUnEmploymentReduction)	Work that is performed online and through digital media can help to significantly reduce unemployment
25. AttLivingPay (AttitudeLivingCompensation)	The compensation for my work done online is sufficient to sustain a living
26. AttWorkOpportunity - (AttitudeWorkOpportunities)	I could gain opportunities to build my professional skills and career through digital work
27. AttTechnologyUse	The more technology possessed, the more one is likely to participate in digital platforms and networks
28.	Having the ability to work from any location for an online platform is

AttWorkLocation(AttitudeWorkLocation)	a significant benefit
29. AttDigitalSkills	Crowdsourcing has helped me improve my computer literacy and digital skills
30. AttCareerGoals	I believe digital work helps me to reach my career goals
31. AttWorkCohesion	Helped me to work more better together with other crowdsourcing workers and work colleagues.
32. AttCommunication	It totally changed the way(s) in which I communicate with others
33. AttRelationships	- I believe that I could establish key business and social relationships and contacts through online platforms
34. AttCompetence	The crowdsourcing job represents the measure of my competence and skills
35. AttWorkSatisfaction	Online jobs consist of the form of work that I am most interested in and that I enjoy
36. AttWorkAlternatives (Attitudes)	Crowdsourcing jobs are better than traditional manual work/employment alternatives
37. AttOnlineFraud (Attitudes)	- Potential fraud on online platforms makes me feel less certain about being able to obtain employment opportunities online
38. AttRealWorldImpact (Attitudes)	I feel that participating in online work can cause me to make a significant real-world impact in communities and change people lives
39. AttInfoSecurity (Attitudes)	Concerns about the security my personal information online make me more reluctant to pursue digital online jobs
40. AttCrowdworkJobSecurity (AttitudeInformationSecurity)	- I feel that I could work in a crowdsourcing job long-term without significant worry about losing my job
41. ParticipationIntention	Do you have any intention or interest in participating in any online crowdsourcing jobs?
42. InitialParticipation	- How would you describe your experience or reaction to working with digital/ online
43. ContinuedParticipation (ContinuedParticipation)	Are you eager continuing working with digital labour platforms in the future?

Table 54b Regression and Correlation Factor Analysis Average Variables

Variable Names	Construct Represented	Description
ExpctLivingWage(avg)	Initial Expectations	Formed by averaging data from variables "ExpctLivingWage" and "ExpctCompensation" that loaded onto the same factor in the factor analysis
ExpctSocialBelonging(avg)	Initial Expectations	Formed by averaging data from variables "ExpctSocialBelonging" and "ExpctRelationships" that loaded onto the same factor in the factor analysis
ExpctSocialBelonging(avg)	Experiential Expectations	Formed by averaging data from variables "ExpctSocialBelonging" and "ExpctRelationships" that loaded onto the same factor in the factor analysis
ExpctLivingWage(avg)	Experiential Expectations	Formed by averaging data from variables "ExpctLivingWage" and "ExpctCompensation" that loaded onto the same factor in the factor analysis
AttCrowdworkJobSecurity(avg)	Attitudes	Formed by averaging data from variables "AttCrowdworkJobSecurity" and "AttWorkOpportunities" that loaded onto the same factor in factor analysis
AttInfoSecurity(avg)	Attitudes	Formed by averaging data from variables "AttOnlineFraud" and "AttInfoSecurity" that loaded onto the same factor in factor analysis
AttitudesAvg(Prop1)	Attitudes	Average attitudes of all respondents formed by averaging data from the variables formed for the attitudes construct.
AttitudesAvg(Prop2)	Attitudes	Average digital labour attitude of respondents with no crowdsourcing experience
AttitudesAvg(Prop3)	Attitudes	Average digital labour attitude of respondents with crowdsourcing experience
ExpectationsAvg(Prop7)	Experiential Expectations	Average experiential expectations of respondents with crowdsourcing experience concerning digital

		labour

8.3 Appendix C: Supporting Qualitative Analysis Snapshots and Results

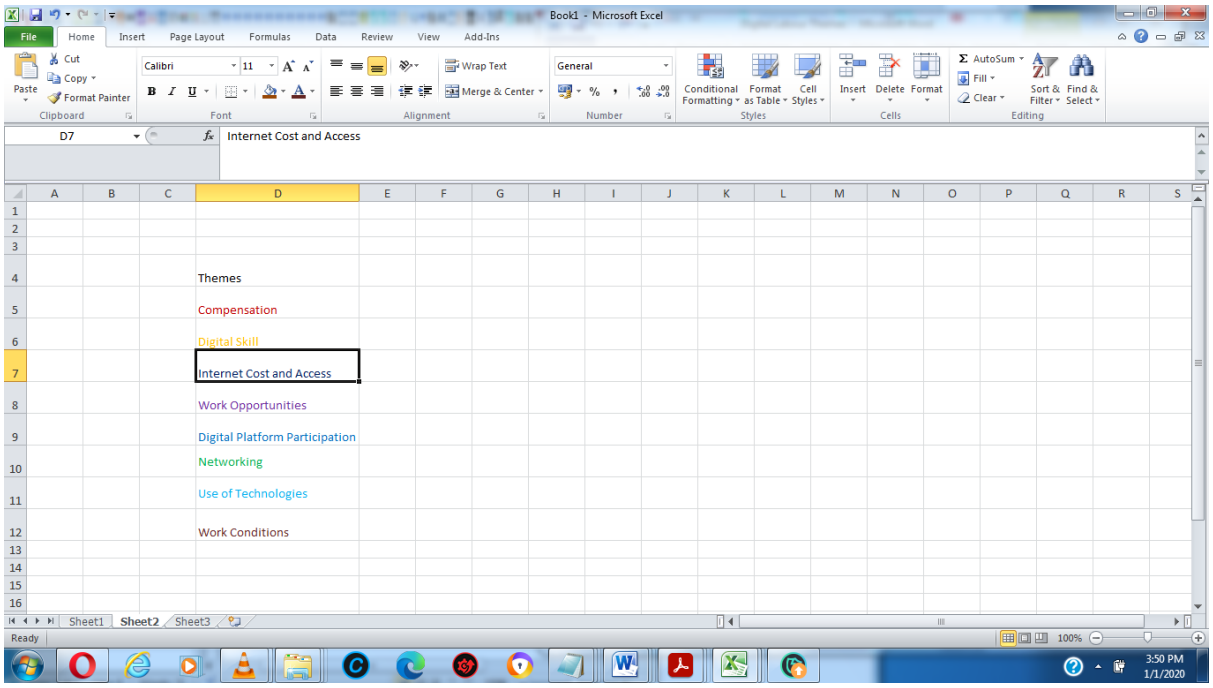

Figure 9 Emergent Themes Snapshot

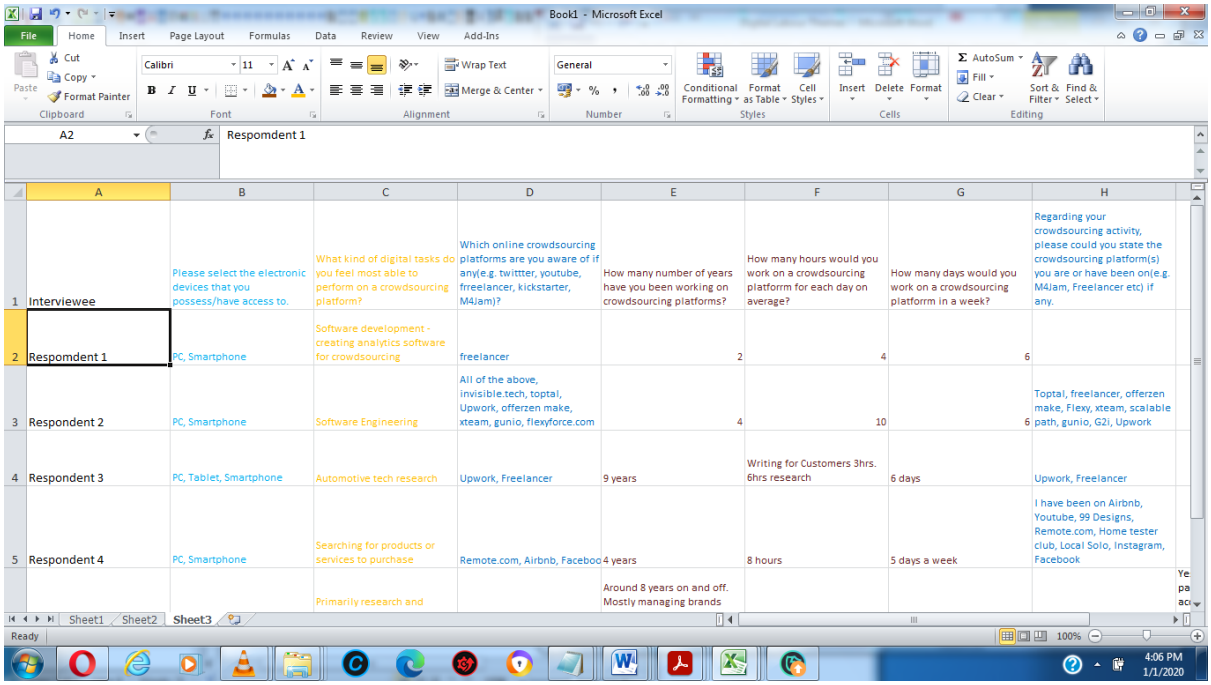

Figure 10 Coding Process Snapshot

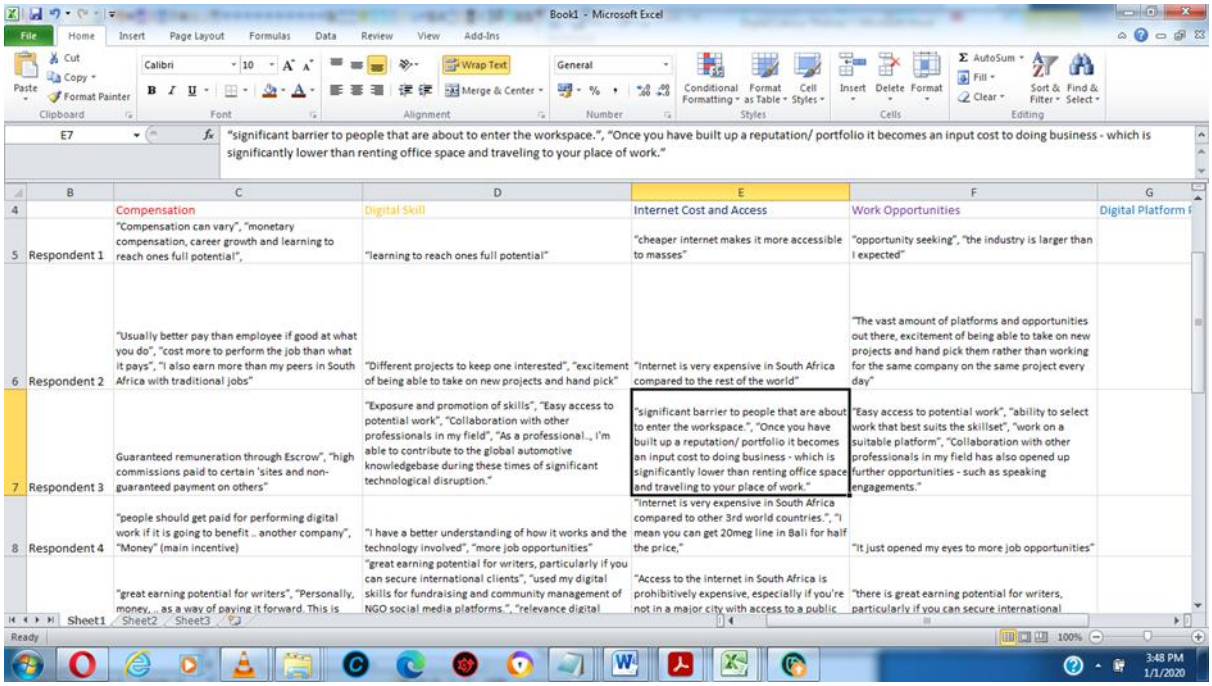

Figure 11 Snapshot of Codes with Themes

Thematic Analysis Tables

Fair Compensation

Table 55 Fair Compensation All Responses

Interviewee	How Payment is	Views on Crowdsourcing payment

	Received	
Respondent 1	paid according to the complexity of the task(s	“Compensation can vary”, “persons experience, industry,”, “how much compensation they receive”
Respondent 2	How well task meets client requirements	“Usually better pay than employee if good at what you do”, “cost more to perform the job than what it pays”, “I also earn more than my peers in South Africa with traditional jobs”
Respondent 3	paid for commentary word and producing reports	“Guaranteed remuneration through Escrow”, “high commissions paid to certain 'sites and non-guaranteed payment on others”
Respondent 4	Number of complete tasks	“people should get paid for performing digital work if it is going to benefit .. another company”, “Money” (main incentive)
Respondent 5	paid according to the complexity of the task(s	“great earning potential for writers”, “Personally, money, .. as a way of paying it forward. This is why I contribute to Wikipedia…other info. portals”
Respondent 6	paid according to the complexity of the task(s	“You should always receive money for the work you do.”
Respondent 7	paid according to the complexity of the task(s	“Freelancers are not paid well enough especially newbies in the game.”, “ Good payment rate” (main incentive), “Still have not made real money from them so it's not easy being motivated”
Respondent 8	Number of complete tasks	“it is necessary”, “these services.. performed digitally.. like any other should be compensated for like any other non-digital performed task”
Respondent 9	Number of complete tasks	“Globally, sites like UpWork exploits freelancers. You can get paid as little as $30 for an article that takes 5 - 6 hours of research, writing, and editing.”, “Fortunately, I find that South African platforms like NoSweat Work pay much more fairly.”, “additional income”, “being paid in a stronger currency”, “Global - not a good experience. Local - good experience”
Respondent 10	How well task meets client requirements	“Was about R400”, “Money” (main incentive)
Respondent 11	Number of complete tasks	“think it's often undervalued and underpaid. That said, it is possible to find clients and platforms that value your work and pay you well.”, “definitely possible to make a living through digital work.”, “Generating an income, finding clients, ensuring that the clients will actually pay”(main incentive), “Payment comes through fast”
Respondent 12	paid according to the complexity of the task(s	“it's low”, “earning international currency”(main incentive), “payment was received although not very promptly.”
Respondent 13	“Bechance and Linked in create traffic on my website. I sell images from the site.”	“Why not?”, “Monetary rewards”(main incentive), “And has become a source of passive income.”
Respondent 14	number of tasks complete, How well task meets client requirements, task complexity	“access to world FIAT currency like dollar and pounds which is great because the rand is extremely weak”, “I'd rather freelance..overseas than work locally and get paid badly”, “Money..main incentive”
Respondent 15	As a retoucher I got paid once	“a great way for freelancers and even full time employees to make extra

	the job was completed to the client's specifications.	cash… never been able to live off the money I made from these websites." "competition with these websites are quite high.. clients usually end up going for the lowest rates.", "you work much longer for much less on crowdsourcing platform", "Upwork has a nice solution..offers mediation alternatives for creatives and clients"
Respondent 16	Number of complete tasks	"I am a writer we are often underpaid and overworked", "the payment"(main incentive), "I used to think I would. make a living but I have to put in way too much work", "competing with international people who are willing to get paid way less", "It's not regulated"
Respondent 17	Number of complete tasks	"good monetary reward"(main incentive), "the exchange rate when doing work overseas can make things complicated/confusing."
Respondent 18	Depends on service, either payment on delivery of service, or an hourly/daily rate, irrespective of task.	"Clients.. expect too much for too little", "crowd sharing service providers can.. protect service providers by enforcing standard market rates", "enforcing fair rates"(main incentive),
Respondent 19	"Payment for creating products"	"Any work produced, that benefits someone should be compensated appropriately", "Financial gain", "I have made money", "not guaranteed output", "the project I worked on..was successful"
Respondent 20	No I do not get paid for the work I produce("terrible payment")	"Clients always look for a bargain and ..find one as designers will undercut each other to get the work. There is no standard fee", "It kills the industry... the livelihood of designers",, "I will not try it again unless I know that the work gets valued for what it is"
Respondent 21	paid according to the complexity of the task(s	"payment is mandatory. For instance, I do not expect to go to a Doctor or Hospital to receive free medical advice",

Digital Skills Theme Table

Table 56 Digital Skills All Responses

Interviewee	Type of digital skill	Views around digital skill
Respondent 1	Software development - creating analytics software for crowdsourcing Transcribing documents, Algorithm writing	"learning to reach ones full potential"
Respondent 2	Software Engineering, Coding	"Different projects to keep one interested", "excitement of being able to take on new projects and hand pick"
Respondent 3	Automotive tech research, commentary word and producing reports	"Exposure and promotion of skills", "Easy access to potential work", "Collaboration with other professionals in my field", "As a professional.., I'm able to contribute to the global automotive knowledgebase during these times of significant technological disruption."
Respondent 4	Translation, Transcribing documents,	"I have a better understanding of how it works and the technology

	Graphics design	involved", "more job opportunities"
Respondent 5	"Primarily research and copyediting, mainly through .. platforms like Wikipedia, ..Google Maps", online marketing management and strategies	"great earning potential for writers, particularly if you can secure international clients", "used my digital skills for fundraising and community management of NGO social media platforms.", "relevance digital labour. I grew up online"
Respondent 6	"Analysis Testing Design Mapping strategies Create timelines", "Graphics design", social media manager and digital copywriter	"Able to do freelance work..communicate with other designers to discuss relevant subjects. Inspiration", "It has just added to more skill building"
Respondent 7	"Content development Editing, Article writing, Social media management"	"Before I was very skeptical due to not enough information being available", "I'm more open to freelancing platforms", "in SA freelancing isn't as big"
Respondent 8	Transcribing documents, Graphics design, 3d design and modelling	"A broader spectrum of knowledge to gain and the ability to connect with a variety of clients quickly and effeciently", "more skill development and job opportunities", "connected with clients I would not have otherwise met"
Respondent 9	"Copywriting, Editing, proofreading"	"networking", "global crowdsourcing sites are extremely competitive", "I did, however, get two fairly significant jobs by belonging to SAFREA"
Respondent 10	"Blog writing, Articles", Translation	"Not so much work today as when it started", "I learned that the more informations there is, the better"
Respondent 11	"Research, writing, SEO, editing, proofreading"	"Digital work is an excellent way for creative people to use their skills while making money.", "Interesting ..fulfilling work", "Working on Fiverr .. better than I expected."
Respondent 12	"Editing, writing, translation", Translation, "proofreading, assessing search efficiency"	"Lack of other work", "Yes, it has made me realise that my skills are of value internationally."
Respondent 13	"Marketing, Blogging", Sentiment analysis of social media posts, photo-flagging	"Has created opportunities to work in Europe and the UK", "I got high profile work from exposure on these platforms"
Respondent 14	"Digital art/ video editing/ draftsmanship"	"growth and recognition artist. Met a lot of people around the world."
Respondent 15	"Advanced beauty retouching and editing using photoshop"	"The competition with these websites are quite high", "My retouching portfolio was excellent but I lost a lot of jobs to guys charging very low rates.", "I enjoy being a photographer more than a retoucher using crowdsourcing sites. As a photographer I interact with people a lot more."
Respondent 16	Writing for blogs, social media and content creation, Sentiment analysis of social media posts, Transcribing documents	"competing with international people", "I am a writer we are often underpaid and overworked"
Respondent 17	Graphics design, Design tasks	"Spec work would be design/creative work briefed openly on the internet and then only the winning work is paid for.", "This .. is exploitation of creative workers, it floods the market with bad design"
Respondent 18	video content creation, brand/portfolio	"Clients are generally uneducated on the time consumption and expertise required to complete digital-related tasks and expect too much for too

	management, web design	little", "Expanded work opportunities, particularly sourcing work from outside of South Africa,", "expanded my potential client market", "also realising that nothing can replace excellence in work"
Respondent 19	Graphics design, Design and Marketing related Tasks	"it requires significant input and not guaranteed output", "the project I worked on, .. it was successful"
Respondent 20	Graphics Design, "layout and image correction"	"designers will undercut each other to get the work.", "it undermines my ability to be an excellent designer and getting paid properly for my efforts."
Respondent 21	"Creating and sharing content", "community management"	"people come to me to complete tasks they do not have the capacity or skills to do", "I deliver a service in a free market is an economic based on my specific skill set and the supply and demand of it."

Internet Cost and Access

Table 57 Internet Costs and Access All Responses

Interviewee	Type of Internet Access	View about Internet Cost and Access
Respondent 1	Mobile Router	"cheaper internet makes it more accessible to masses"
Respondent 2	Home Fibre	"Internet is very expensive in South Africa compared to the rest of the world"
Respondent 3	Work/Home ADSL	"significant barrier to people that are about to enter the workspace.", "Once you have built up a reputation/ portfolio it becomes an input cost to doing business - which is significantly lower than renting office space and traveling to your place of work."
Respondent 4	Work/Home ADSL	"Internet is very expensive in South Africa compared to other 3rd world countries.", "I mean you can get 20meg line in Bali for half the price,"
Respondent 5	Home Fibre	"Access to the internet in South Africa is prohibitively expensive, especially if you're not in a major city with access to a public library."
Respondent 6	Home Fibre	"I think the cost of internet in South Africa is very unreasonable costly."
Respondent 7	Home Fibre	"Data is very expensive and public WiFi cannot be trusted"
Respondent 8	Work/Home ADSL	"data and wifi charges in South africa are very high and therefore this can limit a person in their amount of participation across these platforms"
Respondent 9	Work/Home ADSL	"It is expensive compared to other countries. Issues like load-shedding is a big problem when working from home."
Respondent 10	Work/Home ADSL	"Mobile Data is very expensive. ADSL is just for home and not all public places have internet access"
Respondent 11	Work/Home ADSL	'' It's quite expensive - not to mention that setting up ADSL through Telkom is a headache and a half. I believe that more people would be able to find employment and/or supplement their income through digital work if internet access were

		cheaper."
Respondent 12	Home Fibre	"It is high but doesn't limit my willingness to do online work."
Respondent 13	Work/Home ADSL	"I believe access to reliable fast data could improve significantly in SA."
Respondent 14	Work/Home ADSL	"I am fortunate to be able to afford it. But in a sense the ideal would be for internet to be mostly free"
Respondent 15	Home Fibre	"Cape Town has fast fibre internet available almost anywhere", "Accomodation outside of Cape Town is more affordable but quality internet connection is not as available and reliable as fibre options in Cape Town."
Respondent 16	Mobile Router	"I pay R200 for 20gb its not enough it runs out before the end of the month"
Respondent 17	Work/Home ADSL	"Data costs in SA are exorbitant, ..a big deterrent for those who can't afford it."
Respondent 18	Home Fibre	"I think South Africa has some of the highest access-to-internat barriers in the world, driven by a lack of competition between data service providers, monopolies in telecommunications industry and a lack of pricing regulation from government. It is holding back the ability to interact with crowdsourcing platforms, particularly from disadvantaged/previously disadvantaged segments of South African society."
Respondent 19	Home Fibre	"The cost of Mobile data is far too high to engage the majority or lower income people from accessing and profiting from crowd sourcing platforms."
Respondent 20	Home Fibre	"For a good connection (international standard) you have to pay a lot of money which most people simply cannot afford.. if you want to work with groups of people overseas.. especially if the work entails big files"
Respondent 21	Wifi Work/Home	"The internet, and even the cost of data (mobile airtime and contracts included) are way more expensive than in other parts of the world.", "It is not that we are lacking infrastructure, there are a lot of private sector companies that make sure there is access to the internet in most places"

Work Opportunities

Table 58 Work Opportunities All Responses

Interviewee	Industry	Views around Work Opportunities
Respondent 1	Software Development,	"opportunity seeking", "the industry is larger than I expected"
Respondent 2	Digital assembly line	"The vast amount of platforms and opportunities out there, excitement of being able to take on new projects and hand pick them rather than working for the same company on the same project every day"
Respondent 3	Automotive and transportation	"Easy access to potential work", "ability to select work that best suits the skillset", "work on a suitable platform", "Collaboration with other professionals in my field has also opened up further opportunities - such as speaking engagements."
Respondent 4	At the moment online	"It just opened my eyes to more job opportunities"

	food delivery	
Respondent 5	Marketing and advertising	“there is great earning potential for writers, particularly if you can secure international clients”
Respondent 6	User experience and User interface Design	“At the present I have built connections with people in the design industry that is able to help me in building more skills and also look at design problems in different perspectives.”, “The opportunity to be able to work in different countries if needed”
Respondent 7	Pharmaceutical, ICT, Healthcare	“not enough information being available and in SA freelancing isn't as big but now I'm more open to freelancing platforms”
Respondent 8	Design industry including interior design and architecture and graphic design	“I didn't think would have to wait this long to receive work from clients and that has demotivated me a little, however I do think that the opportunities are somewhat endless with these platforms”
Respondent 9	Public relations, Copywriting, Social media, publications (magazines)	“As mentioned, global crowdsourcing sites are extremely competitive and usually the 'cheapest' rates get the jobs.”, “Global - not a good experience. Local - good experience”
Respondent 10	Branding	“Not so much work today as when it started”
Respondent 11	Media	“Interesting and fulfilling work”, “think it's often undervalued and underpaid. That said, it is possible to find clients and platforms that value your work”
Respondent 12	publishing, media, education	“it has made me realise that my skills are of value internationally.”, “It's easier than I thought at the beginning.” “Lack of other work”
Respondent 13	Creative, Digital marketing, Marketing, Agencies, Photography	“I believe in it now. I was and still is to a lesser extent fiery of non- organic followings on these platforms”, “Has created opportunities to work in Europe and the UK.”
Respondent 14	Film Visual effects industry	“I'd rather freelance for an employer overseas than work locally”, “to stay connected to groups and connections. can't really say that I have negative views about it.”
Respondent 15	Photography	“There are so many small job opportunities but to apply for each one takes tremendous time and effort. - I was competing in rate and not merit.”, “Some platforms offer paid memberships that allow you to be pushed to the top of the submission que. I don't think this is fair.”, “Payments was always stressful and a big anxiety.”, “you work much longer for much less on crowdsourcing platforms. Especially when you start out.”, “I enjoy being a photographer more than a retoucher using crowdsourcing sites. As a photographer I interact with people a lot more.”
Respondent 16	Communications	“competing with international people who are willing to get paid way less”, “now I know I have to put in way too much work”, “I am a writer we are often underpaid and overworked”
Respondent 17	Advertising/Design	“Spec work would be design/creative work briefed openly on the internet and then only the winning work is paid for. This kind of work is exploitation of creative workers, it floods the market with bad design”, “Quality interactions”, “I should mention I take on these jobs in addition to other freelance jobs that I've secured offline. so it's a similar process for me.”
Respondent 18	Commercial filmmaking (ads and content creation)	“Often crowd sharing service providers can act as a good 'agent' and protect service providers by enforcing standard market rates.”, “providing opportunities for employment or hire”, “Expanded work opportunities, particularly sourcing work from outside of South Africa, thus making me less dependent on how well the local market is doing.”, “an appreciation for what good marketing can

		do for my career, however, also realising that nothing can replace excellence in work"
Respondent 19	Industrial Design	"I got lucky with the project I worked on, and it was successful.", "it requires significant input and not guaranteed output.", "Financial gain, or exposure opportunity"
Respondent 20	Any industry that requires Graphic design. From Corporate to NGOs	"I've worked remotely with other designers, writers, illustrators and photographers to do many magazines and coffee table books, without having to be in the same physical space.", "For a good connection (international standard) you have to pay a lot of money which most people simply cannot afford. And you have to make that expense if you want to work with groups of people overseas.", "Clients always look for a bargain and they will find one as designers will undercut each other to get the work."
Respondent 21	EdTech, advertising and marketing	"I deliver a service in a free market is an economic based on my specific skill set and the supply and demand of it.", "The range and scope of projects are larger when something is crowdsourced, so the pool to choose from is larger, but you have the ability to pick the best option for what you need based on the skills offered."

Digital Platform Type

Table 59 Digital Platform Type All Responses

Participant	Platforms of participation	Views around digital platform(s)
Respondent 1	freelancer	"the industry is larger than I expected", "opportunity seeking"
Respondent 2	Toptal, freelancer, offerzen make, Flexy, xteam, scalable path, gunio, G2i, Upwork	"The vast amount of platforms and opportunities out there. The freedom they give and the excitement of being able to take on new projects and hand pick them"
Respondent 3	Upwork, Freelancer	"Effective and safe on Upwork", "Exposure and promotion of skills and work on a suitable platform, Guaranteed remuneration through Escrow", "Yes, it has widened my horizons with regard to understanding technology in my field."
Respondent 4	Airbnb, Youtube, 99 Designs, Remote.com, Home tester club, Local Solo, Instagram, Facebook	"I have a better understanding of how it works and the technology involved, how advanced it can go.", "It just opened my eyes to more job opportunities and ways to make an income"
Respondent 5	Upwork, fiverr, Kickstarter, Twitter, Instagram, Facebook, LinkedIn, Freelancer	"It has allowed me to build my network, thereby increasing my client base. I also allows me to remain up-to-date with the zeitgeist so I can create relevant content for my clients", "This is also why I've used my digital skills for fundraising and community management of NGO social media platforms.", "In the South African context there is great earning potential for writers, particularly if you can secure international clients who can pay in foreign currency"
Respondent 6	LinkedIn, slack	"Able to do freelance work Able to communicate with other designers to discuss relevant subjects.", "In the beginning I was very sceptical on these platforms as there are a lot of fraud on online4 platforms."
Respondent 7	M4Jam, freelancer, twitter, YouTube	"Before I was very skeptical due to not enough information being available and in SA freelancing isn't as big but now I'm more open to freelancing platforms",

		“not enough reliable sources share these crowfunfing platforms”
Respondent 8	pinterest, SA creatives and facebook	“well, I didn't think would have to wait this long to receive work from clients and that has demotivated me a little, however I do think that the opportunities are somewhat endless with these platforms”, “it is necessary, we're living in a very technologically based and digital orientated age therefore a lot more services are evolving and can now be performed digitally”
Respondent 9	SAFREA, NoSweat Work	“That global crowdsourcing sites are a waste of time, as they pay very little”, “Globally, sites like UpWork exploits freelancers. You can get paid as little as $30 for an article that takes 5 - 6 hours of research, writing, and editing. Fortunately, I find that South African platforms like NoSweat Work pay much more fairly.”, “get two fairly significant jobs by belonging to SAFREA.”
Respondent 10	M4Jam	“I learned that the more informations there is, the better”, “ Not so much work today as when it started
Respondent 11	Fiverr	“Working on Fiverr has been better than I expected. I was wary at first and thought I'd mostly get boring and/or underpaid jobs,”, “Overall, I enjoy it a great deal”
Respondent 12	Assen, ProZ.com, Lingual Consultancy, VIAX Corporate Language Solutions	“Yes, it has made me realise that my skills are of value internationally”, “It's easier and less risky than I thought at the beginning.”, “Instructions were clear”
Respondent 13	Behance, LinkedIn	“I was and still is to a lesser extent fiery of non- organic followings on these platforms and have work hard in creating organic followings.”, “Has created opportunities to work in Europe and the UK. Created travel opportunities.”, “The fact that I got high profile work from exposure on these platforms.”
Respondent 14	patreon and upwork, cgtrader, slack (I am actively engaged on these platforms)	“Communication and money management and as and growth and recognition artist. Met a lot of people around the world.”, “Working online gives you access to world FIAT currency like dollar and pounds which is great because the rand is extremely weak. I'd rather freelance for an employer overseas than work locally and get paid badly. Digital artists have no union and no benefits.”
Respondent 15	Upwork and People Per Hour	“There are so many small job opportunities but to apply for each one takes tremendous time and effort. - I was competing in rate and not merit. - Some platforms offer paid memberships that allow you to be pushed to the top of the submission que. I don't think this is fair.”, “I was on these platforms very briefly and rarely got any work”, “I felt isolated from the world. I enjoy being a photographer more than a retoucher using crowdsourcing sites.”, “I also struggled a little bit with payments. If you aren't using the right crowdsourcing websites you might get cheated.” “The competition with these websites are quite high and clients usually end up going for the lowest rates.”
Respondent 16	Upwork and freelancer	“It's not regulated to insist that people pay what their worth, and competing with international people who are willing to get paid way less”, “I used to think I would be able to make a living but now I know I have to put in way too much work”
Respondent 17	Twine	“only the winning work is paid for. This kind of work is exploitation of creative workers, it floods the market with bad design and not something I promote or am involved in.”, “the exchange rate when doing work overseas can make

		things complicated/confusing."
Respondent 18	vimeo, instagram, youtube, behance, linkedin, hitrecord, facebook, twitter, tumblr, voices.com	"Shortage of local work opportunities.", "Crowdsourcing is simply a digital market/marketing/networking platform." "an appreciation for what good marketing can do for my career", "Expanded work opportunities, particularly sourcing work from outside of South Africa"
Respondent 19	Indiegogo, Kickstarter, youtube, Fiver	"it is harder than it seems to make a success of it, it requires significant input and not guaranteed output."
Respondent 20	Creative Market & Etsy	"Clients always look for a bargain and they will find one as designers will undercut each other to get the work. There is no standard fee. It kills the industry. It kills the livelihood of designers.", "in something like Fiverr again as it undermines my ability to be an excellent designer and getting paid properly for my efforts."
Respondent 21	Upwork, fiverr, linkedin, sometimes even the Facebook group called The Resources	"has given me broader understanding and knowledge about a lot more subject matter than without crowdsourcing platforms", "The range and scope of projects are larger when something is crowdsourced,"

Networking

Table 60 Networking All Reponses

Participant	Views Around Networking individuals
Respondent 1	
Respondent 2	
Respondent 3	Collaboration with other professionals in my field has also opened up further opportunities
Respondent 4	
Respondent 5	"great earning potential for writers, particularly if you can secure international clients who can pay in foreign currency.", " Personally, money, the opportunity to network and gain more clients, and as a way of paying it forward.", "It has allowed me to build my network, thereby increasing my client base."
Respondent 6	"have built connections with people in the design industry that is able to help me"
Respondent 7	
Respondent 8	I have connected with clients I would not have otherwise met
Respondent 9	"networking,"

Respondent 10	
Respondent 11	“most of my work is issues with clients”, “it is possible to find clients and platforms that value your work and pay you wel”
Respondent 12	“Yes, it has made me realise that my skills are of value internationally.”
Respondent 13	“Has created opportunities to work in Europe and the UK. Created travel opportunities.”
Respondent 14	“to stay connected to groups and connections.”, “Communication, Met a lot of people around the world.”
Respondent 15	“I found that working online was quite lonely and I felt isolated from the world. I enjoy being a photographer more than a retoucher using crowdsourcing sites. As a photographer I interact with people a lot more.”
Respondent 16	
Respondent 17	“Quality interactions,”(main incentive)
Respondent 18	“Digital platforms have also expanded my potential client market due to crowdsourcing having a global reach.”
Respondent 19	“Design and Marketing related Tasks” (Digital tasks performed), “I got lucky with the project I worked on, and it was successful.”
Respondent 20	“. I think because there is no human contact, the client simply do not see you as a person, just a faceless workhorse.”, “I've worked remotely with other designers, writers, illustrators and photographers to do many magazines and coffee table books, without having to be in the same physical space. Many of these co-workers I've never even met in real life.”
Respondent 21	

Use of Technologies

Table 61 Use of Technologies All Responses

Participant	Technolog(y/ies) Owned	Device(s) most used and why
Respondent 1	PC, Smartphone	mobile
Respondent 2	PC, Smartphone	“MacBook Pro. Need it to code”
Respondent 3	PC, Smartphone, Tablet	“Laptop Portability gives me the flexibility to work anywhere and anytime and the processing power allows me to access multimedia easily”
Respondent 4	PC, Smartphone	“My laptop and mobile phone”

Respondent 5	PC, Smartphone	“My smartphone, because it's portable. However for content creation (crafting social media posts, writing blogs, doing research etc) I prefer my laptop because it allows for in-depth concentration and is more comfortable for me to use (because of my chronic illnesses)”
Respondent 6	PC, Smartphone, Tablet	Mobile, Laptop
Respondent 7	PC, Smartphone	“Laptop because they easy to take around and all links usually work well. The screen is wide enough to see clearly everything on the page”
Respondent 8	PC, Smartphone	“Smartphone: For when i am not at my desk and to keep me in contact with clients”
Respondent 9	PC, Smartphone	Laptop, mobile
Respondent 10	PC, Smartphone, Tablet	“Mobile. You had to do it at the location”
Respondent 11	PC, Smartphone	“PC and mobile phone. I use both to access Fiverr”
Respondent 12	PC, Smartphone, Tablet	“Laptop. It's the most convenient.”
Respondent 13	PC, Tablet	“laptop, tablet and smartphone. Easy access and always have one or more device with me.”
Respondent 14	PC, Smartphone, Tablet	“Desktop PC or laptop because the software”
Respondent 15	PC, Smartphone	“I used mostly my PC. It was easier to keep track of everything. I also did most of my work on a laptop so it was easier to communicate with clients like that. I downloaded Upwork's app for a while but I never ever used it.”
Respondent 16	PC, Smartphone, Feature phone	“Laptop, it's easier and faster”
Respondent 17	PC, Smartphone	“PC, since it has the strength for my design programs.”
Respondent 18	PC, Smartphone, Tablet	laptop
Respondent 19	PC, Smartphone, Tablet	PC, Tablet
Respondent 20	PC, Smartphone	“Laptop. I design on my laptop. It's my work horse.”
Respondent 21	PC, Smartphone	Laptop

Work Conditions

Table 62 Work Conditions All Responses

Participant	Views Around Work Condition
Respondent 1	“monetary compensation, career growth and learning to reach ones full potential”, “cheaper internet makes it more accessible to masses”
Respondent 2	“able to travel anywhere anytime”, “Working remotely and able to travel”, “Flexible hours or days (take leave when needed) Usually better pay

	than employee if good at what you do"
Respondent 3	"Flexible working times, Guaranteed remuneration through Escrow", "Effective and safe on Upwork", "it becomes an input cost to doing business - which is significantly lower than renting office space and traveling to your place of work."(internet), "Collaboration with other professionals in my field"
Respondent 4	"Internet is very expensive in South Africa compared to other 3rd world countries."
Respondent 5	"This level of flexibility and ability to work remotely is absolutely vital to me because I am chronically ill", "Access to the internet in South Africa is prohibitively expensive, especially if you're not in a major city with access to a public library."
Respondent 6	"The opportunity to be able to work in different countries if needed", "Able to communicate with other designers to discuss relevant subjects."
Respondent 7	"Freelancers are not paid well enough especially newbies in the game."
Respondent 8	"yes it has provided me with flexibility as well", "I have connected with clients I would not have otherwise met"
Respondent 9	"Global - not a good experience. Local - good experience", "Issues like load-shedding is a big problem when working from home", "the convenience of working remotely, being paid in a stronger currency"
Respondent 10	"Mobile Data is very expensive. ADSL is just for home and not all public places have internet access", ""
Respondent 11	"- Good pay-Good pay - Great user interface - Payment comes through fast - Customer support is Great - Interesting and fulfilling work", "It's quite expensive - not to mention that setting up ADSL through Telkom is a headache and a half."
Respondent 12	"earning international currency", "It's easier and less risky than I thought at the beginning.", "Instructions were clear; payment was received although not very promptly."
Respondent 13	"Has created opportunities to work in Europe and the UK. Created travel opportunities.", "Easy access and always have one or more device with me."
Respondent 14	"gives you access to world FIAT currency like dollar and pounds which is great because the rand is extremely weak.", "Money I would say is the main incentive as well as flexible working hours", "I am fortunate to be able to afford it."(internet), "Met a lot of people around the world."
Respondent 15	"Sometimes the time difference was a bit of a problem and clients struggled to communicate with me. -Payments was always stressful and a big anxiety.", "Upwork has a nice solution for this now..Upwork offers mediation alternatives for creatives and clients", "you work much longer for much less on crowdsourcing platforms.", "I found that working online was quite lonely", "I used mostly my PC. It was easier to keep track of everything.. communicate with clients"
Respondent 16	"I am a writer we are often underpaid and overworked", "because you can not always state your name on a project, you never get the credit", "Yes, I value my time a lot more and slowly beginning to place added value to time"
Respondent 17	"I find it to be similar to having clients offline, since it's still humans you're dealing

	with that need to be managed", "the exchange rate when doing work overseas can make things complicated/confusing.",
Respondent 18	"Often crowd sharing service providers can act as a good 'agent' and protect service providers by enforcing standard market rates.", "networking, transparency", "Expanded work opportunities, particularly sourcing work from outside of South Africa"
Respondent 19	"it requires significant input and not guaranteed output."
Respondent 20	"'I've worked remotely with other designers, writers, illustrators and photographers to do many magazines and coffee table books, without having to be in the same physical space.", "There is no thinking time (they do not qualify that as working on the job) which is crucial to design work.", "There is no research time as they do not want you to research on their time.", "There is no standard fee.", "I think because there is no human contact, the client simply do not see you as a person, just a faceless workhorse.", "Mainly the time frames and the terrible payment."
Respondent 21	"Not having to commute every day to sit in an office for ±8hrs a day makes life a lot easier.. I can manage my time and my life a lot better.", "If you have access to the internet, you can basically learn any skill you want online, and mostly it's for free.", "The range and scope of projects are larger when something is crowdsourced, ..ability to pick the best option"