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# Attitudes toward and Experiences of Digital Labour in South Africa

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**Abstract.** Digital labour is viewed as having the capacity to drive the technological and economic development by addressing critical issues that often encountered in African countries like South Africa, such as high unemployment, low local wages, lack of local demand and others. As such, it is seen as a crucial steppingstone towards (South) Africa's move towards the Fourth Industrial Revolution (4IR). However, digital labour could also bring significant drawbacks such as exploitation of workers, unguaranteed or no remuneration. This research investigates the attitudes toward digital labour, intention to participate in digital labour; initial experiences from participating in digital labour and continued participation in digital labour practices. We propose, validate and empirically test a new integrative model, and supplement our model with qualitative findings. Digital workers' attitudes and experiences toward digital labour did, unsurprisingly, correlate significantly with the intention and participation of people in digital labour with key aspects of digital labour pertaining to the Global South being identified. Most individuals responded positively toward their experience with digital labour, particularly based on the compensation that they expected or experienced for their digital work.

**Keywords:** Digital Labour, Digital Work, Fourth Industrial Revolution, 4IR, Attitudes, Digital Platforms; Gig Economy, Crowdsourcing, Microwork.

## 1 Introduction

Digital work is described as the creation of new products and services through the use of the human mind, speech and various forms of digital media [1]. Often, digital labour (or gig economy) can include various forms of paid and unpaid digital work forms [1][2]. [2] distinguished between two types of gig economy work, namely digital gig economy, where the work is primarily digital and the on-demand gig economy, where the work is manual even though it is partly supported on a digital platform (e.g. AirBnb, Uber). This research was focused particularly on digital gig economy platforms.

Major barriers that often inhibit economic and technological developments in African developing countries include a lack of development of telecommunications infrastructure [3], a lack of appropriate ICT investment policies, insufficient development of skilled labour, and limits to foreign-trade imports [4]. Digital labour activities such

as crowdsourcing tend to be beneficial for addressing challenges in African countries by harnessing the skills of multiple workers on online platforms, enhancing operational efficiency in organisations and providing more employment opportunities through crowdsourcing initiatives such as microwork [5].

However, there are also significant drawbacks experienced by people participating in digital work which include exclusion based on traits such as race, religion, successful digital workers exploiting other workers, business knowledge restrictions and others [1][6].

The main purpose of this research on digital labour is about investigating the attitudes and experiences of people who get paid for their digital work (digital labourers), concerning digital labour with a particular focus on the practice of crowdsourcing, particularly in South Africa. According to [7] although studies that examine digital labour in the Global South are present, the actual and continued practice of digital labour is still a growing area in the Global South and is still in need of further investigation. Therefore, this research investigates the attitudes toward digital labour, intention to participate; initial experiences from participating and continued participation in digital labour practices to contribute to the body of growing research. We propose, validate and empirically test a new integrative model and supplement our model validation with qualitative findings on the barriers experienced by digital labourers in South Africa.

This paper first sketches the background of digital labour in Africa, including its perceived benefits and issues. Then follows the research methodology which also introduces the theoretical model, which was adopted for the research and, based on the model, the detailed research questions. This is followed first by the quantitative analysis section which seeks to validate the model, then by a qualitative analysis section which adds further detail and insight to the analysis. The analysis is then discussed in more detail. The conclusion highlights recommendations and limitations of the research.

## **2 Background**

Often in African countries there is a significant lack of technology infrastructure that is required for economic and ICT development. As an example, often low-end feature phones are used by a lot of people in poor communities in countries like South Africa, where in most cases, people cannot afford to purchase ICT infrastructures and smartphones [3]. However, [8] noted that countries like South Africa have more advanced ICT and mobile infrastructure than other developing countries. According to [9], in South Africa, 64.7% households nationally 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.

In many developing countries, though, there is a lack of appropriate policies which are critical for enhancing ICT adoption, innovation, education, research and development [10]. According to [11], developing countries seek for foreign investments regarding uptake of technology, but often lack necessary components in their policies such as contractual agreements, foreign alliances, in order to effectively collaborate

with other foreign entities. [12] further mention that because of the segregation of education system in South Africa, which led to many people being deprived of learning subjects, such as Mathematics and English, numerous South Africans become less aware of the implication of policies that exist concerning technology usage.

Another challenge in African countries is that basic ICT skills are often unequally spread among different population groups in developing countries, particularly in South Africa [13]. [14] highlighted that in certain African countries, students, including adults tend to struggle with basic language literacy skills due to lack of successful language teaching approaches which leads to missed employment opportunities.

## **2.1 Digital Labour Initiatives**

The implementation of digital labour initiatives is crucial for addressing the major circumstances in countries like South Africa such as unemployment, poverty and others. Some of the digital labour initiatives that are practised include crowdsourcing and microwork [6].

Crowdsourcing, for instance, is known to be the digital labour activity where numerous people can reach out to each other through a network on an ICT platform in order to share and exchange ideas and resources flexibly [5][6]. The idea of sharing and collaborating crowdsourcing information has been witnessed on global digital platforms such as Facebook, LinkedIn, YouTube, Wikipedia and Upwork which all rely on the contribution of various content by clients around the world, even from developing countries [15]. Regarding microwork, also regarded as crowdsourcing initiative, it is described as an activity 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 can be beneficial even for people who do not possess smartphones or personal computers [5]. Commonly used microwork platforms used by internet users include South African digital platforms such as Mintor, Hooros, Crew Pencil and several others [16].

Crowdsourcing initiatives can present notable benefits such as knowledge sharing, increased networking and communication amongst business colleagues, new job opportunities, enhanced consumer interaction and several others [5][6]. While there are key benefits in crowdsourcing, there are also significant drawbacks experienced by digital workers, such as low remuneration for online labour provided, exploitation of online labour, lack of formal agreement for ensuring workers' rights [1].

## **2.2 Digital Labour Issues**

Putting into practice digital labour activities could still give rise to significant challenges for digital workers in South Africa. One significant problem is that people using digital and social media platforms can be excluded from certain labour markets due to race, gender or economic status and thus be economically excluded from certain digital platforms [1].

Another notable challenge with digital labour is that successful, highly-skilled digital workers could employ and aggregate and exploit other less experienced or skilled

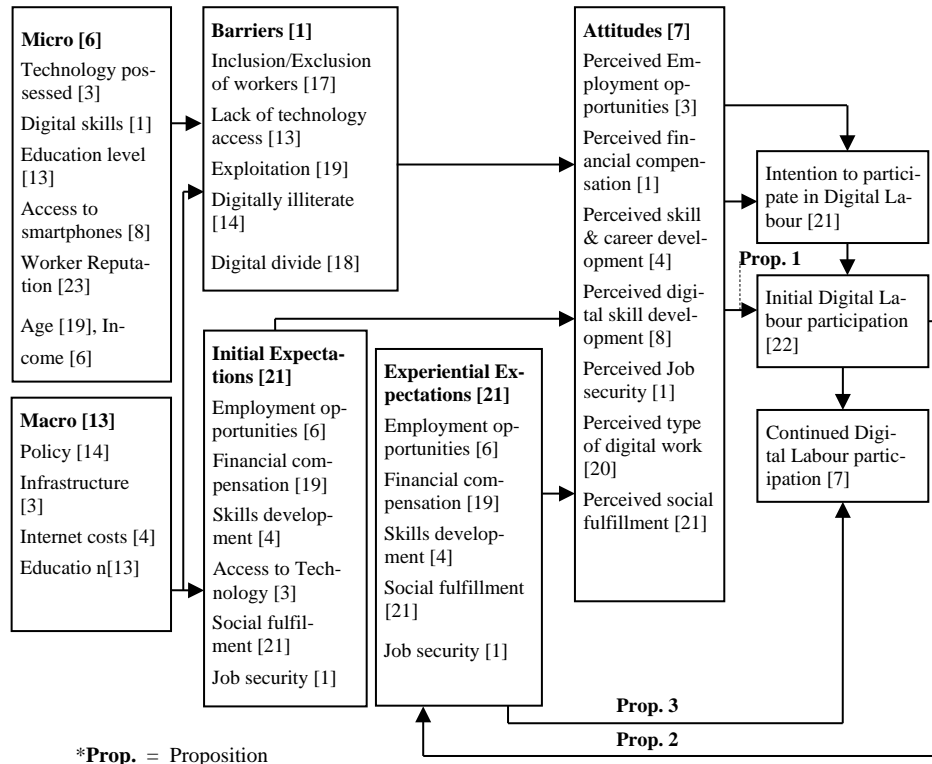
digital workers to undertake digital work that may be burdensome and low-paying, in a process called re-intermediation [17][1]. However [6] also described the idea of dis-intermediation, where workers could gain the opportunity through the internet to directly interact with their clients without requiring a mediating agent [1][18].

Moreover, digital workers in companies may be barred from accessing knowledge about business processes and thus 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 [2]. Also, on digital platforms, workers tend to lack the ability to govern and communicate with each other and therefore are unable to unite, form unions and harness bargaining power in order to obtain fair work conditions [19]. [20] highlighted that, as employers tend to favour higher-skilled workers and divert resources and opportunities away from lower-skilled workers to higher-skilled workers, low-skilled workers would have their wages reduced and lose their bargaining power.

### **3 Research Methodology**

The theoretical model used for conducting this research was constructed using concepts mainly from the various sources of literature used for this article and from a popular theory known as Self-Determination Theory (SDT). SDT was used for describing the attitudes and expectations in the Fig 1 model. SDT examines the extent to which one becomes self-motivated without any external influence [21]. SDT describes the different kinds of motivations, from the extrinsic motivations which are affected by external rewards or punishments to intrinsic motivation where an individual becomes self-determined to undertake a behaviour without requiring external agent [22]. The greater in-depth analysis on the types of motivations that encourage participation in digital labour particularly relating to individuals' attitudes and expectations was the major justification for the use of SDT in the Fig 1 model. Other Fig. 1 constructs, namely intention to participate, initial participation and continued participation were used as adaptations of Technology Acceptance Model (TAM) and Theory of Reasoned Action (TRA) concepts, to pertain more to adopting a technology practice(s) than to the use of a particular technology [21][22].

For the theoretical model, the macro construct was used to describe the issues that would affect digital labour practices regionally or even countrywide such as policy and education [13]. For the micro construct, the aspects that could digital labour specific to individuals such digital literacy. The barriers construct consisted of aspects that would occur when there is a full participation in digital labour participation such as lack of digital skill, as shown in the Fig. 1 model [1][2].



**Fig. 1.** Digital Labour Theoretical Model

The main constructs in Fig. 1 which were investigated in the research were namely the barriers, initial expectations, the experiential expectations, intention to participate in digital labour, initial participation and the continued participation in digital labour.

The research questions were concerned with how the attitudes and experiences of individuals around digital labour along with the intention to participate, would shape their actual participation and their continued participation.

1. What is the relationship between digital labour attitudes with people's initial participation or experience of digital labour?
2. How do some aspects of digital labour affect people's experience of digital labour?
3. What is the relationship between people's initial participation in, or past experience with digital labour with the continuation of their digital labour practices?

The propositions that were investigated in the quantitative data analysis were based on the main constructs for the research model and were used to address the main research questions. The propositions are stated as follows.

- Proposition 1: Attitudes of digital workers and the intention to participate in digital labour both have a positive relationship with their initial participation in digital labour.

- Proposition 2: Initial Participation in Digital Labour has a positive relationship with the experiential expectations around digital labour.
- Proposition 3: Experiential expectations of digital workers concerning digital labour has a positive relationship with the Continued Participation in Digital Labour.

The empirical data to test the model was obtained by means of a survey involving a sample consisting of 70 South Africans who possess basic ICT skills such as blogging, web browsing. The individuals participating in the survey sample were undertaking digital work on platforms relating to crowdsourcing such as htxt, entrepreneurmag, LinkedIn and Upwork, and being paid at any amount for doing digital work. Incentives, such as Electronic Funds Transfer (EFT) payments, offer and mobile airtime were used to encourage participation in the research survey from as many respondents as possible.

The questionnaire used for the research survey had both Likert and open-ended questions and was administered after pilot-testing. The questionnaire for the research was generated and distributed to respondents in the survey sample using an online web survey tool called Qualtrics and the respondents would fill in the questionnaire online. The questionnaire contained questions that were guided by the theories described in the Fig. 1 model. The questionnaire was anonymous and therefore did not collect sensitive personal information from the respondents. Ethics clearance was obtained from the University's Ethics Department. The research data was gathered from the questionnaire responses and analysed using a mixed methods approach involving various quantitative and qualitative techniques. The quantitative analysis was used in order to examine and validate theories described in the Fig. 1 model. The qualitative analysis techniques were used to gain deeper insights about the experience of digital workers that might reinforce or contradict the significant quantitative analysis results, and possibly discover new insights for the proposed model (Fig. 1).

## 4 Quantitative Data Analysis

The data used for the quantitative analysis was quantified from the responses given by all the survey respondents to the Likert-scale questionnaire questions, which were asked based on the Fig. 1 constructs. The Fig. 1 constructs investigated included expectations, barriers, attitudes intention to participate, the initial participation and continued participation in digital labour. The quantitative analysis methods were conducted using TIBCO Statistica and Microsoft (MS) Office Excel 2010.

The final sample size, after removal of incomplete responses, consisted of 70 respondents. Forty-six of them had crowdsourcing experience whereas 24 of them did not. Most respondents were under the age of 45 years. There were 39 females and 30 males with one respondent refusing to disclose their gender. Concerning education, most of the respondents had tertiary education as their highest education level, with 41 respondents having a bachelor's degree. The quantitative analysis methods and tests conducted are described in the sections that follow.

#### 4.1 Reliability Analysis

The Cronbach Alpha method was used to test how well the variables representing the survey questions fit together in each of the main digital labour model constructs in Fig. 1. The variables were derived from multiple Likert-scale questions and the constructs of initial (0.79) and experiential expectations (0.82), and attitudes (0.84) all held up well apart from barriers with a relatively low 0.60, reflecting some diversity in the barriers. However, each of the constructs had sub-constructs and we wanted to keep the detail of these sub-constructs to enable more fine-grained analysis and, hopefully, policy recommendations. Thus, exploratory factor analysis was done on each of our major model ‘grouping’ constructs to identify and/or validate our sub-constructs.

#### 4.2 Using Factor Analysis to Refine the Variables in the Initial Model

The factor analysis method was performed to test if valid factors could be formed from the large number of questions that were asked for the main constructs (and whether they corresponded to the initial model). The Factor Analysis was performed separately for each of the main constructs. Therefore, four sets of factor analysis results for the main constructs barriers, initial expectations, experiential expectations and attitudes were produced as a result.

For each of the factor analyses tables, the final sub-constructs that emerged are shown below, along with a short description of our ‘final’ model sub-constructs.

**Table 1.** Final Model Constructs.

	<b>Initial Expectations Factors</b>
ExpctSocialMedia	The perceived expectation of being able to use social media for sharing ideas and promoting innovation would consequently affect the perceived expectation of benefitting from knowledge creation and sharing amongst communities on digital labour platforms.
ExpctSocialBelonging	The perceived expectation of obtaining a social belonging on digital labour platforms
ExpctLivingWage	The perceived expectation of being able to earn a living on digital labour platforms.
ExpctSecurity	The expectation that there would be security and privacy of personal information when participating in digital labour platforms.
	<b>Experiential Expectations Factors</b>
ExpctLivingWage	The experiential expectation of continuing to earn a living wage for performing digital work in the future.
ExpctSocialBelonging	The expectation of continuing to find or experience a social belonging on digital labour platforms.
ExpctSecurity	Continued expectation of experiencing security and privacy of personal information on digital labour platforms.
ExpctRealWorldImpact	The experiential expectation of digital work causing a real-world impact in communities
ExpctInternetAccess	The experiential expectation that there would be sufficient internet access available.
	<b>Barriers Factors</b>



BarCitizenship	The barrier of citizenship or nationality on being able to participate in online employment opportunities.
BarInternetCost	The barrier of the cost of internet access due to government policy and its effect on internet access across South Africa.
BarDigitalSkills	Digital skills determining the amount of payment and benefit that is received for participating in digital labour.
<b>Attitudes Factors</b>	
AttCompetence	Digital work activities are considered suitable for an individual's competence and professional skills, and gaining pleasure from performing digital work.
AttInfoSecurity	Not being too worried overall about personal information security would affect the attitude of lacking any overall worries about online fraud.
AttTechnologyUse	Attitude towards owning and using more technologies in digital work activities, significantly explains factor 3.
AttCommunication	Prepared to considerably change the ways of communicating to participate in digital labour
AttCrowdworkJob-Security	Prepared to pursue long-term crowdsourcing jobs would influence the attitude of obtaining opportunities to build career and skills through digital labour participation.
AttWorkLocation	Prepared to perform digital work from any location.

### 4.3 Regression Analysis Results

Regression analysis was conducted to determine the nature of the relationship between the Fig. 1 model constructs relevant to each research question. The variables analysed were the sub-constructs from Fig. 1 and Table 1 which were relevant for the research questions. In order to ensure that multicollinearity was not an issue, the backward stepwise regression was performed for each of the following regression models to ensure that only independent variables that were not heavily correlated with each other would remain in the regression models.

Regarding the first proposition, backward stepwise regression was performed for "InitialParticipation", the attitudes variables and "ParticipationIntention" (Table 2).

**Table 2.** Regression Model for Initial Participation, Participation Intention and Attitudes.

Regression Summary for Dependent Variable: InitialParticipation						
R= .843 R <sup>2</sup> = .711 Adjusted R <sup>2</sup> = .702 F(2,67)=82.46 p<.00 Std.Error of estimate: .487						
N=70	b*	Std.Err. (b*)	b	Std.Err. (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

The p-value signified that the regression model was very significant and that the claim by the second proposition holds. From the beta values, "ParticipationIntention" had a very strong relationship with the "InitialParticipation" whereas "AttCommunication" had a significant, but weak relationship with "InitialParticipation". The R<sup>2</sup> value

signified that the “ParticipationIntention” variable and the “AttCommunication” variable explained a large portion of the variation in the “InitialParticipation” variable.

Pertaining to the second proposition, the expectations and the initial participation in digital labour were investigated using backward stepwise regression (Table 3).

Table 3. Regression Model for Expectations.

<b>Regression Summary for Dependent Variable: ExpectationsAvg(Prop3)</b> <b>R= 0.626 R<sup>2</sup>= 0.392 Adj R<sup>2</sup>= 0.379 F(1,44)=28.4 p&lt;0.000 Std.Error of est: 0.504</b>						
<b>N=46</b>	<b>b*</b>	<b>Std.Err. (b*)</b>	<b>b</b>	<b>Std.Err. (b)</b>	<b>t(44)</b>	<b>p-value</b>
Intercept			2.26	0.32	7.11	0.000000
InitialParticipation	0.63	0.12	0.42	0.079	5.33	0.000003

Concerning the regression model, the p-value indicated that the regression model was very significant and justified the claim made by the third proposition. From the beta value, “InitialParticipation” had a notably strong relationship with “Expectations”. The R<sup>2</sup> value indicated that “InitialParticipation” explained a notable, moderate amount of the variation in the “Expectations”.

With regards to the third proposition, the continued participation in digital labour, the experiential digital labour expectations and the initial participation in digital labour were examined using the backward stepwise regression (Table 4).

Table 4. Regression Model for Continued Participation

<b>Regression Summary for Dependent Variable: ContinuedParticipation</b> <b>R= 0.81 R<sup>2</sup>= 0.65 Adjusted R<sup>2</sup>= 0.64 F(2,43)=40.74 p&lt;.00000 Std.Error of estimate: 0.59</b>						
<b>N=46</b>	<b>b*</b>	<b>Std.Err.(b*)</b>	<b>b</b>	<b>Std.Err.(b)</b>	<b>t(43)</b>	<b>p-value</b>
Intercept			0.49	0.40	1.22	0.23
ExpctLivingWage	0.29	0.10	0.28	0.10	2.77	0.0082
InitialParticipation	0.63	0.10	0.65	0.11	6.12	0.0000

The regression model in Table 4 was significant from the p-value which also justified the statement by the fourth proposition. From the beta values, the “InitialParticipation” variable had a strong relationship with the “ContinuedParticipation” variable whereas “ExpctLivingWage” had a modest relationship with the “ContinuedParticipation” variable. From the R<sup>2</sup> value, the “InitialParticipation” variable and the “ExpctLivingWage” explained a large amount of the variation in “ContinuedParticipation”.

## 5 Qualitative Data Analysis

The survey questionnaire also contained some open-ended questions where respondents could share their views mainly around particular digital labour experiences. The re-

sponses from 20 different respondents were analysed. The qualitative analysis was necessary for addressing the main research questions, especially the second question and further exploring theories tested in the quantitative analysis.

For the qualitative analysis, thematic analysis was used to analyse the responses shared by the respondents in the survey questions. Key digital labour themes which related to digital labour experiences were identified from the respondents' views. The digital labour themes were analysed along with key corresponding statements, thoughts, sentiments and emotive words from respondents. The thematic analysis was conducted using the tools, namely, Microsoft Office Excel and NVIVO Software. The themes and the corresponding responses are described and analysed below.

### **5.1 Fair Compensation**

Regarding compensation for digital work, many respondents mentioned that compensation was the primary incentive for digital labour participation. A significant number of respondents felt that the monetary reward received for producing online work was very little. As an example, Respondent 16, "I am a writer we are often underpaid and overworked". Similarly, Respondent 9 also expressed, "Globally, sites like UpWork exploits freelancers". The respondents' reactions would 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 competition with other workers for opportunities [1].

Conversely, some respondents expressed that they could obtain opportunities for higher wages, as in the case of Respondent 5 when they mentioned the following point, "great earning potential for writers... This is why I contribute to Wikipedia...other info. portals". The respondents' positive views would coincide notably with the literature which points out that workers tend to have to compete for opportunities with other workers and could obtain higher or lower wages based certain skills being demanded [18].

### **5.2 Digital Skill**

For the digital skill of respondents, a significant number of respondents viewed digital platforms as an opportunity to showcase, utilise and develop their skills for interesting online jobs. Certain respondents also mentioned that they can obtain access to certain opportunities through their skills on digital platforms such as the Southern African Freelancers' Association and Fiverr as well as collaborate with other online professionals with similar skillsets from other countries such as the United States(US). As an example, Respondent 3 stated, "Exposure and promotion of skills...easy access to potential work". Respondent 11 suggested "Digital work is an excellent way for creative people to use their skills while making money; interesting, fulfilling work".

However, some respondents in their views mentioned that people could have their skills exploited without being offered fair payment for performing digital labour, which illustrated the concept of exploitation of workers due to their skill level in the literature [1][19]. Respondent 17 says "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”.

### 5.3 Internet Cost and Access

Concerning internet access and cost, most respondents had some access to the internet, and many had smartphones, Wireless and Fibre Internet Connections. As an example, Respondent 15 explained “Cape Town has fast fibre internet available almost anywhere, outside of Cape Town is more affordable, but quality internet connection is not as available”. South Africa, according to literature has among the most advanced ICT and network infrastructure in the African continent, even with internet costs problems and infrastructure in many African countries as also expressed by the survey respondents [8].

Most respondents however found internet access very expensive. Respondent 4: “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 18 stated the “It is holding back the ability to interact with crowdsourcing platforms from disadvantaged segments of South African society”. Respondents’ views agreed with the literature which emphasizes how poorer communities in South Africa struggle to afford high-quality internet access [3].

### 5.4 Networking

Many of the respondents felt that they should connect with clients even abroad. They felt that they could obtain opportunities for interesting digital work, of social fulfilment and higher (“fairer”) compensation. Respondent 5: “great earning potential for writers, can secure international clients who can pay in foreign currency”, and “working online was quite lonely I felt isolated from the world.”

A few respondents however expressed frustration over their interactions with clients. Respondent 20 expressed his frustration, “there is no human contact, the client simply does not see you as a person, just a faceless workhorse... Clients always look for a bargain”. The result resembles the idea literature that expresses that digital workers could be exploited by having their work to clients by platform providers while workers are deprived of fair compensation and client interaction [24].

### 5.5 Work Opportunities

Most respondents felt that work opportunities were readily available, more so on global platforms than local digital platforms. Respondent 14: “I’d rather freelance overseas than work locally”. Some respondents found global opportunities to be more rewarding concerning compensation earned in stronger currencies (compensation theme). The positive views related to the literature which expressed that initiatives such as crowdsourcing could present various new job opportunities [8].

However, some respondents had less desirable experiences. Respondent 9 mentioned that “global crowdsourcing sites are extremely competitive and usually the

'cheapest' rates get the jobs. Global - not a good experience. Local - good experience". Respondent 5 suggested that global sites tend to exploit digital workers' labour and underpay workers whereas with certain local sites like NoSweat tend to reward workers more fairly. This view resonates with the literature finding workers on global platforms get lower payments from clients or are underbid by workers charging lower rates for similar services [1].

## 6 Discussion and Interpretation

The purpose of the quantitative and the qualitative analysis was to use data gathered to investigate the significance and effect of the relationships between the main model constructs (Fig. 1) in digital labour. The data analysis, particularly with the qualitative analysis, was also aimed at further exploring certain aspects of digital labour experiences in order to discover other relevant theories which could either reinforce the hypothesized relationships in the model, contradict or add to them. The refined research model produced after combining the qualitative and quantitative analysis findings is summarized in Fig. 2.

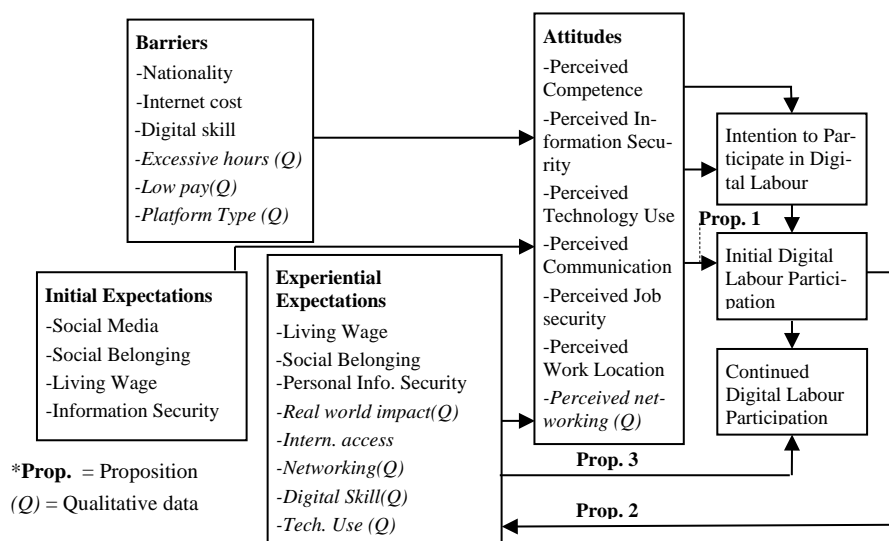


Fig. 2. Refined Digital Labour Model

Considering the first research question, the attitude concerning communication, along with the intention to participate (Table 3) had a notably very strong relationship with the actual participation in digital labour. This agreed partially with the qualitative results, as some respondents mentioned that networking and communicating with clients and partners as one of their primary incentives for participating on digital platforms. Literature studies also described how the networking of people on digital labour platforms, like in crowdsourcing, could be beneficial for exchanging ideas, resources

and motivating participation in online activities [8][15]. The result for “Participation-Intention” resembled that of many studies that use the TAM theory [22].

With regards to the second research question, the regression model, in Table 4, showed that the initial participation in digital labour was observed to have a strongly positive relationship with the average experiential expectations. The qualitative findings did in part reinforce the result for experiential expectations as many of the respondents found their digital labour experience overall to be desirable and had their perceptions of digital labour positively affected. Some respondents however had negative overall experiences and had their perceptions about digital labour adversely affected. The result for experiential expectations partially resembles the idea in certain studies that the experience could have an effect on the use of technology such as an electronic learning system, by individuals [24].

Additionally, for the second research question, the qualitative analysis results indicated that some of the main digital labour aspects described by respondents had some relation with the aspects being investigated in the quantitative analysis and were namely compensation, digital skill, internet costs and access, work opportunities and networking. For most of the qualitative responses, respondents emphasized that compensation was one of the main incentives for participating in digital labour. Also, several felt that there were opportunities to earn wages in the form of foreign currency and guarantee of payment based on the particular digital platform.

Regarding the third research question, from Table 5, the initial participation in digital labour and the experiential expectations, had a very strong, significant relationship with the continued participation in digital labour. The result for continued participation was reinforced by the qualitative findings, where some respondents suggested that there were numerous opportunities to earn an income based on the digital platform and type of work which would encourage continued participation. Various studies emphasized that the payment received for digital work is a more significant motivator for digital workers than other intrinsic motivators [23]. Also, concerning initial participation, [7] emphasized that constructs that are related to experience and are part of initial use of technology, such as satisfaction and ease of use are crucial in determining the continued use of technology.

## **7 Conclusion and Recommendation**

The research aimed to explore the attitudes and experiences around digital labour in depth. A comprehensive model was proposed that included micro- and macro-environmental variables influencing barriers and initial digital labour expectations. Together with actual experiences, these were found to shape digital labour attitudes. Attitudes then drive initial and continued digital labour participation, feeding back into future expectations (Fig. 1). This proposed model was substantially validated: it was found that the attitudes and experiences of individuals toward digital labour did correlate significantly with the intention and participation of people in digital labour. Most individuals responded positively toward their experience with digital labour, particularly based on the compensation that they would obtain for their digital work. Also, past digital

labour experience was found to correlate notably with the continuation of individuals in digital labour activities, with the compensation in particular being a significant experiential aspect in this regard.

One of the main limitations of this research was the relatively small sample size; offering a more substantial reward for participation could increase the sample size. Additionally, obtaining complete responses for the online questionnaire was a major challenge. Obtaining access to respondents was also a challenge because most digital platforms, such as PeoplePerHour, Upwork, restrict access to contacts and conceal details of users of the platform. As a recommendation for future research, a stronger focus on implementing digital labour in impoverished communities, not just in South Africa but also in other Africa countries, would be of much value to digital labour research. Furthermore, our proposed and tentatively validated model (Fig. 2) would benefit substantially from a larger sample size for further validation and refinement.

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