

UNDERSTANDING WORKER RECRUITMENT AS A PRACTICE OF INFORMALITY IN CONSTRUCTION WORK PACKAGES

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Research into the recruitment of workers in construction tends to focus on the relationship between operating environments and informal recruitment of a worker. A second thread compares the informal and formal sector of the construction market. However, detailed understanding of how workers are hired and the role of objects in projects executed informally is limited. This study explores how objects feature when workers are engaged informally around specific work packages. A social practice approach is adopted, and practices enacted with workers recruited with minimal compliance to formal housing regulations are studied. Data is obtained through interviews and observations in a building project in Lafia, Nigeria. The results reveal that objects prefigured in hiring workers for different work packages which enabled construction practitioners to do four things: carry out a situated assessment, estimate the volume of work, negotiate verbal agreements, and coordinate work. This study argues that objects enable project parties to enter verbal agreements or invisible contracts.

Keywords: workers; recruitment; practices; objects; informality; construction projects

INTRODUCTION

Recruiting workers informally is a growing trend in developing and developed economies (Onyebueke and Geyer, 2011). According to Bonnet *et al.* (2019), two billion people are estimated to earn their living in the informal economy worldwide. Construction work is one of the most significant contributors to an economy and is often characterised by informal transactions that provide employment opportunities (Idoro and Bamidele, 2011). Some authors present informality as an economic activity carried out by people or firms who are not officially registered by a nation in a market where similar activities are registered. For example, Mlinga and Wells (2002) studied a market of contractors comprising registered and unregistered firms in Tanzania and their economic contributions. Other authors present informality as a system simply devoid of rules or regulations. For example, Wells (2007) reviewed studies on informality and compared definitions authors used with definitions adopted by conference participants. The author conceptualised informality as the absence of

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regulations and categorised informality into four aspects: informal enterprises, informal labour, informal construction system, and informal building/settlements. The author posits that construction is subject to a wide variety of regulations, therefore different interpretations of informality are inevitable. This raises questions on how informal workers are hired in the informal sector and how workers are organised when developing informal building/settlements. This informality tends to elevate the risk or uncertainty inherent in construction works that indirectly affect a project's completion. This is a concern to clients and managers who desire projects are completed on time, with quality and within budget and, who often resort to the informal construction system to hire workers with little compliance with formal housing regulations.

Recent authors present informality based on the source from which a worker is selected. For example, Dosumu *et al.* (2021) examined selection methods for informal workers in Rwanda and argued that the main source of recruitment is personal relationships, referrals, and informal work advertisements. The above authors show that the concept of informality is highly debateable. Two main themes in the construction management and economics literature dominate discussions on the existence of workers informally in construction. First, some studies focus on the relationships between the operating environment and informal recruitment that is quite superficial (Mlinga and Lema, 2000; Mitulla and Wachira, 2003). A second piece of literature compares workers in two sectors of the market system: formal and informal (Assaad, 1993; Mlinga and Wells, 2002). However, what is missing in the literature are investigations that explore how objects (i.e., documents, paperwork, or technologies) are used when workers are hired around work stages in projects executed informally. Therefore, this study aims to understand how objects are used to hire and organise workers informally in specific work packages in construction. Specifically, the objectives are (1) to explore what objects are used when workers are hired, (2) how did objects feature in the hiring process.

LITERATURE REVIEW

Operating or Economic Environment and Informal Recruitment

A dominant thread in the literature is the assumption that there is a relationship between the operating or economic environment and recruitment of workers in construction. Mlinga and Lema (2000), Mitulla and Wachira (2003), Behtoui (2008), Bohn and Owens (2012) share this assumption and argue that workers or contractors operate informally because this option is available, cheaper and requires little or no experience. For example, Mlinga and Lema (2000) examined the operating environment of informal contractors in Tanzania and their reasons for not legalising their businesses. Their results indicated that the informal sector had four significant problems: a lack of capital, limited technical and commercial skills, and an insecure operating environment. They claim that many contractors operate informally because they can escape it. In the same way, Mitulla and Wachira (2003) focused on the operating conditions of informal workers and recruitment trends of construction workers in Kenya in formal and informal project sites. Their result showed that most construction workers were hired informally through subcontractors and intermediaries for short periods. They claim that experience and reputation were required for workers employed based on verbal contracts and most workers moved between formal and informal employment depending on the availability of employment.

In contrast to a focus on the operating environment of workers in Africa, Behtoui (2008) focused on economic conditions in Sweden and the extent to which economic conditions affected three employment methods (formal, informal, and direct application). The author correlated the employment ratio with informal methods of employment and the informal employment methods with the wages of natives and immigrants. The results showed that immigrants are less likely to find jobs through informal methods. The author claimed that jobs found through informal methods pay better for immigrants. Building on this work, Bohn and Owens (2012) focused on the relationship between the growth in immigration and the growth in informal recruitment in the United States. They correlated estimates of informal paid employment with the changes in immigration population. They found that immigration and informal employment are statistically significant when prevailing wages are low. The author claims that high concentrations of low-skilled male immigrants have higher levels of informal employment in the construction industry.

It can be seen from the studies above that there is a link between operating difficulties, economic conditions and the recruitment of workers in different continents. The above authors argue that workers and contractors operate informally because this option is cheaper and requires little or no experience. However, these studies do not consider the role of objects in the hiring process of specific work packages.

Employment Methods and Trends in the Market: Formal and Informal

This section assumes that different employment methods in the market system work differently. Assaad (1993), Wells (2001) share this assumption and explore differences between the formal and informal market system. For example, Assaad (1993) explored how the labour market works in construction and compared the role of three formal and informal labour institutions that serve similar functions in Egypt, namely: (a) employment contracts and casual labour relationships, (b) vocational training programs and apprenticeships, (c) trade unions and construction workers. The author claim that the usefulness of formal institutions depends on the context, and informal labour markets are structured to work differently with institutional ties such as customary norms passed from master to apprentice, group cohesion or solidarity and social networks, which is significantly more critical in shaping labour market relations. In the same way, Wells (2001) compared trends in the formal or informal market in construction using data on construction output, per capita GDP, and private/public work index in Kenya and found a 75% decline in private/public building output completed with 24% increase in cement consumption and 30% increase in employment in Kenya's construction sector. The author claims that the upward rise of employment in the construction sector despite fall in the volume of work passing through the formally organised construction system is because of an expansion in unrecorded building activity (i.e., informal construction).

The above studies compare institutions and trends in the formal/ informal construction market and argue that the way workers and construction activities are organised (i.e., structured) with unregistered firms, unrecorded building activity and informal agreements in the informal market is different from the formal market. However, these studies do not consider an objects' role in rewarding workers informally in construction.

The Role of Objects in Shaping Processes of Production and Collective Action

In contrast to a positivist approach, objects or artefacts can actively shape processes of production. This is the argument of authors who adopt actor-network theory and

explored the role of objects in developing complex products or designs. For example, Bechky (2003) explored the role of engineering drawings in producing semiconductors. The author found that the understanding of engineering drawings changes to fit the local environments of three groups (technicians, engineers, and assemblers). The author claims that the understanding of individuals in a group changes across the activities in each environment, generating a deeper understanding of the product and knowledge process within the organisation. This is useful in exploring how the understanding of objects changes as they move between worker and employer. Similarly, Whyte *et al.* (2007) compared groups in a manufacturing firm with an architectural firm to understand how objects (i.e., models, working drawings and programmes) are used across similar design settings and time. They discovered that time-related changes are associated with how various objects are used and that objects were treated or held in a fixed or changing form. They claim that objects are treated as fixed or changing when used collectively to make sense in production.

Other authors adopt practice theory and explore established way of doing things with objects. For example, Orlikowski (2002) explored the role of plans in developing products in an organisation dispersed across 5 continents. The author observed that members of the organisation used plans to interact face to face and align effort to be consistent across space and time. The author claims that members used plans to develop collective capabilities in distributed and creative production competently. This is useful in exploring objects used in face-to-face recruitment and aligning efforts in construction. Similarly, Jarzabkowski *et al.* (2013) focused on the role of artefacts (pictures, maps and spreadsheets) in appraising insurance deals by managers of an organisation. They found that managers used artefacts to represent or appraise work and claim that managers use artefacts to develop knowledge in the appraising process to select a deal. This is useful in investigating how objects are used to appraise works and hire a worker. The above studies suggest that artefacts can be used to develop knowledge and collectively work or take decisions.

Adopting a Social Practice Lens

This study adopts a practice lens to explore the role of objects when workers are hired informally to execute specific work packages. The advantage of this lens is that a social practice approach, according to Shove *et al.* (2012) accounts for the practices (i.e., sayings and doings) enacted every day by people that use objects to organise construction work. The decision to use practice theory instead of the actor-network theory is because a social practice approach focuses on established way of hiring workers recruited informally in construction work and sheds light on the objects mobilised and actions at specific incidents.

METHOD

This study employs a qualitative approach with a case study to understand how objects figured in recruiting workers informally in a building project. The study was conducted in Lafia, Nasarawa state, Nigeria. Nigeria was selected because of the potential for informal practices in recruitment.

Research Setting- Two-Bedroom Semi-Detached Residential Building in Lafia

In 2021, a client who is a civil servant in Gombe hired a project developer to oversee the design and construction of two-bedroom semi-detached units in Lafia. The developer was a female civil engineer that did not operate a registered construction firm. The developer hired a labour contractor in Lafia to prepare architectural

drawings. However, the drawing was discontinued because the fee was high. The labour contractor did not want to lose the business opportunity and offered to prepare a sketch (figure 1) instead so that the client can begin construction. The labour contractor completed the sketch of the plan and sent a picture of the sketch to the developer that was approved. The client told the developer to keep records of expenditure for the project. Unfortunately, at the end of 2021 the developer passed away and the client hired an architect to continue. The project was interrupted several times and continued until March 2022.

Data was collected through observations and semi-structured interviews. Semi-structured interviews were chosen instead of questionnaires so that interviewees can express themselves. The participants interviewed are (1) the client, (2) an architect and (3) a carpenter. The interview questions probed: what objects are used, who uses them and (3) when. During the observations, the authors spent one to two days a week on the field taking notes. The analysis focused on interactions between six participants: client, labour-contractor, project developer, construction manager, architect, carpenters.

FINDINGS

Objects Used in the Recruitment Process of Construction Workers

Five objects were used by participants in three stages that involved hiring construction workers: (1) substructure stage, (2) superstructure stage, (3) roofing stage. The objects include: a sketch of the floor plan, handwritten record book, estimates of the roof, a sketch of roof and mobile phones. Similarities and differences were found in the role of objects in different work packages and instances.

Objects used at the substructure

Three objects were used between (February - March 2021) to set out the building, excavate trenches, place concrete/block work in the foundation. The objects are: (1) a hand drawn sketch of the floor plan, (2) handwritten record book, (3) and mobile phones. The objects featured in hiring the developer, labour contractor and workers.

In February 2021, the client phoned and hired a developer to design a two-bedroom semi-detached flats for his land in Lafia. The developer sent pictures of a design for a recently completed two bedrooms to the client with her mobile phone and proposed a similar design with bigger rooms sizes and the client agreed. This illustrates how the mobile phone enabled a client and the developer to begin discussions and share knowledge from different locations. This finding is like that of Molony's (2008) study, as mobile phones featured in securing work. Afterwards, the developer hired the labour contractor in Lafia to prepare architectural drawings for two-bedroom units. The labour contractor offered to prepare the detailed drawings for N130,000 (\$167.42), but the developer pushed back on the amount as it was high. The labour contractor did not want to lose the business opportunity to supervise the construction and offered to prepare a sketch. This illustrates how the choice on how to represent the design was instrumental in hiring the labour contractor.

The labour contractor did a sketch of the floor plan with a pen for one unit of the semi-detached two-bedroom. He snapped the sketch and sent it with his phone to the developer. She also sent the same sketch to the client who was 1 hour away in Gombe. The client hired the developer to start the substructure with the sketch and sent N1,500,000(\$1931.7) to buy blocks, sand and cement. The client told the developer to keep records of expenditure and paid the developer 5% of money

received as a fee. This illustrates how the sketch featured in hiring the developer to initiate the substructure. This finding like that of Ewenstein and Whyte (2009) study as sketches featured in the design phase. Also, the phone enabled parties at different locations to gain support and agree. The developer hired labourers to clear the site and negotiated with the labour contractor to set out the building. The labour contractor requested for N50,000(\$64.4), but the developer pushed back on the amount and suggested N20,000(\$25.8) which he accepted. The labour contractor used the sketch in Figure 1 to coordinate the labourers hired to dig the trench locations marked. This shows how the sketch figured in hiring the labour contractor to set out the two-bedroom units. Afterwards, the developer hired the labour contractor at N20,000(\$25.8) to coordinate a gang of workers to place concrete and blocks in the trenches. In March 2021, the developer hired workers to backfill and cast the oversite concrete to complete the substructure. The developer kept a record of daily expenditure and used her mobile phone to send a record to the client. This illustrates how the sketch and the record were used to coordinate the labour contractor/workers and capture verbal agreements between parties in the substructure.

Object used at the superstructure

Three objects were used to construct walls and lintels in the superstructure: (1) hand drawn sketch of the floor plan, (2) mobile phones and (3) handwritten record book. The objects featured in hiring the project developer, the labour contractor, a construction manager, and workers. In March 2021, the developer hired the labour contractor to supervise the construction of walls at N20,000(\$25.8). The labour contractor used the sketch of the floor plan to set out the locations of the windows and doors. In April 2021, the developer stopped working due to limited funds. In May 2021, the developer resumed works but stopped hiring the labour contractor and continued to construct the lintels. The developer invited carpenter-03 to install formwork for lintels on site. Carpenter-03 assessed the structure and proposed to complete the work in two stages at N25,000(\$32.2) to minimise wasting timber. However, carpenter-03 had difficult positioning the formwork at the front of the building because it cantilevered. The developer phoned a construction manager, showed him the sketch and hired him at N20,000(\$25.8) to assist the carpenter-03 to fix the formwork. This illustrates how the sketch prefigured in the hiring the construction manager and carpenter-03. The developer also hired the construction manager to coordinate the fixing of reinforcements and hired an iron fixer at N15,000(\$19.3). The construction manager instructed the iron fixer and workers who scarcely complied with formal safety standards on how to place the reinforcements in the formwork before casting the lintels. This shows how verbal contracts were enacted in hiring process of workers. In August 2021, the developer stopped hiring the construction manager and continued to build the walls above the lintel. The developer kept records of expenditure and shared it with the client.

Objects used at the roofing stage

Two objects were used to install the roof: (1) a roof sketch, (2) estimates. The objects featured in hiring an architect and a carpenter. In December 2021, the developer passed away and construction stopped for 4 months. In March 2022, the client sent the sketch of the floor plan (figure 1) to the architect and hired him from Gombe to supervise the installation of a roof. When the architect was hired, he said:

“I saw the hand drawn sketch of the floor plan that was sent to my phone and noticed that the sketch was a bit different from what was built. The measurements are same except for the last bedroom. In the sketch, the last bedroom protruded out by 600mm, but on site it aligned together with the first bedroom.”

This means that the sketch enabled the client and the architect to share or convey complex details about the project.



Figure 1: Hand drawn sketch of the floor plan of the two-bedroom unit

The architect used the sketch as a reference to compare what was intended with existing to continue from where the developer had stopped. This suggests that the sketch enabled continuity in the work. The client and the architect travelled to Lafia and invited carpenter-01 to the site. They asked carpenter-01 to develop an estimate for the roof. Carpenter-01 examined the work and wrote down an estimate for the roofing (see Figure 3). Carpenter-01 assumed the client wanted a hipped roof and this is illustrated when the architect said:

“Carpenter-01 gave an estimate and assumed we were going to use a hipped roof. I looked at the building and saw that there were no columns at the corners and roof beams. Putting a hipped roof over that structure may cause cracks because of the weight. So, putting that whole weight of the roof on that building is a very big risk.

This shows that carpenter-01 used the estimate to capture his understanding of a roof design that evolved as the estimate were examined. The estimate served as a basis for deciding to hire or not hire. Carpenter-01 presented an estimate of N1,645,000 (\$2118.5) that was rejected because this was very high. The architect invited another carpenter-02 to the site to produce an estimate for the roof. Carpenter-02 examined the structure and drafted an estimate (see figure 2) for the roof with a pen and paper. Carpenter-02 also assumed a hipped roof in developing his estimate of N1,531,000 (\$1971.7). The client and the architect compared the estimates from the two carpenters and saw that both were expensive. The architect began to think of an alternative roof design to reduce the cost and sketched a lean-to-roof (see figure 3) on a paper. This is illustrated when the architect said:

“We invited another carpenter to give an estimate. We found out that carpenter-02 price was similar compared to carpenter-01. We looked at his estimate and saw that both prices were high. I told the client why we don’t consider a simpler option.”

This shows that the estimates from the two carpenters were used to change the roof design to a simpler roof design that was cheaper. This suggests that a new design of the roof evolved through estimates. This process is also further illustrated when the client said:

“We got a quotation from another carpenter in Lafia that also assumed we wanted a hipped roof. The architect suggested that we change to a lean-to-roof design. He used a pen to sketch and calculate the requirements to explain why this design was better”.

This suggests that estimates served as a basis for initiating change and resolving tension between design and cost. This is illustrated when the architect said:

“I said let us adopt a lean-to-roof system and seal the building on all sides except behind for water go out. This reduced the risk of wind blowing off the roof and

minimised the material required compared to a hipped roof. The bill for a hipped roof was about N1.7 million, but when we did the calculation of the new roof design. I don't think we are going to spend that amount. I knew the angle to position roof trusses, the trusses on each unit, their lengths and the highest point. I converted them to linear meter based on what is in the market and arrived at the number required''

This shows that the sketch enabled the architect to reduce the materials required for the roof. After the architect explained the new roof design to carpenter-01, a new installation fee was negotiated. This is illustrated when carpenter-01 said:

“They went to buy the timber themselves. We agreed on a new bill to install the roof. I accepted to fix the roof for N70,000 because the new design is less work and does not require plenty material. It is the volume of material that determines the bill. If the material required is high, I will submit a higher fee. We finished the roof in three days and five people worked on site each day. We fixed the roof cover on the third day”

This show that the roof sketch enabled carpenter-01 and the architect to reduce the volume of work and installation fee and is evidenced when the client said:

“We travelled to Lafia to buy timber and called carpenter-01 to meet us at the site. When he came, we discussed how much for the work and the architect used the roof sketch to explain how to install the roof. When carpenter-01 was not clear on measurements and positions of roof members, the architect explained to him because the roof design is not so difficult”

This shows that the roof sketch enabled the client, carpenter-01 and architect to develop a shared understanding to install the roof evidenced when the architect said:

“Without that sketch, we wouldn't know how to hire carpenter-01. When we negotiated the cost of labour, carpenter-01 said he needed three days and five carpenters to assist him. We kept arguing until we agreed on N70,000 for the work and it was a verbal agreement. We told him that when he commences, we would give him N25,000, and then after completing the work we would give him another N25,000. N20,000 was the last payment to install the roofing sheets”

This illustrates that the roof sketch facilitated negotiations without clearly written agreements and mode of payment for carpenter-01 to install the roof.



Figure 2: Estimates from carpenter-01 and carpenter-02 for the roof

Rhythms in Recruitment Practices and How Objects Figured

The result show similarities and differences in the role of objects for different work packages and instances. In the substructure and superstructure, the sketch of the building was partially dimensioned. Majority of the workers were not familiar with the dimensions in work packages and the bill for executing work packages was open for negotiation in the hiring process. The sketch of the plan and handwritten records were the main objects used to consider temporal issues that involved managing the material or labour component of a work package. In the roofing stage, the roof sketch was also partially dimensioned. The workers were interested in the dimensions at this stage and the bill for executing the roof was also open for negotiation in the hiring process. The roof sketch and estimates were the main objects used to interrogate the cost components of a roof.

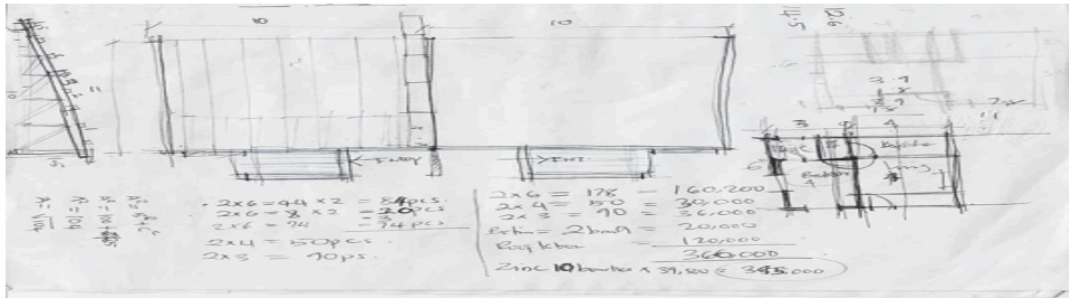


Figure 3: Hand drawn sketch of the lean-to-roof design and material calculations

In the work stages, objects were treated in some instances as fluid and changing, and at other instances as frozen and unchanged. The objects were categorised as fluid or changing when used in negotiations to hire workers and, frozen and unchanged when used to execute work packages. The objects enabled participants to do four main things: 1. Physically examine work packages: the stages show that objects enabled participants at different times to do a situated assessment of work packages. 2. Estimate a work package: the stages show that workers at different moments used objects to make verbal and skeletal estimates of work packages that were rejected, revised, or accepted. A similar phenomenon can be seen in Ewenstein and Whyte (2009) study on the role of sketches /drawings in developing designs that were constantly unfolding. 3. Negotiate with verbal agreements: the stages show that participants at different incidents used objects to negotiate prices, resolve tension between the design and cost of work packages and enter verbal agreements. A similar phenomenon can be seen in Tryggestad *et al.* (2010) study on the role of objects in resolving tensions between aesthetic and functional interests. 4. A map to guide in coordinating work: the stages show that project parties at different moments used objects to coordinate work.

CONCLUSION

The study aimed at showing how objects are used when recruiting workers informally in specific work packages. The study found that objects are not non-existent or passive tools in the hiring process. The analysis of the interactions suggests that informal recruitment is prevalent and objects at different stages of a project enabled participants to carry out a situated assessment, estimate the volume of work, negotiate verbal agreements, and coordinate hired workers. The results do not suggest that objects alone are embodiments of complex knowledge that hired workers. Rather, the analysis reveals that objects enabled project parties at various instances to enter verbal agreements with several workers that were hired to execute work packages. This study contributes with an explanation of informal recruitment process and unpacks the mechanisms of informal practices in hiring workers. The study shows a relationship between non-compliance and informal development.

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