

AN EXAMINATION INTO THE CURRENT STATUS OF ADJUDICATION PRACTICE ON PUBLIC SECTOR CONSTRUCTION CONTRACTS IN SOUTH AFRICA

M.C Mewomo¹,
Professor M.J Maritz²

^{1,2}Department of Construction Economics, University of Pretoria, South Africa, ¹modupemewomo@up.ac.za, ²tinus.maritz@up.ac.za +27-124202581.

PURPOSE: This paper discusses the existing adjudication provisions in the standard forms of contract, review current practices of contractual adjudication and thereafter evaluate the potential of adjudication as an alternative dispute resolution process in resolving disputes among public sector contracting parties.

ABSTRACT

Purpose

The concept of adjudication is no longer new in the South African construction space. All the modern forms of contract in use incorporate adjudication as a standard form of dispute resolution. However, a careful observation indicates that sufficient attention has not been given to adopting the adjudication provisions by contracting parties on public sector projects. This paper discusses the existing adjudication provisions in the standard forms of contract, review current practices of contractual adjudication and thereafter evaluate the potential of adjudication as an alternative dispute resolution process in resolving disputes among public sector contracting parties.

Design/methodology

The paper analyses the current status of adjudication practice in South Africa by systematically reviewing selected articles and documents on both contractual and statutory adjudication with emphasis on the South African construction industry. The methodology involves the examination and analysis of selected documents and published literatures.

Findings

The analysis of the selected documents reveals that there are adequate provisions for adjudication in the current forms of contract endorsed for usage in the South African construction industry. However, the public sector contracting parties rarely invoke adjudication provisions when disputes arise. This paper therefore provides a future direction by indicating the need to identify the constraints to effective adoption and invocation of adjudication provisions by public sector contracting parties.

Original/value of paper

The study adds to the body of knowledge by creating an insight into the potential of adjudication in resolving disputes among public sector contracting parties in South Africa. The study also alerts the industry to give adequate consideration to factors that can promote more effective usage of adjudication provisions by public sector contracting parties.

Keywords:

Adjudication, disputes, public sector, South Africa

INTRODUCTION

The importance of the construction industry in any country cannot be overemphasised. One of the indices for measuring the economic development of countries is the rate of construction activities and performance of their construction industry. This construction performance is a factor of industry-wide effectiveness and efficiency ¹. As such, the construction performance basically relies on active participation of contracting parties and enabling environment for effective delivery of projects within the stipulated time. Disputes among contracting parties sometimes arise, hampering the smooth operation of construction projects and thereby jeopardizing the industry performance. Globally, the incidences of disputes in the construction industry have had different consequences on construction projects which range from delay in project progress to utter abandonment of construction projects ². In fact, disputes have also been associated with poor construction work, project failures, complicated litigations, financial loss used in securing legal services and other adversarial relationships among construction professionals ^{2, 3, 4, 5}. Unfortunately, this unpleasant situation has portrayed the construction industry with a reputation of being ineffective, contentious and adversarial, predominantly with regards to the relationship between the main

Table 1 : The survey respondents (CII reports)

| Respondents/Year | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 |
|--------------------------|------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Client | 114 | 282 | 332 | 434 | 592 | 498 | 374 | 535 |
| Contractor/subcontractor | 219 | 1209 | 1169 | 1053 | 1300 | 1006 | 886 | 1519 |
| Total | 333 | 1486 | 1501 | 1487 | 1892 | 1504 | 1260 | 2054 |

Source: ^{16, 17, 18, 19, 20, 21, 22, 23}

contractors and subcontractors ⁶. The adversarial relationship among construction professionals is often acute, particularly on public sector projects due to lack of alternative dispute resolution (ADR) mechanisms ¹. These unfavourable relations also impact negatively on the overall cost of construction. Consequently, several construction stakeholders have advocated that something must be done in order to circumvent the situation ^{7, 8}. Unfortunately, the great expense of the traditional methods of disputes resolution (usually litigation and arbitration) has often discouraged small and emerging contractors from pursuing their legitimate right and as a result, they suffer financially ⁶. Thus, the challenges and frustrations associated with litigation and arbitration in resolving construction disputes have necessitated an increased demand for ADR and triggered the introduction of adjudication into the construction industry.

The Emergence Of Adjudication As An ADR Mechanism In South Africa

The South African construction industry is recognised as very large, diverse and complex in nature ⁹ with varied activities which bring together a variety of different professionals. The industry plays a vital role in South Africa's economic and social development. However, the industry is particularly plagued by payment defaults which have been reported to be a chronic problem affecting the delivery chain ¹⁰. The unpredictability of payments has in certain instances resulted in an extremely negative contracting environment ¹¹ and as such, disputes are not uncommon within the industry. Disputes have a significant effect and impacts on growth negatively and performance of the industry. In addition, the traditional means of resolving the construction disputes have not helped the matter as the time and cost associated with litigation and arbitration make the process undesirable. Hence, there have been concerns on how to strengthen the industry to face the present and future challenges. One of the efforts to face the challenges led to the promulgation of the White Paper entitled "Creating an Enabling Environment for Reconstruction, Growth and Development in the Construction Industry" ¹².

The White Paper provides a scheme that enables the construction industry to play a more strategic role in the socio-economic growth of the nation. It sets out Government's plans and vision for an enabling strategy aimed at enhanced service delivery, greater stability, improved industry performance, value for money and the growth of the emerging sector. It further focused the need for improved public sector capacity to manage the construction delivery process. The paper further recommended the establishment of an industry caretaker known as Construction Industry Development Board (CIDB) with the mandate to champion the process of creating an enabling environment in order to promote the industry at large.

Having recognized the entrenchment of ADR procedures for resolving labour disputes in the Labour Relations Act No. 66 of 1995 and the successful application of ADR procedures in the private sector, the CIDB in the 1999 White Paper to the Minister of Public Works, recommended the use of ADR, in particular adjudication, as litigation and arbitration were observed to be time consuming and costly leading to small and emerging

contractors' vulnerability in the event of major disputes arising. Hence, contractual adjudication was formally introduced to South Africa through the efforts of CIDB. In addition, the CIDB endorsed four forms of contracts documents namely, Federation Internationale Des Ingenieurs Conseils (FIDIC), New Engineering Contract (NEC), Joint Building Contracts Committee (JBCC) and General Condition of Contracts (GCC), all of which make provision for adjudication.

RESEARCH METHODOLOGY

This paper aims at evaluating the potential of adjudication as an ADR process in resolving disputes among public sector contracting parties in South Africa. In order to achieve the aim, the methodology employed included the examination and analysis of selected documents related to adjudication practice in South Africa. According to ¹³ this type of methodology approach is very advantageous because it provides the means of tracking changes and development as well as revealing the clear picture of how an organization or a program fares over time. This methodology approach has been used in quite a number of previous researches with the purpose of providing a future direction on an important issue ^{6, 14}. In order to provide an overview of the South African construction industry and determine its current status the study examines selected documents comprising of:

- Journals, books, and published literatures related to adjudication practice in South Africa;
- The CIDB endorsed standard conditions of contracts namely; the FIDIC, NEC, JBCC and GCC.
- A nationwide annual CIDB Survey known as Construction Industry Indicators (CIIs). The CII survey related to the completed projects between the period of year 2007 and 2014 were selected and evaluated. The survey involves the participation of the clients and contractors from all nine provinces in South Africa as indicated in **Table 1**.

RESEARCH DISCUSSION

The CII survey measures the performance of the construction industry, focusing on clients, contractors and other industry stakeholders. The importance of the survey cannot be underestimated because the survey connotes an aggregated view and perception of different industry stakeholders across the whole nine provinces of South Africa. The findings from the survey reveals continuous and increasing deterioration in both payment culture and management of disputes within the South African construction sector ^{15, 16, 17, 18, 19, 20, 21, 22, 23}. In fact, nothing less than 65% of the subcontractors in South Africa who are supposed to be protected by the adjudication mechanism have claimed to have experienced delayed payment ²⁴. The subcontractors also reported that this delay in payment has been the root cause of disputes within the South Africa construction industry ²⁴. Surprisingly, these subcontractors have been rather passive in invoking the adjudication provisions to address the issue. This situation has been particularly worse with public

sector construction contracts in South Africa. These findings therefore call for a need to determining the factors constraining the adoption of adjudication provisions among public sector contracting parties.

ADJUDICATION PROVISIONS IN THE STANDARD FORMS OF CONSTRUCTION CONTRACT

Currently, South Africa has four CIDB endorsed standard forms of construction contracts for both public and private sector construction works. Two of the forms are internationally developed (FIDIC, and NEC3) and the other two are home grown (GCC and JBCC). The contractual adjudication process has for some time now found a place in the two home grown standard form of building contracts in use in South Africa (GCC and JBCC), into which the adjudication process was introduced for the first time in 2004. As with many jurisdictions, the standard forms have undergone some amendments since its introduction into the construction practice in South Africa. The latest versions of the four standard forms are the JBCC 2014 edition 6.1, the GCC 2014 2nd edition (Revised), the NEC3 2005, 3rd edition and the FIDIC 1999 1st edition. In the current version of the forms, adjudication provisions are found under clause 30 of JBCC; clause 10.5 of GCC, Option W1 of NEC 3 and clause 20 of FIDIC. Each of the forms adopts a standard adjudication procedure. The GCC makes use of the CIDB adjudication procedures, The JBCC applies its own adjudication rules, The NEC provides for two adjudication procedures (Option W1 and W2) because of United Kingdom (UK) statutory requirements for adjudication. Option W2 is the Act compliant procedure for use in contracts subject to the UK's Act while option W1 is the NEC procedure applicable in South Africa. The FIDIC makes use of its own general conditions and procedural rules for adjudication. It is important to know that all the adjudication procedures needs to align with the principles underpinning adjudication in South Africa. Drawing some comparison from the four forms of contracts, the following points are observable:

Appointment:

The parties are to jointly appoint the adjudicator or Dispute Adjudication Board (DAB) by mutual agreement or by a named authority either at the beginning of the contract (standing adjudicator), or when disputes arise (ad hoc adjudication). The adjudicator's agreement is a tripartite agreement and must be co-signed by the employer, contractor and the adjudicator / adjudicators

Terms of appointment and conduct of adjudication:

The adjudicator is required to act fairly and impartially in accordance with the rules of natural justice. He is expected to act independently of the parties and treat all matters as confidential.

Procedure:

The adjudication process is not to be conducted as an arbitration. The adjudicator is permitted to decide on the procedure to be followed in adjudication. He is authorized to use his own initiative to ascertain the facts and laws necessary to determine the dispute. The adjudicator may use his own expert knowledge, order any interrogation, require /limit further submission of documents or decide on the language to use in the adjudication. The adjudicator can also conduct a hearing (though not usually encouraged) or call for meetings, carry out site visits and inspections as he/she considers being appropriate, carry out any test and experiment and can appoint an independent expert upon receiving the consent of the parties.

Determination:

The adjudicator is to reach a fair, rapid and inexpensive determination of a dispute arising under the contract. The

decision of the adjudicator shall be in writing, containing the reasons for his /her decisions if requested by any of the parties. He /she shall determine the amount that any of the parties is liable to pay to the other, the date the payment is to be given and other matters regarding the rights and obligations of the parties. The adjudicator on his own or upon the application of any of the parties may correct his /her decision so as to remove any clerical or typographical error arising by accident or omission within five days of the delivery of the decision to the parties. The corrected decision must be sent to the parties as soon as possible. The adjudicator's decision is binding and the parties must give effect to it regardless of any intention to take the adjudicator's decision on review or arbitration.

Payment:

The parties shall implement the adjudicator's decision without delay whether or not the dispute is to be referred to legal proceedings or arbitration. Payment (if applicable) shall be made in accordance with the payment provisions in the contract.

Miscellaneous:

The adjudicator is not liable for any act or omission in the cause of discharging his duty except if the act is done in bad faith. Evaluating these provisions, several factors have to be considered in order to reach a fair, rapid and inexpensive decision. Some of the provisions discourage any form of delay tactics which can hamper the progress of construction work.

- (i) The provisions require that there should be strict adherence to the time period specified under the procedure. Any extension to the time must be jointly agreed upon by the parties. The strict time frame in each of the procedures is to avoid delay. Although the time frame in JBCC is different from that of FIDIC and the other forms of contract, the procedure in the provisions is to allow for quick resolution.
- (ii) The decision of the adjudicator is immediately binding regardless of any intention to take the decision on review or on arbitration. It is therefore clear that the fact that prompt effect is to be given to the decision does not give room for any delay in project execution. In fact, the provisions require that parties should continue with their obligations in terms of the agreement, notwithstanding the disagreement between them.
- (iii) The parties are expected to comply with any request or direction of the adjudicator in the adjudication process. In case of default by any of the parties without a reasonable cause, the adjudicator may continue the adjudication in the absence of the party or the documents requested and take decision on the basis of information before him or her. This is to avoid the use of delay tactics by one party which may affect the speedy resolution of the dispute.

Looking at the provisions of the different forms of contract, the findings of ²⁵ that there are sufficient contractual provisions for effective practice of adjudication in the CIDB recommended forms of contract can be regarded as valid.

THE CURRENT PRACTICES OF ADJUDICATION AS ADR IN SOUTH AFRICA

As a matter of practice within the South African construction industry, the obligation to adjudicate is based on contractual agreement. This is different from the practice in the UK where

where adjudication is a creation of legislation, through the introduction of Housing Grant, Construction and Regeneration (HGCR) Act (1996)²⁶. The Act provides statutory right to either of the parties to invoke adjudication unilaterally. However, the adoption of adjudication provision in South Africa is by agreement between the parties as recorded in the construction contract agreement. The practice of contractual adjudication is not without some limitations. Of course, contractual adjudication have been in use in the 1980's but never widely accepted due to certain constraints²⁷. Some of the limitations include power disparity between the contracting parties and fear of losing future jobs by the weaker party. Lack of willingness of the weaker contracting parties to commence adjudication proceedings was a concern at the time of its introduction²⁸. The major concern of the weaker party (mostly the sub-contractor) was the fear of being denied future opportunity to tender for work²⁹. In effect, contractual adjudication was not widely used during pre-statutory era because its usage depends on the negotiating strength of the parties²⁷. This had led to the advocacy that adjudication has to be compulsory in order to have real impact so that powerful contracting parties would not strike it out from the contract they make²⁷.

In addition to the aforementioned limitations is the problem that arises when adjudication is not being adopted as a primary resolution mechanism. For instance, in Hong Kong, just like the case in South Africa, there is no statutory right to adjudicate. Adjudication is just one of the three tiered disputes resolution mechanisms which can only be invoked by agreement between the contracting parties. Therefore, the take up of adjudication was limited due to the fact that it can only be adopted at secondary level following mediation³⁰. However, this limitation has been addressed in many countries by making adjudication a creation of law. Following UK HGCR Act (1996), countries like Australia, New Zealand, and Singapore etc. have enacted similar legislation to back up the adjudication practice. At present, there is concerted effort within the South African construction industry to shift from contract based to statute based adjudication practices.

It is noteworthy that, despite all limitations associated with contractual adjudication, it has been adopted in the resolution of disputes in South Africa. Recent studies show that adjudication was effective in the cases where it has been employed^{31,32}. Even in the few cases where contracting parties had gone to court after adjudication (e.g. Basil Read (Pty) Ltd v Regent Devco (Pty) Ltd; Tubular Holding (Pty)Ltd v DBT Technologies; Esor Africa (Pty) v Bombela Civils), it was observed that most of the court rulings had aligned with the adjudicators' original judgments. In relation to this, the recent courts' support and robust approach in enforcing adjudicators' decisions has positively contributed to the increasing penetration of ad hoc adjudication into South African construction practice³².

OBSERVATIONS AND AREAS OF CONCERN

Recently, various researches have revealed that there is a growing preference for adjudication^{33,34}. For instance, many construction stakeholders would prefer the inclusion of adjudication as the priority in resolving a dispute before arbitration³⁵. Although both mediation and arbitration are effective, adjudication has advantages over mediation³⁴. In addition, it has been revealed that the construction industry stakeholders agreed that the introduction of adjudication will significantly reduce arbitration and litigation¹⁰. Based on the foregoing, it is expected that the use of adjudication would have increased significance in resolving disputes on public sector construction contracts when commonly applied as the first tier ADR process.

However, a thoughtful reflection of prevalent trends in the

construction industry revealed that the practice of adjudication in South Africa as an ADR process is limited to the private sector. This observation can be proved in two ways. First, by the numerous and increased complaints on payment default and other disputes (particularly on public sector projects) which adjudication provisions were originally intended to solve¹⁵. The CIDB CII results from 2007 to 2012 show a declining trend in prompt payment of public sector contractors which remains the major cause of dispute^{36,37}. Secondly, by the analysis of the few cases that eventually ended up in court after adjudication. For instance out of six cases that got to court between 2010 and 2014, five of the disputes were either between private employer and contractor, main contractor and sub-contractor and main sub-contractor and another sub-contractor. The only exception was the case between Freeman August Wilhelm N. O, Mathebula; Trihani Sitos de Sitos NO; v Eskom Holdings Limited of which Eskom is a public client. It can therefore be inferred that the public sector rarely invoke adjudication as an ADR process for its numerous disputes. Investigations reveal that litigation has remained the prevailing dispute resolution technique among public sector contracting parties in South Africa^{33,35}. It is therefore very disturbing that the advocacy of the CIDB that adjudication should be used to resolve disputes at both prime and subcontractor's level on both private and public sector contracts has not been implemented on public sector contracts. It can be easily deduced then that parties to public sector projects have very rarely invoked the adjudication provisions when disputes arise. This suggests that certain constraints or peculiarities are hampering the use of adjudication in public sector contracts. Something urgent must be done therefore to enable the public sector to tap into the benefit and prospects of adjudication.

FUTURE DIRECTIONS

The research review on adjudication practices in South Africa has identified future research directions as illustrated in Figure 1, and explained on the following page.

In line with the plan to introduce statutory adjudication in South Africa, the CIDB has recently prepared amended adjudication regulations that were gazetted for public comments in the Government Gazette Notice 482 of 2015¹¹. Once enacted, adjudication would carry legal enforcement within the South African construction industry. This development promises a better and greater result for the industry as far as dispute resolution is concerned. However, the potential inherent in the process of statutory adjudication would only be realized if the constraining factors to its effective usage are recognized and appropriate application measures are put in place. In effect, the empirical evidence of what should be done to achieve effective usage and pragmatic functionality of the practice of adjudication should be provided. The knowledge and outcome of such research will be of great benefit to all construction stakeholders.

CONCLUSION

The objectives of this paper are to discuss the existing adjudication provisions in the standard forms of contract, review current practices of contractual adjudication and thereafter evaluate adjudication potential in resolving disputes among public sector contracting parties. The literature reveals that contractual adjudication is no longer new in South Africa. The courts in South Africa have acknowledged the importance of this ADR alternative and have shown a robust approach towards enforcing adjudication decisions. In anticipation of a better performance of adjudication in South Africa, a draft regulation have been proposed to provide the statutory right to any party wishing to invoke adjudication provisions. However, the public sector has not tapped into the advantages of this

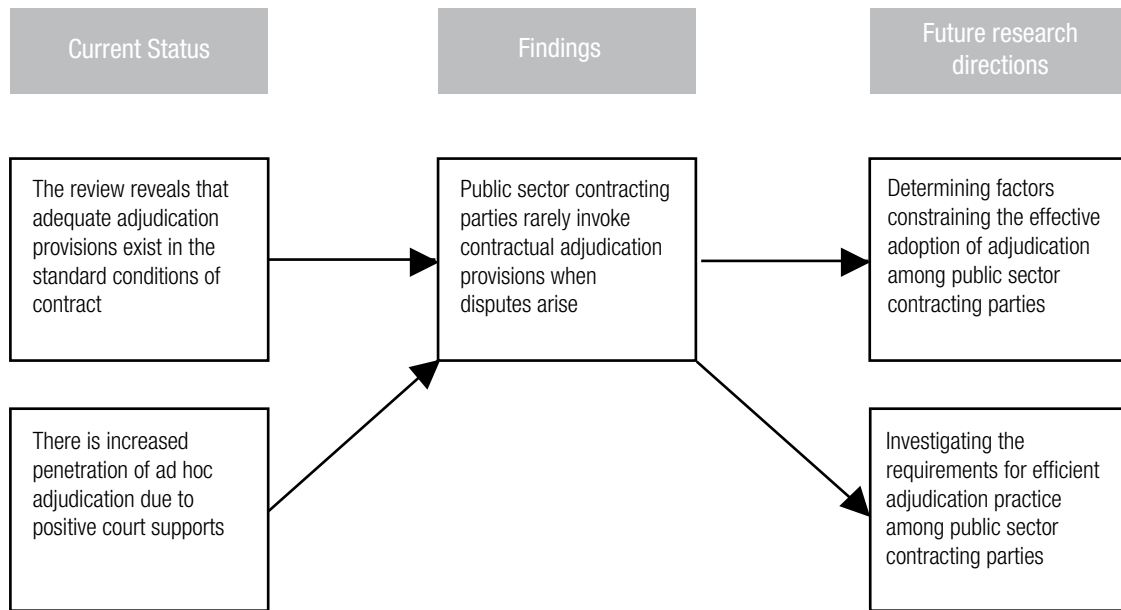


Figure 1: Current Status and future direction on adjudication practice among public sector construction contracting parties. Adapted from¹⁴.

mechanism. Therefore, the first finding of this paper is that there are sufficient adjudication provisions in the forms of contract conditions capable of mitigating dispute problems among public sector contracting parties. The second is that the public sector has to address its own constraints and confronts its limitations creatively in order to tap into the advantages of adjudication.

Lastly, the benefits and advantages of the present contractual adjudication and the proposed statutory adjudication can only be fully realized provided that adequate consideration is given to the special circumstances and limitations surrounding public sector contracts. These findings have thus necessitated the need for further research on how to implement statutory adjudication of disputes effectively on public sector projects.

REFERENCES

- 1 Department of Public Works, (1998) The Green Paper on "Creating an Enabling Environment for Reconstruction, Growth and Development in the Construction Industry", Prepared for the Minister of Public Works, Government Printing Works, Pretoria South Africa.
- 2 Harmon, K. M. J. (2003) Effectiveness of Dispute Review Boards, *Journal of Construction Engineering and Management* 129, 674-679.
- 3 Kumaraswamy, M. M. (1997) Common Categories and Causes of Construction Claims, *Construction Law Journal*, 13 (1), 21-34.
- 4 Cheung, S. O., Suen, H. C. H. and Lam, T. (2002) Fundamental of Alternative Disputes Resolution Process, *Construction Journal of Construction Engineering and Management* 409-417.
- 5 Cheung, S. O. and Pang, K. H. Y. (2013) Anatomy of Construction Disputes, *Journal of Construction Engineering and Management* 15-23.
- 6 Lynch, P. (2011) "HGCRA: Re-addressing Balance of Power between Main Contractors and Subcontractors? available at <http://www.nadr.co.uk/articles> , Downloaded on 8th October, 2015.
- 7 Cheung, S. O. and Yiu, T. W. (2006) Are construction disputes inevitable? *IEEE Transaction on Engineering Management*, 53 (3) 456-170
- 8 De Oliveira, M. (2011) The management of construction agreement in South Africa, CIB commission meeting in Law in Dispute Resolution in conjunction with international conference COBRA, Manchester (UK), Royal Institute of Chartered Surveyors RICS 267-272.
- 9 CETA, (2008) Construction Education Training Authority "Overview of construction sector, construction education and training authority" <http://www.ceta.org.za>
- 10 Maritz, M. J. (2007) An investigation into the Adjudication of Disputes in the South African Construction Industry, Conference proceedings of RICS COBRA CONGRESS September 2007, Atlanta USA 419-426
- 11 Thumbiran, I. (2015) Summary: Prompt Payment, A paper presented to adjudication delegates at the University of Pretoria
- 12 Department of Public Works, (1999) The White Paper on 'Creating an Enabling Environment for Reconstruction, Growth and Development in the Construction Industry', Prepared for the Minister of Public Works, Government Printing Works, Pretoria South Africa.
- 13 Bowen, G. A. (2009) Document Analysis as a Qualitative Research Method, *Qualitative Research Journal* 9 (2) pp. 27-40

- 14 Olanipekun, A. O. (2015) Successful Delivery of Green Building Projects: A Review and Future Directions, *Journal of Construction* 18 (1) pp. 30-40
- 15 CIDB, 2012, Construction Industry Development Board Annual report 2011/2012
- 16 CII (2007) The cidb Construction Industry Indicators Summary Results
- 17 CII (2008) The cidb Construction Industry Indicators Summary Results
- 18 CII (2009) The cidb Construction Industry Indicators Summary Results
- 19 CII (2010) The cidb Construction Industry Indicators Summary Results
- 20 CII (2011) The cidb Construction Industry Indicators Summary Results
- 21 CII (2012) The cidb Construction Industry Indicators Summary Results
- 22 CII (2013) The cidb Construction Industry Indicators Summary Results
- 23 CII (2014) The cidb Construction Industry Indicators Summary Results
- 24 CIDB, (2013) Sub contracting in the industry
- 25 Maiketso, N. C. & Maritz, M. J. (2009) What are the requirements for the South African construction industry to fully utilize adjudication? In *Proceedings of RICS COBRA Research Conference*, pp. 1556-1567
- 26 HGCRA, 1996, Housing Grant Construction & Regeneration Act, 1996
- 27 Gaitskell, R. (2007) International statutory adjudication: its development and impacts, *Management and Economics*, 25 (7) 777-784.
- 28 Kennedy, P., Morrison, A. and Mline, D. O. (1997) "Conflict between Main Contractors and Sub-contractors: The resolution of Disputes arising from the application of Set off", *Construction Management and Economics*, 15 (6), 527-537.
- 29 Kennedy, P. Miligan, J, Catttanach, L. and McCluskey, E. (2010) The Development of Statutory Adjudication in the UK and its Relationship with Construction Workload. COBRA proceedings of The Construction, Building and Real Estate Research Conference of the Royal Institute of Chartered Surveyors
- 30 Hill, T. and Wall, C. J. (2008) Adjudication: Temporary Binding and Tiered Dispute Resolution in Construction and Engineering: Hong Kong Experience.
- 31 Massey, E. (2014) Adjudication is working well in South Africa. *South African Builder* 34-36.
- 32 Hattingh, V. and Maritz, M. J. (2014) Adjudication: The South African Experience to Date. *South African Builder* 35-36.
- 33 Du Preez, O. and Verster, B. (2013) ADR Practice in the Construction Industry: a futuristic perspective, in *proceeding Law and Dispute*, International Council for Research and Innovation in Building and Construction 13-24.
- 34 Van der Merwe, C. J. (2009) Is adjudication a better procedure for construction disputes resolution than mediation? Unpublished dissertation submitted for the degree of BSc (Hons) (Quantity Surveying), University of Pretoria, Faculty of Engineering, Built Environment and Information Technology.
- 35 Bvumbe, C. and Thwala, D. W. (2011) An exploratory study of Dispute Resolution Methods in South African Construction Industry, *International Conference on Information and Finance* 21, 32-36.
- 36 CIDB, 2008, Construction Industry Development Board Indicators Summary Results
- 37 CIDB, 2012, Construction Industry Development Board Indicators Summary Results