Negotiating access into firms: obstacles and strategies


It is advisable to refer to the publisher's version if you intend to cite from the work. See Guidance on citing.

Publisher statement: © Danish Building Research Institute, Aalborg University. All rights reserved

All outputs in CentAUR are protected by Intellectual Property Rights law, including copyright law. Copyright and IPR is retained by the creators or other copyright holders. Terms and conditions for use of this material are defined in the End User Agreement.

www.reading.ac.uk/centaur

CentAUR
Central Archive at the University of Reading

Reading’s research outputs online
6th Nordic Conference on Construction Economics and Organisation – Shaping the Construction/Society Nexus

Volume 3: Construction in Society

Edited by:
Kim Haugbølle, Stefan Christoffer Gottlieb, Kalle E. Kähkönen, Ole Jonny Klakegg, Göran A. Lindahl & Kristian Widén

13-15 April 2011
Danish Society of Engineers Conference Centre, Copenhagen, Denmark

Edited by:
Kim Haugbølle, Stefan Christoffer Gottlieb, Kalle E. Kähkönen, Ole Jonny Klakegg, Göran A. Lindahl & Kristian Widén

ISBN: 978-87-563-1516-6 (Volume 1: Clients and Users)

Print: Rosendahls-Schultz Grafisk a/s
Cover photo: Jørgen True

Published by:
Danish Building Research Institute, Aalborg University
Dr. Neergaards Vej 15
DK-2970 Hørsholm
E-mail: sbi@sbi.dk
www.sbi.dk

© Danish Building Research Institute, Aalborg University
a) All rights reserved. No part of this publication may be reproduced in any form without the written permission of the copyright holder.
b) Authors of papers in these proceedings are authorised to use their own material freely.
c) Authors are encouraged to and may post and share their work online (e.g. in institutional repositories or on their website) at any point after the conference
d) Applications for the copyright holder's written permission to reproduce any part of this publication should be addressed to the Danish Building Research Institute, Aalborg University.
e) No responsibility is assumed by the publishers or the authors of individual chapters for any damage to property or persons as a result of operation or use of this publication and/or the information contained herein.

Contact:
Kim Haugbølle
Danish Building Research Institute, Aalborg University
Department of Construction and Heath
Dr. Neergaards Vej 15
D-2970 Hørsholm

Organising Committee’s declaration:
All the papers in these proceedings were double-blind refereed at abstract and full paper stage by members of the scientific committee. This process involved, detailed reading of the abstracts and papers, reporting of comments to authors, modifications of papers by authors and re-evaluation of re-submitted papers to ensure quality of content.
NEGOTIATING ACCESS INTO FIRMS: OBSTACLES AND STRATEGIES

Samuel Laryea
University of Reading, Reading
s.laryea@reading.ac.uk

Will Hughes
University of Reading, Reading
w.p.hughes@reading.ac.uk

Researchers often experience difficulties with the negotiation of access into firms for the purpose of data collection. The question we explore is: What are the main obstacles associated with access negotiation into firms; and what strategies do researchers employ to increase their chances of success? Our research work on the tendering process of contractors took place between 2006 and 2008. We successfully negotiated access into four firms (two each in Ghana and the UK) to observe live examples of tender preparation. The techniques we employed in negotiating access were personal contacts, contacting firms through online details and professional institutions, etc. With all of this effort, our average success rate was less than 5 per cent. The main obstacles encountered were firms’ reluctance because of commercial sensitiveness and fear that the data could eventually be divulged to their competitors or end up in the public domain. However, some firms agreed mainly because of the written assurances of confidentiality and anonymity in reporting the study; reputation of the researchers’ academic institution; gatekeepers who spoke to their colleagues on our behalf; academic purpose of the study; and a feedback report which was promised in return for access to the case studies. Although the access through personal contacts is by far the easiest, it is not always possible. Researchers can approach firms as complete strangers, especially in a foreign country, and that could make the firms more likely to assist the research.

KEYWORDS: access, access negotiation, data collection, Ghana, UK

INTRODUCTION

Researchers often experience difficulties with the negotiation of access into organisations for the purpose of data collection (as explained by Buchanan et al. in Bryman 1988). This is particularly common when the data required is sensitive in nature (Koosimile, 2002). The research literature shows that the negotiation of access into fieldwork settings is a subject that covers various academic disciplines (as demonstrated in research studies carried out by Reeves, 2010; Matthiesen and Richter, 2007; DeVerteuil, 2004; and Mintzberg, 1973). There are significant similarities in the access negotiation obstacles encountered by researchers working in different academic disciplines, for example management, psychology, geography and sociology. There is also significant similarity in the strategies used by the researchers to negotiate access. Thus, access negotiation is an interdisciplinary subject in research theory and practice. Insights from different fields can help to develop a better understanding of the obstacles and strategies of access negotiation into firms from different perspectives.
Between 2006 and 2008, we successfully negotiated access into four firms (two each in Ghana and the UK) to enable us to carry out a live observation of the whole tendering process of contractors in the tendering and estimating departments of firms (reported in Laryea and Hughes, 2011; Laryea and Hughes, 2008; and Laryea, 2008). The aim here is to discuss our access negotiation experiences. We explore the main obstacles associated with access negotiation into firms; and the strategies used by researchers, here and elsewhere in the literature, to increase the chances of success. For the purpose of this study, access negotiation is the process of dialogue between a researcher and the people in a target firm to enable the researcher to obtain access into the firm for the purpose of data collection using techniques including observation, analysis of documents and interviewing people.

A REVIEW OF STUDIES INVOLVING ACCESS NEGOTIATION

Matthiesen and Richter (2007) discussed nine areas to consider and delineate when planning for access negotiation into firms. These are: level of access required, target organisations, benefits to participants, sponsors, stakeholders, participants, data management, time and resources required to undertake the study. A clear and good grasp of these areas should help to increase the chances of success and make a good first contact with participants. Table 1 summarises some studies involving extensive access negotiation into fieldwork settings.

Table 1: Summary of some studies involving access negotiation

<table>
<thead>
<tr>
<th>Author(s)</th>
<th>Country</th>
<th>Research strategy, methods, etc.</th>
<th>Access negotiation obstacles</th>
<th>Access negotiation strategies</th>
<th>Time taken to negotiate access</th>
<th>Number of subjects or organisations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reeves, C.L.</td>
<td>UK</td>
<td>Case studies using interviews, participant observation</td>
<td>Layers of gatekeepers</td>
<td>Using gatekeepers, establishing rapport with people in the fieldwork setting</td>
<td>Six months</td>
<td>One hostel</td>
</tr>
<tr>
<td>Mora-Ríos, J. et al.</td>
<td>Mexico</td>
<td>Participant observation, free-association technique, interviews</td>
<td>Ethical considerations, obtaining informed consent</td>
<td>Initial contact, meeting community leaders, snowball technique</td>
<td>Not specified</td>
<td>One community in Mexico (48 interviews with people in the community)</td>
</tr>
<tr>
<td>DeVerteuil, G.</td>
<td>US</td>
<td>Interviews</td>
<td>Fractional divide, spatiotemporal limits</td>
<td>Spatial and temporal strategies (pp. 377-8)</td>
<td>Not specified</td>
<td>One emergency shelter for females</td>
</tr>
<tr>
<td>Sixsmith et al.</td>
<td>UK</td>
<td>Ethnographic case study using interviews, focus groups, questionnaire</td>
<td>Lack of personal contacts, little understanding of sociocultural context</td>
<td>Stakeholder analysis, advertising, gatekeepers, highlighting benefits to participants</td>
<td>Not specified</td>
<td>One community in England (146 individuals)</td>
</tr>
<tr>
<td>Koosimile, A.T.</td>
<td>Botswana</td>
<td>Case study</td>
<td>Suspicion, bureaucratic formalities, consent of respondents, micropolitics, Not clearly described</td>
<td>Letters, physical follow-ups, sponsors, gatekeepers, meetings, good self impression</td>
<td>Three months</td>
<td>26 science teachers in 8 Community Junior Secondary Schools</td>
</tr>
<tr>
<td>Mintzberg, H.</td>
<td>US</td>
<td>Structured observation</td>
<td></td>
<td>-</td>
<td>Not specified</td>
<td>Five managers</td>
</tr>
</tbody>
</table>

Note: A detailed literature search carried out to identify a construction management study involving extensive access negotiation into firms for the purpose of data collection is yet to yield any meaningful result.

Negotiating access involves a constant process of approaching, entering, exiting a field setting containing data subjects (Delamont, 1992). Thus, access is not something that is negotiated once and then settled for the whole fieldwork (as also explained in most of the studies summarised in Table 1). Gaining access is a process, rather than a simple decision or event. In fact, access negotiations are likely to be continuous throughout the life of a research
Despite the difficulties associated with negotiating access into fieldwork settings, good planning, foresight and being proactive can help to increase the chances of success greatly. Koosimile (2002) conducted a one year case study on the implementation of a new science curriculum in lower secondary schools in Botswana. The study was based on 26 science teachers in eight Community Junior Secondary Schools in one village. The main research methods used were classroom observations, interviews, and document collection. The strategies used to negotiate access included initiating contact through official letters: one directed to the Permanent Secretary in the Ministry of Education, others to the individual school heads. This was followed up with physical visits to the Ministry and the schools involved. The Ministry’s approval facilitated consent by the schools that participated.

Reeves’ (2010) study into the daily life patterns of sex offenders within their probation hostel was based on a three-phase exploratory study conducted over 21 months using interviews and participant observation. Access negotiation involved the use of gatekeepers. The hostel manager was approached six months before the planned time for fieldwork through the researcher’s friend who works with the manager. This approach was informed by suggestions from researchers such as Duke (2002); Wilkes (1999) and Winkler (1987) that the use of personal contacts to a study site can facilitate access negotiation and bypassing bureaucratic channels. Another issue mentioned by Reeves (2010: 318), although not in detail, is the role of gender in facilitating access negotiation. Researchers like Gurney (1991: 379) have earlier suggested that female researchers may be able to negotiate access quicker than their male counterparts especially when the research setting is a male-dominated environment. This is clearly an area for future research.

The aim of the research project carried out by Sixsmith, Boneham and Goldring (2003) was to explore the relationship between social capital, health, and gender in a socially deprived community in the Northwest of England. The study examined some of the main practical issues and strategies for maintaining credibility and trust. Access to participants was secured through advertising, snowballing, accessing gatekeepers, and street surveys. Mora-Ríos, J. et al. (2008) investigated the concepts of distress and well-being in a marginalized community in Mexico City with 3,016 inhabitants. The research methods used were participant observation, in-depth interviews, free-association technique, and focus groups. Access negotiation involved initial contact with the community through a group of psychologists already on the ground in the community. This was followed by meetings with community leaders and then gaining access to individuals using a snowballing approach.

A study carried out (within a homeless shelter for 18 single adult women with a maximum three-month stay) on how barriers originate, are encountered, and are potentially overcome within specific research settings revealed at least ten barriers to researcher access (DeVerteuil 2003): researcher’s positionality vis-à-vis participants; outsider status i.e. distance between researcher and participants; social barriers (e.g., vastly different lived experiences between participants and researcher); strict social, religious, and gender boundaries; presence of factions i.e. the fact that many difficult settings are rife with division, cliques, and internal distrust; close doors or off-limit spaces i.e. “not all aspects of the setting you wish to observe or everyone you wish to interview will be available”; spatiotemporal limits of a male
researcher trying to investigate an emergency shelter for women. The study discussed two sets of barriers in detail: the factional divide and inherent spatiotemporal limits.

Seven main points can be highlighted from the literature review in relation to access negotiation obstacles and strategies. First, there are multiple layers of access negotiation into firms. Second, gatekeepers can be both advantageous and disadvantageous. Gatekeepers act as a conduit for access between researchers and participants (De Laine, 2000) and they often have local influence and power to add credibility and validity to the project by their acceptance of it (Seidman, 1998). On the other hand, gatekeepers can erect barriers, prevent access and obstruct a research project (Berg, 1999 and Clark, 2010). Third, more than one technique often needs to be used to negotiate access. Fourth, a significant amount of sensitivity and skills is required in access negotiation. Fifth, personal contacts are useful but it is not always possible. Sixth, the main strategies for negotiating access in most cases are gatekeepers, making a good first contact, personal contacts, highlighting benefits to participants, and physical follow-ups. Seventh, the main obstacles to negotiating access into firms are layers of gatekeepers to overcome, ethics, confidentiality, informed consent, lack of personal contacts, micropolitics in organisations, suspicion and bureaucratic formalities.

NEGOTIATING ACCESS INTO FOUR FIRMS

The four firms involved in the study are hereafter referred to as Alpha, Beta, Gamma and Delta. Alpha and Beta are construction firms in Ghana. Gamma and Delta are construction firms in the UK. The experiences of ethnographic researchers such as Glidewell (1959), Johnson (1975) and Winkler (1987) inform our access negotiation preparations. Most of them spent a considerable amount of time on negotiating access. Thus, it was important to learn from their experiences to help us overcome potential access negotiation problems.

The research interest here was the bidding process of contractors, which involves commercially sensitive information including prices and competitors. Past studies of contractors in the UK, for example Skitmore and Wilcock (1994: 142) had showed that gaining access to commercially sensitive information of contractors is difficult. Therefore, one access negotiation strategy was to use personal contacts and gatekeepers in target firms. This was informed by the advice given by Glidewell (1959) and Winkler (1987), each of whom spent about one-third of their research project time in negotiating access, in relation to the use of early planning and friends and contacts within target firms as tools for negotiating access. Johnson (1975) even suggested the use of slight deception to gain access despite its ethical implications explained in Gill and Johnson (2010) and Bell (1999).

A number of our industry contacts provided assistance with our access negotiations. One of them suggested that the lead researcher should mention the fact that he was carrying out the research work as a foreigner in the country of study. According to him “…this will make the recipients more likely to assist your research”. We found the advice to be in contrast with suggestions in the literature, which suggested that the use of personal contacts was a factor that would make firms more willing to assist the research. However, in the end, two of the case study firms were firms where we had no personal contacts at all.

In two of the cases, a written letter was sent to contractors in the first instance. The request was specific, honest and straightforward. The researcher was seeking an opportunity to observe live tender processes to write up case studies for a doctoral study. In the end, the contractors who agreed mainly did so because of the influential role of the gatekeepers who
spoke to their colleagues on our behalf; the academic purpose of the study; the written assurances of confidentiality and anonymity in reporting the study; and a feedback report which was promised in return for access to the case studies. It was also mentioned in the letter that the researcher’s professional background as a Quantity Surveyor could enable him to provide an extra pair of hands to the bid team for some routine tasks.

The letter to contractors explained the purpose of the study but there was no specific mention of the interest in learning about how contractors price risk. It was felt important not to distort the research by prompting the contractors about how they incorporate risk into their prices, because such a direct prompt might not reveal the true position of risk in the context of their own bid pricing processes. The approach taken was to help in separating the variables being measured from external influences or the researcher’s own prompts.

It was generally difficult to secure access into the four firms and a wide range of ideas and skills had to be employed. Each contractor was clearly concerned about the commercially sensitive nature of the data involved in the study. For example, the managing director of one of the targeted firms in Ghana said: “…it would be impossible for us to allow you or anyone else to come in and see our prices. That is all the power we have as contractors. Even here in the company, only about two or three of us are involved in the final stages of what we price the bid at. Then we lock it in a safe.” In the UK, similar difficulties were experienced in negotiating access. For example, the director in charge of estimating in one firm emailed us the following response: “…I'm afraid that much of the detail we think you are likely to need will be too commercially sensitive for us to grant your request or release to you as this is effectively into the public domain.” Therefore, the access negotiation process was difficult. The detailed process used to negotiate access into each of the firms is now explained.

**Alpha access negotiation**

Alpha is one of the leading building and civil engineering construction firms in Ghana. The firm employs approximately 1700 people and has an annual turnover of ₡7 billion cedis. The main factor that facilitated access negotiation into Alpha was the use of personal contacts. The lead researcher, whose professional background is Quantity Surveying, resigned from his full-time job in order to take up the full-time PhD position. However, due to practical training requirements of the professional exam of the Ghana Institution of Surveyors (GhIS), I was required to affiliate with a quantity surveying practice in Ghana to keep his knowledge of quantity surveying practice updated. Although Alpha is primarily a contractor, it has professional Quantity Surveyors working in their tendering department so it was an acceptable place to train for the GhIS qualification. The researcher negotiated a one-day per week working arrangement with Alpha in order to satisfy the professional training requirements. The reason I negotiated the professional training arrangement with Alpha is because of the personal contacts I had in the firm. Prior to the PhD, I used to work on construction sites of a university in Ghana as a client representative. It is in the course of this work that I met some of the key employees of Alpha who was contractor for a couple of projects at the university. When I resigned from my post at the university to take up the PhD position I used my contacts in Alpha to negotiate the professional training arrangement. By the time it emerged that my PhD research work would involve a live observational study of the tendering process of contractors, I had developed sufficient ground and trust in Alpha to help me obtain access for the study. I was known to them so there was little cause to suspect that I was coming in as a “spy” or be an “intruder”. This situation facilitated access. Without prior engagement with the key people at Alpha, I doubt that I would have been able to secure access into the tendering department of this leading firm in Ghana. All contractors I came
into contact with in the course of the study are very sensitive about commercial issues and are not likely to take a risk on the survival of their business just to help a researcher. Fortunately, I did not even need to put in a formal letter to request for access. I simply visited the firm and discussed the study with the key people I knew. With their approval, I was granted access and supported throughout my research work. Thus, as advocated by Winkler (1987), the use of contacts within target organisations remains a powerful tool for negotiating access.

**Beta access negotiation**
The access negotiation into Beta was similar to the processes used to gain access into Alpha. On the type of work that Beta does, the Technical Manager said: “...we are building and civil engineering contractors who do all kinds of jobs apart from roads. We do design and build and unit rate contracts. Most portions of their work are often subcontracted.” The lead researcher came into contact with a number of contractor’s representatives in the course of his work on university construction sites. Most of these people were senior and influential people in their firms. One of the contractor’s representatives became a very close friend who later helped to negotiate the access I required to carry out the case study in Beta. Here too, there was not really the need for a formal access request letter. I had visited the firm a few times prior to the time of the research work so I was known to them. My key contact in Beta and prior engagement with the firm proved useful in oiling the wheels of the access negotiation.

**Gamma access negotiation**
Gamma is one of the UK’s top 20 construction firms (Hansford, 2008). The access negotiation into firms in the UK was clearly more difficult. After several attempt to persuade contractors for a case study opportunity had failed, an email was written to the Civil Engineering Contractors Association (CECA) to ask for help with contacts of contractors who would be most likely to help. Prior to this, we had the Institution of Civil Engineers (ICE) who issued an email to their members to introduce the research and the help needed. This effort did not yield any case study opportunity but we felt very grateful to the ICE. CECA replied our email with a list of four contacts and we wrote to each of them for a case study opportunity. Two of them declined outright citing reasons of commercial sensitiveness. The Managing Director of the third firm said it was “possible” for them to “look into the request” at a meeting of the company’s board.

With no positive response from any of the firms after a while, frustration was clearly setting in as a result of the difficulties encountered. It was decided to call the contact in the fourth firm. He held a high position in the firm and as we spoke on the phone, I explained the study to him. The discussions went well and one reason for this is because the contact details had been supplied by CECA. He himself was not directly involved in the tendering processes of the firm. Therefore, he promised to discuss the request with the chief estimator on our behalf. Fortunately, the initial response was positive and the lead researcher was invited to the contractor’s office to discuss the access request. The firm called the university to confirm my identity. When I arrived in the firm, a new tender process was about to commence. I pressed for an opportunity to shadow that particular one because of the time available for the study and the request was granted. With the Gamma case study secured, we started to look for another case study opportunity. As a result of our success with negotiating access into Ghana, we believed that we would be able to secure access into another firm.

**Delta access negotiation**
Delta is also one of the UK’s top 20 construction firms (Hansford, 2008). During the time of carrying out the Gamma case study, a detailed search was carried out on the internet for
contact details of personnel in construction firms in the UK. Thus, employees of contractors were contacted through email for an opportunity to shadow one tender process in their firm. Emails were written to 87 contractors. 86% responded with an outright answer of “No” citing the “intrusive” nature of the study and the “commercially sensitive” nature of the information involved. Most of them, however, wished us “best of luck” with the study! 12% of the firms said they needed to discuss the access request at the management board level. To date, no formal response has been received from any of the firms. After several follow-up emails, phone calls and assurance of confidentiality and anonymity, only two contractors agreed in principle to consider granting access for the study. One of them asked if we would be willing to travel a long distance away from Reading to the location of the company’s head office. Our answer was “Yes”. He promised to get back to us after discussion with senior colleagues but to date we have received no response. Just around the time when the access to another case study started to prove elusive, the Business Development Manager in Delta contacted us with a request for more information about the study. We supplied her with ample information and contact details of officials in the university with whom she could confirm the purely academic nature of my study. After a week, she wrote to confirm the access approval and asked us to liaise with their human resources department concerning the details of the opportunity. The access negotiation success rate in the Delta case was clearly low i.e. from initial contact with 87 firms, only one firm granted access for the study.

**DISCUSSION**

Five main points are brought forward for discussion. First, the main factor that facilitated access negotiation in Alpha and Beta was the use of personal contacts. Personal contacts facilitated the access negotiation process greatly which confirms assertions in Matthiesen and Richter (2007) and Winkler (1987). Access negotiation into Gamma and Delta was more difficult and the main factor that facilitated access was the key people (gatekeepers) in the firms. This reinforces the importance of gatekeepers in access negotiation (see a detailed discussion relating to this point in Clark’s (2010) study on the relationship between gatekeepers and researchers). Second, time taken to negotiate access was fairly long in the case of Gamma and Delta. Here, Winkler’s (1987) advice on early planning in studies of such nature would be helpful. DeVerteuil’s (2004) study examined barriers to researcher access and provides some useful suggestions for overcoming access negotiation difficulties. Third, access negotiation success rate varied in the four cases. The main concern for most contractors was not intrusion (as suggested in Gill and Johnson, 2010) but commercial sensitiveness of the information involved (as suggested in Skitmore and Wilcock, 1994). Fourth, one of the incentives to Gamma and Delta was the feedback report that was promised in return for the access to case studies. The firms were comfortable with the presence of the researcher and appreciated the extra pair of hands provided by the researcher for some routine tasks, and were keen to receive a feedback report which was promised in return for access to the case studies. After the study, we visited the firms involved to have a feedback session with them on our observation of their tender process specifically and the whole study generally. Matthiesen and Richter (2007) have discussed giving feedback to participants. And researchers like Koosimile (2002) have discussed in their study the importance of not only entering a research setting but also exiting the setting. Fifth, the frustration encountered in the access negotiation processes is not unique to this study. Similar situations of frustration have been encountered by other researchers like Winkler (1987). Matthiesen and Richter (2007) and Clark (2008) offer suggestions for dealing with frustration and fatigue issues in research. This reinforces the importance of persistence in access negotiations.
CONCLUSION

The question explored was: What are the main obstacles associated with access negotiation into firms; and what strategies do researchers, here and elsewhere in the literature, employ to increase the chances of success? Our research work on tendering processes of contractors in Ghana and the UK took place between 2006 and 2008. We successfully negotiated access into four firms (two each in Ghana and the UK) to enable a live observation of the whole tender process of contractors to be carried out from start to finish. The average time spent in each firm was six weeks. The techniques we employed in negotiating access included the use of personal contacts, writing to firms we found listed on the online databases of relevant trade and professional association, reaching out to contractors’ employees through professional bodies’ publications, etc. With all of this effort, our average success rate was less than 5 per cent, which significantly reinforced the message from the literature in connection with the difficulties involved in negotiating access into firms. The main obstacles encountered were firms’ reluctance to allow data collection on information relating to commercial aspects of their work and fear that this could eventually be divulged to their competitors or end up in the public domain. However, with the assurances of confidentiality and anonymity given, some firms agreed. The firms that agreed did so mainly because of these assurances. The reputation of the academic institution where the research work was being carried out also gave them some confidence in our ability to handle the issues of confidentiality. Another reason was also because we found gatekeepers within the firms who understood and supported the rationale and academic nature of the study. The gatekeepers, who were in senior management positions, spoke to their colleagues on our behalf to open the door for initial meetings with their colleagues in charge of the tendering and estimating departments where our study was carried out. A feedback report was also promised in return for access to the case studies. Although the access through personal contacts is by far the easiest, it is not always possible. Researchers can approach firms as complete strangers, especially in a foreign country, and this could make the firms more likely to assist the research.

REFERENCES


Clark, T. (2007) ‘We’re over-researched here!’ Exploring accounts of research fatigue within qualitative research engagements, Sociology, 42(5), 953-970

Clark, T. (2010) On ‘being researched’: why do people engage with qualitative research?, Qualitative Research, 10(4), 01-21


