

Z.A. Aziz

The influence of communication on project success: A survey of the SANRAL Gauteng e-tolling project in South Africa

ABSTRACT

In any successful project, communication plays a significant role and forms the basis to ensure effective project results. Only a few studies in South Africa have considered the influence of communication on the perceived success of a project. Thus, this research investigates the influence and explores the role of communication in project management success within the case example of Gauteng's SANRAL e-toll project in South Africa. This study highlights some of the areas in the project communications processes. The practical importance of the study shows that communication is the key to effective project management. The research design of this correlational and exploratory study entailed a positivist research philosophy using a deductive approach. The quantitative research was conducted by means of a survey questionnaire. A questionnaire was designed and used to determine the level of influence of communication on stakeholders in the case example of Gauteng's SANRAL e-toll project. A qualitative study was conducted by means of a semi-structured interview. An interview guide was designed and used to determine insight about Gauteng's SANRAL e-toll project. The answers provided on these questions were then analysed to determine how project communications might contribute to the outcome of projects.

Keywords: communication in projects, project failure, mixed methods, PMBOK® Guide, Knowledge areas, soft skills in project management

Zainab Aziz currently lectures at the Operations Management Department at the University of South Africa. Her research interests focus around the soft skills of project management, communications and stakeholder management.

azizz@unisa.ac.za

INTRODUCTION

An infrastructure development project is a complex business, which involves different stakeholders that become more demanding by insisting on effective communication to stay abreast of project outcomes. Project management has gone through various changes over time and has matured to become a professional discipline with its own body of knowledge regulated by the Project Management Institute (PMI®) (2021). However, project failures and the challenges involved cost international businesses, organisations, and governments millions, and sometimes billions each year. A recent study by McKinsey in collaboration with the University of Oxford (Bloch, Blumberg & Laartz 2018 and KPMG New Zealand's multi-industrial survey (KPMG New Zealand 2018) attest that high rates of project challenges and failures have evolved around key variables that determine project success, but no possible solutions have been devised. Scholars allude to poor communication as the key reasons for project failure (Beringer, Jonas & Kock 2013; Chang et al. 2013; Fageha & Aibinu 2016), which require careful analysis in order to be managed effectively to ensure project success and minimise risks (Davis 2014). The PMI (2021) indicates that 75-90% of a project manager's time is spent communicating formally or informally. The importance of good communication to achieve project success has often been outlined in literature since 2011 (Beringer et al. 2013; Eskerod, Huemann, & Ringhofer 2015), but this literature does not capture the intricacies of project communication. Furthermore, although some researchers have paid attention to project communication (Bloch et al. 2018), far fewer studies have investigated the reasons for quality communication and its role in determining the level of perceived success of a project (Henderson, Stackman & Lindekilde 2016; Lehmann 2009; Müller & Turner 2001; Rodríguez, 2017). It is increasingly evident that quality communication will continue to be a critical component of long-term project success, especially when a project must provide a value-based offering with trust to society as stakeholders. Chou and Yang (2012) list the growing importance of effective communication as a fundamental shift in project success. Although many researchers have acknowledged a need for effective communication in project success (Eskerod, Hueman & Ringhofer. 2015:45), little is known about how interactions with stakeholders affect customer evaluations and behaviour.

The purpose of a project is to deliver the value for which it was established, specifically to its stakeholders. Stakeholder benefits have been identified as the drivers for any project, and the achievement of stakeholders' objectives determines project success (Cooke-Davies 2002:188; Davis, 2014). From the point of view of the organisation, Andersen (2008:22) described success as the sum of product success (benefits), project management success (deliverables), and project success in general. Therefore, a more intimate relationship through effective internal and external communication is vital to the success of any project. Internal communication is the interaction of employees inside the project, and external communication is related to the satisfaction of the demands of external stakeholders by managing the flow of information optimally (Davis 2014; Beringer et al. 2013; Toor & Ogunlana 2010; Eskerod and Jepsen 2013;

Eskerod et al. 2015; Pomerania 2016). Proper communication with influence may be more useful than other constructs ensuring project success.

The South African National Road Agency SOC Limited (SANRAL) Gauteng Freeway Improvement Project – also referred to as the Gauteng e-toll project – will be used as the case example throughout this research on how communication as critical factor influences project success. SANRAL is an independent, statutory company registered in terms of the Companies Act 71 of 2008. The South African government, represented by the Minister of Transport, is its sole shareholder and owner. SANRAL makes a significant contribution towards road safety by maintaining and improving our road environment, and by identifying and addressing road safety concerns. The organisation also aligns itself with local and international road safety authorities to study and improve the safety of all our road users.

With this system of electronic tolling, the citizenry demands satisfaction, including the success of projects, which must include good planning, participation and communication with all stakeholders involved. Public support needs to be extremely high, with strong advocates promoting acceptance of projects by creating confidence among stakeholders. This specific project was completed, but according to various reliable reports, many grievances have been voiced about the severe communication barriers between the e-toll project and its stakeholders (Rennie 2013:2), and such widespread disapproval of the project inevitably negatively influences the success of this project (Clarke & Duvenage 2014).

Stakeholder involvement through communication and engagement has seen limited research but has been met with increased interest from academics, governments, non-governmental organisations (NGOs) and practitioners alike (Pomerania 2016; Zulch 2014). The literature above suggests that if a project is ultimately to be considered successful, it is important that project managers understand and manage it, while also ensuring effective communication and stakeholder consultation. A lack of proper project communications and project stakeholder management may negatively affect the eventual outcome of a project. Past research on communication has concentrated broadly on barriers to communication, but little detail can be found in the literature of how communication at different stages of a project influences stakeholders, which creates an incomplete picture of the role of communication and its influence on the success of projects.

The question of what has caused projects to fail, and how important variables such as project communications management affect the success of a project in South Africa remains unanswered (Davis 2014:190). Against this background, the purpose of this research is to answer the research question: “How can project communication management influence the successful outcome of a project?” More specifically, this research has one objective – to explore the impact of communication in the SANRAL Gauteng e-toll project at various stages of the

project process. The purpose of this paper is to contribute to the theoretical understanding of communication within projects, and it provides theoretical insights to address communication issues by exploring some contingencies under which communication is more effective.

The need to address this unanswered question is essentially to call for a new way of thinking about communication in the project process, and it draws inspiration from Joslin and Müller (2014), and Goetsch and Davis (2016), who have stressed the need for creating effective communication that will enable all stakeholders to participate throughout the project's various phases. In addition, this research is limited to the SANRAL e-toll project in Gauteng, because its success or failure is critical in a modern economy, but is under-researched compared to other existing toll roads or freeways in other regions or provinces in South Africa. Information generated from this research should provide project managers with greater understanding of the need to communicate with all stakeholders.

The paper has four parts. Firstly, it reviews the existing literature relevant to the influence of communication in ensuring project success for all stakeholders. Then the research methodology is presented, and data analysis techniques are discussed regarding the case, followed by a summary of the findings. The paper concludes with a discussion of its theoretical and managerial implications, with a summary of the study's research contributions and suggestions for further research.

1. LITERATURE STUDY

In the last decade project management has developed at a tremendous rate and has become an established field of study worldwide for academics, project managers, engineers, and consultants with the purpose of ensuring project success, specifically to stakeholders. Numerous definitions exist for project management. Beringer, Jonas and Gemünden (2012); Davis (2014); Kwak (2013); Nicholas and Steyn (2012); PMI® (2021) and Zulch (2014) highlight that any project is a temporary endeavour undertaken to create a unique product or service, where the word "temporary" implies that a project has a beginning and an end, and the project duration may vary from a short period to two years. There has also been an increasing concern about the concept of project complexity (Morris, 2015). Morris also argues that project management is not a discipline at all and in fact intertwines in day-to-day activities (Morris 2012). Further Turyahikayo (2016) argues that project management is a young discipline and research needs to be done in order for it to gain the momentum that it deserves.

Each project has unique deliverables – products, services, and results – with one important feature –it involves a progressive elaboration, thus implying that it progresses in steps and continues incrementally. To clarify the meaning of project management, the PMI PMBOK® Guide (2021) emphasises that project management comprises ten (10) knowledge areas,

reflecting the five (5) groups of project management processes of initiating, planning, executing, monitoring and controlling, and closing (PMI PMBOK® Guide 2021). The purpose of the Guide is to identify and describe the best practices that are applicable to projects, which are created around project management tools, skills, and techniques.

Throughout this paper, the focus is on how to achieve project success through the construct of communication. McLeod, Doolin and MacDonell (2012) and Burke (2013) regard project success as a multidimensional construct, comprising interrelated dimensions pertaining to economic, technical, strategic, behavioural and business achievements. The PMBOK® Guide (2021) was crucial for this research as this study focused on the important knowledge area in the PMBOK® Guide, namely project communication. Project Communication Management is the knowledge area that employs the processes required to ensure timely and appropriate generation, collection, distribution, storage, retrieval and ultimate disposition of project information (Bond-Barnard, 2017; Zulch 2014). There is growing support for the claim according to Prasad, Tata, Herlache and McCarthy (2013) that the main reason why projects fail within the interrelated constructs as mentioned by McLeod et al. (2012) is communication, which is either poor or ineffective. Pomerania (2016) and Chou and Yang (2012) describe project communications as the processes concerned with the timely and appropriate generation, collection, dissemination, storage and ultimate disposition of project information to plan, manage and monitor projects successfully, thereby satisfying stakeholder needs.

Bond-Barnard (2017), and Butt, Naaranoja and Savolainen (2016) put forward the view that any project must have three levels of success, namely project success, project management success and constant project success. However, to achieve these three levels of success, Davis, (2014); Joslin and Müller (2014); Goetsch and Davis (2016); and Rose (2013) found that the foregoing implies that effective communication is necessary to enhance all the links between the various relationships that exist within a project management set-up to satisfy the needs of stakeholders. Stakeholders are all the individuals and organisations actively involved in the project – directly or indirectly – whose interest may be affected positively or negatively because of project execution or successful project completion (Zulch 2014). Yang, Wang and Jin (2014) argue that assessing both the attributes and behaviours of stakeholders is also a critical success factor in a project. They emphasise that important practices in the successful management of a project comprise engaging the stakeholders, communicating with the stakeholders regularly and establishing long-term stakeholder relationships.

In an analysis of project success, Eskerod and Jepsen (2013), and Yang et al. (2014) identify that project management should assist any organisation to: (1) increase the likelihood that the desired outcome of the project will be attained; (2) ensure the best use of the resource allocation; (3) meet the needs of the stakeholders associated with the organisation; and (4) comply with the trends in the global market to ensure a competitive advantage for the organisation in question. Due to the importance of stakeholder satisfaction, communication

management is critical, as some of the major causes of project failure are poor communication between the project manager and the stakeholders, and a lack of participation of the stakeholders (Eskerod & Jepsen 2013; Muszyńska 2015).

While exploring the use of effective communication to support project success, the works of various authors were consulted, which all report that effective communication is one of the most decisive areas affecting performance project success. This has been confirmed by numerous researchers (Bond-Barnard 2017; Han & Jung 2014; Rodríguez 2017; Mei Yuen Foong 2014; Sharma and Goyal, 2014; Von Meding & Bruen, 2010). In recent studies, Davis (2014); Gemünden and Schoper (2015), Joslin and Müller (2014) and the PMI® (2021) show consensus that effective communication is a primary driver for successful projects, which includes stakeholder benefits. According to Rose (2013), much of what a project team accomplishes, or the actions of a project manager, relies on communication. However, Rose (2013) notes that, with the realisation that stakeholders play a key role in the success of a project also comes the realisation that managing stakeholder interactions is more than just a matter of good communication. It is therefore important to include the communication processes for identifying the stakeholders, developing a stakeholder management plan, managing stakeholder engagement and controlling such engagement. Communication management involves a programme that is aimed at strengthening the prevailing awareness of a situation. Research has indicated the importance of communication management (Yang, et al. 2014). It is essential to know which methods the stakeholders typically use in communication management. According to Goetsch and Davis (2016), communication may be defined as the transfer of a message that is both experienced and understood. Thus, it describes a message that is conveyed by a sender to a recipient, either verbally or non-verbally, and which may include management tasks, activities and/or relationships.

Ofori (2013) points out that the consequences of miscommunication include conflicts that could thwart the project, causing it not to be completed and delivered on time, or worse, to fail. Zulch (2014) and Safakish and Wood (2011) maintain that communication is a key driver to ensure effective project management throughout a project's life cycle, from the beginning until the end. Zulch (2014), and Eskerod and Jepsen (2013) claim that the major causes of project failure are ineffective stakeholder management, poor project communications between the project manager and the stakeholders, and a lack of participation on the part of the project stakeholders. According to these authors, long-term goals of communication within project success indicate that communication provides ultimate performance outcomes of any project to build sustainable capabilities, so its depth gives flexibilities to the project by increasing its range of responses by stakeholders to emerging opportunities.

Foong (2014); Tipili, Ojeba and Ilyasu (2014) show consensus and emphasise that proper communication management with its structures must act mutually to provide clear direction and

control throughout a project's life cycle from the beginning till the end. These authors confirm the critical dependency of communication, integrated within all project phases affecting project performance success. An effective communication system is required and is crucial to ensuring integration throughout the project, which should include three (3) principal components namely community and stakeholder involvement, clear communication channels and frequent meetings. Long, Ongunlana & Quang. (2004), Von Meding and Bruen (2010) found that communication is an important tool to convey project information from one party to another to avoid being misunderstood or misled. The communication plan with its processes must be formalised proactively when project execution starts to connect all stakeholders so that they can work together to achieve the project's objectives. This will reduce the risks of misunderstandings and will increase cost-effectiveness (Bond-Barnard 2017; Pitts et al. 2012). Bourne (2016), Butt, Naaranoja and Savolainen (2016) point out that the implementation of timely formal and informal communication approaches and media to convey the correct and relevant information to stakeholders is crucial to ensuring truthfulness, balance, honesty and credibility. According to Magano (2008) communication is highly important in enhancing teamwork and running projects successfully. Magano (2008) further indicates that information sharing, as a form of communication, is extremely important for ensuring that all the members of a group or society are kept informed about the status of a situation. Poor communication may result in members of the group not having the required information when they need it, causing information about any changes in circumstances not being escalated to the relevant individuals. This may also be compounded if a project communication plan has not been completed, or if it does not contain enough details (Chou & Yang 2012). In addition, according to Richman (2011), it should also explain all the details of the meetings and reports that are to be presented to management, the stakeholders and clients. To ensure informed planning and decision-making, the community concerned should have access to the free flow of the necessary information.

Bond-Barnard (2017) and Pomerania (2016) examined the critical dependency of communication within all project phases and processes, which collectively strengthen relationships and ensure project success. Mohan and Paila (2013), and Zulch (2014) rightly observe that effective communication must be linked with competitive advantage. Bond-Barnard (2017), Chou & Yang (2012), and Kloppenborg, Tesch & Manolis (2014) identify clearly in their research that projects have a competitive advantage when there is effective communication, enabling the project interactivity by the process, which fosters success. Without effective communication, the flow of a project's information will be affected negatively, causing misunderstanding with disastrous consequences, which, in turn, will cause direct and indirect conflicts that could prevent the project being completed and delivered on time, or worse, becoming a failure. It is thus clear that effective communication is crucial to the success of the project (Ofori 2013; Kerzner 2013 and Han and Jung, 2014). Martin, Lewis and Fifi (2014) suggest that communication should be broken down into two components, namely, the dynamic component of the quality or effectiveness of the communication; and the steady-state component of the difficulty involved in the exchange of information. A well-established model for

communication was presented by Cleland and Kerzner (1985) and describes communication as consisting of the source, medium and receiver.

Both Pomerania (2016), and Ballan and El-Diraby (2011) emphasise that the driving force required for any project is communication to set clear priorities for the most important things. These authors argue that these requirements align all project activities necessary to enable any project manager to focus all resources critical to the success of project. Communication across projects is needed to create a dynamic fit with the stakeholders by always acting proactively with the correct information (Sharma & Goyal 2014). Such an approach will have a positive effect on project success, which will result in indirect improvements in the phases of the projects (Muller et al., 2014). It became clear from the conceptual analysis and review of the literature that communication is one of the most significant constructs in and contributors to project success. The communication “source” encodes and dispatches a message together with various language components, including intonation, accent, stress and slang, in voice, written form, body gesture or a combination of these (Safakish & Wood 2011). The message is then transferred to the “medium”, which the authors argue should ideally be free of “environmental interference” such as noise and disturbances that could affect the primary message being communicated. The “receiver” finally receives the communicated message and attempts to decode and interpret the information along with its language components and any modifications because of the environmental interference.

The PMI® notes that the communication requirements of a project are the sum of the information needs of each of the groups of project stakeholders (Serrador 2009, and Joslin and Müller 2014). Furthermore, the PMI® suggests that these requirements are defined by combining the type and format of the information that the stakeholders need, with the value of that data (Serrador 2009). The PMI® therefore indicates that the project manager is required to ensure that the stakeholders are provided with the key-targeted project information requirements when they need it, and to the extent that they need it. Hence, the project manager should utilise the necessary communication channels, paths and methods that are required for each of the individual stakeholder groups or individuals (Berzkalns 2003). The PMI® (2021) further indicates that a typical set of tools and techniques to determine project communications requirements are project organisation charts; stakeholder relationships; specialists involved in the project; stakeholder information; and information needs of the stakeholder.

The PMBOK® Guide (PMI® PMBOK® 2021) points out that the role of a communication plan is to study and document the communications and information needs of a project, while also considering the stakeholders’ needs. Furthermore, the PMBOK® Guide (PMI® PMBOK®, 2021) states that a communications plan provides a typical set of tools and techniques for determining project communications management requirements. They suggest that it should comprise stakeholder communication requirements; the person responsible for communicating the information; information to be communicated to all the stakeholders; the person or persons who will receive the data; the method or methods used to transmit the information; and the

frequency of the communication.

Additionally, the PMI® notes that the application of more accessible and fast technology can be very useful in assisting the transport and distribution of information amongst the project stakeholders (Serrador, 2009). Nevertheless, the PMI® indicates that the project manager needs to consider some factors that impinge upon and dictate the communication technology that could be applied during a project (Serrador, 2009). These are: (1) the urgency of the demand for the information; (2) the availability of the technology; (3) the experience and expertise of the project stakeholders; (4) the duration of the project; and (5) the project environment.

Communication barriers as a topic in communication research have received much attention in the literature. As explained by Martins (2014), communication barriers may arise at any point in the communication cycle, including at any stage of the “sender, message, channel, receiver and feedback” sequence. Martins (2014) argues that these barriers may cause misunderstanding and confusion, and that the delivery of messages may only be regarded as successful once, both the sender and the receiver have distinguished the message in the same way. Various “filters” have been described that may hinder message communication.

It is essential that proper and crucial communication management processes, methods, schemes and tools be applied to ensure that project information is distributed and shared appropriately to build trust with all stakeholders to keep track of project objectives throughout the execution of the project (Zulch 2014). These methods, schemes and tools should permit six critical categories of communication: accuracy, timeliness, completeness, understanding, barriers and procedures, and targets. Together with this, effective communication should ensure completeness, accuracy, timing and volume that relate to successful and high-performance projects. This will ensure that all daily challenges will be overcome by effective communication during project execution, which will help to contribute towards project success.

After this large and growing body of literature about the importance of communication for project success has been investigated, SANRAL Gauteng Freeway Improvement Project – also referred to as the Gauteng e-toll project – will be used as the case example throughout this research. This specific project was completed, but it seems from various reports that though technically a success, severe grievances have been voiced about the communication barriers between the e-toll project and its stakeholders (Rennie, 2013:2). This case will clarify and shine new light on the major objective of this research, namely “How can project communication management influence the successful outcome of a project? Other aspects of the SANRAL e-toll project, which also have been problematic according to Clarke and Duvenage (2014), have led to widespread public disapproval of the project (Rennie 2013). The project appears to have been implemented without considering that public acceptance, as well as robust regulatory and

enforcement frameworks, are considered critical elements for the success of an infrastructure project of this scope. This project provided an important opportunity to advance understanding of the influence of project communication on project success within the case of SANRAL Gauteng e-tolling project.

2. METHODOLOGY FOR COLLECTING DATA

According to Bush (2016), a target population is the overall number from which insightful responses can be collected. The target population for this study consisted of Gauteng motorists and three SANRAL e-toll project managers who were part of this project. The unit of analysis was the individual Gauteng motorist and the project manager.

In order to investigate the relationships among variables in this study, the descriptive statistics had to be transformed into explanatory (correlational) statistics to determine whether the results provided adequate evidence in support of the primary research objective, namely to determine the influence of project communications and project stakeholder management on the success of a project.

This study used the convenience sampling technique for selecting the research respondents to participate in the questionnaire survey. There is no generally accepted rule of thumb regarding minimum sample sizes, or the relationship between the objects and the number of clustering variables used (Siddiqui, 2013). This could be considered one of the limitations, as it will always render a result, no matter how many variables are clustered with how many cases. However, a bigger sample size is required for valid results (Siddiqui, 2013). Convenience sampling was also used to select the project manager (i.e. SANRAL – Northern region). The respondents were selected based on their availability to participate in the study, and they had to meet the criterion of having a driver's licence. The target population for the sampling frame was 400 Gauteng motorists and two project managers (i.e., SANRAL – Northern region) who were available to participate in the study. For this research, the mixed-methods approach was chosen because the mixed-methods research is an approach to enquiry, which includes gathering both qualitative and quantitative data, combining and integrating the two sets of data (Creswell, 2008). Additionally, in order further to assist the researcher, a convergent parallel mixed-methods design was followed. With this approach, the researcher collects both quantitative and qualitative data, analyses the data separately, and then compares the results to determine if the findings confirm or disconfirm the data sets (Creswell, 2008; McKim, 2017).

The initial questionnaire was pre-tested with a convenience sample of 15 respondents using the collaborative participant pre-testing method described by Cooper and Schindler (2006). Pre-testing or piloting the developed questionnaire is essential, as it is crucial to the success of the study that the respondents understand it and its wording (Cohen, Manion, & Morrison 2018).

The purpose of the pilot study was to determine the feasibility of the study; to test the reliability and validity of the instrument, to establish how appropriate, understandable and practical the instrument is; to address any problems prior to the main study; and to check the time required for the completion of the questionnaire (Creswell 2008). In establishing trustworthiness, Lincoln and Guba (1986) created stringent criteria in qualitative research, known as credibility, dependability, confirmability and transferability that was adopted for this research as well.

Primary data was collected over a period of three months, and no incentives were provided to the respondents. The quantitative part of this study was prepared according to the procedure used by Blumberg (2007), which involves a questionnaire survey in order to maximise the respondent rate. A seven-point Likert scale was used in the questionnaire, ranging from strongly agree to strongly disagree. The questionnaire was administered to 400 day-to-day Gauteng road users, and was handed out to the road users as respondents randomly when they filled up with fuel at petrol stations along the national highways of Gauteng. To avoid potential bias caused by severe traffic conditions, surveys were conducted at various times of the day, two days of the week and one day on the weekend at each petrol station. For the qualitative part of the study, a semi-structured interview was conducted with two SANRAL managers. These two participants were the key project managers involved the Gauteng e-tolling project. Fisher (2013:53) defines an interview as a social encounter where interviewees collaborate in producing their past or future actions, experiences, feelings and thoughts. Semi-structured interviews were used in this study to obtain narrative data to be thematically analysed. Interviews were planned with the project sponsor (i.e. SANRAL – Northern region) based on the availability of the project managers. An interview schedule was compiled in which the interview questions were outlined. The questions are mostly open ended, making it possible for the interviewer to add new questions during the interviewing process, depending on the responses of the respondents.

Montero (2014) postulates that a questionnaire contains a set of questions addressed to a significant number of subjects to gather information relating to a specific field. It is used to collect statistical information or opinions about and from people. Bruce (2013) also defines a questionnaire as a written or printed list of questions to be answered by several people, especially as part of a survey. The aim of the questionnaire for this research was to determine the respondents' opinion surrounding the aspects of project communications management, project stakeholder management and project success. The questionnaire made use of a Likert-rating scale to determine whether they 'strongly disagree' or 'strongly agree' to the questions provided.

The questionnaire began with a selection criterion in section A related to basic sampling and geographical information. Closed-ended questions were used with a selection criteria matrix for ease of completion. All questions were mandatory. The questionnaire was explained to the motorists briefly, and stationery was provided to the motorists to fill in the questionnaire. After

having been completed, the questionnaires were collected directly by the researcher or field worker, with the advantages that no data manipulation had taken place, and that all motorists felt safe to complete the questionnaire and hand it to the field workers.

Of the 400 individuals who completed the questionnaire, 156 (39%) belonged to the age group 18–35; 142 (35.50%) belonged to the age group 36–50; 78 (19.50%) belonged to the age group 51–65; and 24 (6%) were 65 and older. From the questionnaires it was also determined that 91 (22.75%) had an annual income between R1 and R100 000; 99 (24.75%) had an annual income between R100 001 and R200 000; 101 (25.25%) had an annual income of between R200 001 and R300 000; and 109 (27.25%) had an annual income of more than R300 000. Further, 282 (70.50%) were not registered for an e-tag with SANRAL, whilst only 118 (29.50%) were registered for an e-tag with SANRAL.

The quantitative data was coded and captured by using the statistical software program known as the Statistical Software Package for Social Science (SPSS), and then analysed descriptively whilst the qualitative data was captured by using a thematic analysis. Coding is one of the crucial phases in thematic analysis, and it is used to categorise data with similar meanings. It involves labelling each data unit with a code that represents that meaning of the extract (Saunders, Lewis & Thornhill: 2016). Tesch's descriptive method of open coding presents a way of working with textual data and is summarised in eight steps (Creswell: 2014). These steps guided the researcher through the data analysis process. The researcher first had to obtain a sense of the whole by reading through the transcriptions. To arrive at the underlying meaning in the information, the question was asked, "What is this referring to?" After the initial thought process, preliminary thoughts were written down. These thoughts were then collated into groups to become themes eventually. The data belonging to each theme was re-assembled and a preliminary analysis was performed to identify the overarching themes that emerged from the open coding process. The researcher's review of the literature and discussions with peers and experts greatly contributed to the coding process. Furthermore, through keeping field notes and rereading transcripts, coupled with revisiting the audio recordings, the researcher began to see the bigger picture by identifying patterns and connecting themes. Consensus was reached on all identified themes, contributing to triangulating this study. The qualitative and quantitative research results are presented in the next section.

3. ANALYSIS AND INTERPRETATION OF RESULTS

This research focused on investigating the influence that project communications and project stakeholder management could have on the success of a project, with specific reference to the case example of the SANRAL Gauteng e-tolling project in South Africa. The presentation and analysis of the research results both include the qualitative in-depth reviews (explanatory one-on-one interviews) and the quantitative survey (descriptive data from questionnaires).

Thematic analysis was conducted as the essential information-gathering strategy to recognise, analyze and distinguish subjects inside the information set. This approach was used because it “permitted the analyst to sort out and portray the information in rich detail to arrange and decipher the numerous viewpoints of the investigated subject” (Braun & Clarke 2006). In the qualitative part of the research, two participants were interviewed. The aim of this section is to summarise and provide a synopsis of the qualitative and quantitative results in the research, starting with a summary of the qualitative results of the interviews below:

- Meeting stakeholder expectations: The expectations of all stakeholders should be determined early in the project through consultations to ensure that they are met at the end.
- Stakeholder engagement in project decision-making: Communicating with stakeholders throughout the project is vital when decisions are to be taken in order to achieve a successful outcome.
- Stakeholder identification throughout project life cycle: It was highlighted that the severity of influence largely depends on the type of stakeholder with whom they communicate, which has not been identified, along with ensuring that the right stakeholders are identified at all stages of a project.
- Stakeholder involvement and commitment: During the interview two points were observed – stakeholders need to be communicated with throughout the process, and all stakeholders need to be on board. These two points are vital for any project to be successful.
- Lack of communication in the project: The soft skill of communication is usually neglected in projects, and as recorded, the biggest shortfall was indeed lack of communication.

The findings of the interviews confirm that an organisation must take into account all groups or individuals who can influence business activities, and that the organisation must concentrate on bringing in value for stakeholders, as also suggested by Freeman (2004). The themes identified above are also in line with the idea, which implies that stakeholders are crucial for the existence of any organisation (Eskerod & Jepsen, 2013). Overall, the outcomes of the interviews seem to suggest that in order to achieve a successful outcome, stakeholder consultation and communication is required at every stage of the project life cycle. Some stakeholders require a close dialogue and continuous interaction to take care of their own interests, and some require only information about project progress (Eskerod & Jepsen, 2013). This understanding is reflected in Pajunen’s (2010) realisation that in order to understand the activities of a firm, one has to understand how the property is produced through the dialogue between the various stakeholders. It therefore can be argued that in order to achieve a successful project outcome, each stakeholder should be given the opportunity to contribute and participate in the developmental process.

In the quantitative part of the study, the respondents were asked to answer 20 questions surrounding the Gauteng e-toll case. Each question was then tested by means of the Z-test where $p \leq 0.01$ to analyze whether the results obtained were statistically significant or not. The Z-test is a statistical test procedure that uses a sample statistic that has a normal distribution (Pallant 2016). Table 1 below depicts the Z-test that was performed to prove that these questions were statistically significant.

Table 1: Z-test score

Question	Test value	Frequency	Proportion	P value
1. The goals and objectives of the e-toll project were not clearly defined.	Disagree	142	0,45	0,10
	Agree	172	0,55	0,10
2. Planned communication sessions should have been conducted to gain and obtain feedback.	Disagree	121	0,40	**0,00
	Agree	179	0,60	**0,00
3. The e-tolls are not affordable.	Disagree	127	0,43	**0,03
	Agree	166	0,57	**0,03
4. Gauteng motorists were involved during the initiation of the project.	Disagree	257	0,86	**0,00
	Agree	43	0,14	**0,00
5. The needs of the stakeholders were assessed during the initiation of the project.	Disagree	250	0,82	**0,00
	Agree	55	0,18	**0,00
6. The stakeholders/community had an opportunity to make inputs and suggestions during the project.	Disagree	274	0,82	**0,00
	Agree	59	0,18	**0,00
7. The government was involved during the initiation of the project.	Disagree	105	0,31	**0,00
	Agree	231	0,69	**0,00
8. The government was involved during the planning of the project.	Disagree	99	0,32	**0,00
	Agree	208	0,68	**0,00
9. When there were challenges, the government was involved in addressing the challenges.	Disagree	242	0,76	**0,00
	Agree	78	0,24	**0,00
10. The e-toll project misled stakeholders due to lack of communication with them.	Disagree	100	0,31	**0,00
	Agree	227	0,69	**0,00

11. The e-toll project is beneficial to South Africa.	Disagree	99	0,31	**0,00
	Agree	222	0,69	**0,00
12. SANRAL has improved the roads of Gauteng.	Disagree	109	0,33	**0,00
	Agree	221	0,67	**0,00
13. Using the e-tolls allows me to be	Disagree	265	0,80	**0,00
14. Using the e-tolls improves the efficiency of using the highways.	Disagree	263	0,82	**0,00
	Agree	56	0,18	**0,00
15. Using the e-toll gantries makes it easier to pay the toll.	Disagree	102	0,32	**0,00
	Agree	212	0,68	**0,00
16. The e-toll fees should have been included in the petrol levy.	Disagree	133	0,42	**0,00
	Agree	185	0,58	**0,00
17. The e-toll should not be in operation.	Disagree	98	0,32	**0,00
	Agree	209	0,68	**0,00
18. Communication was sufficient for the e-tolls.	Disagree	258	0,80	**0,00
	Agree	64	0,20	**0,00
19. The e-toll project is a success.	Disagree	293	0,92	**0,00
	Agree	24	0,08	**0,00
20. As a road user, I have been aware of the entire e-toll project.	Disagree	289	0,90	**0,00
	Agree	33	0,10	**0,00

Spearman's correlation analysis. Note ** Correlation is significant at the .01 level; * Correlation is significant at the .05 level.

Of the 20 questions in the questionnaire, the following were categorised under the variable of project communications management:

- Planned communication sessions should have been conducted to gain and obtain feedback – question 2. Most respondents agreed that not enough communication sessions were held.
- The e-toll project is beneficial to South Africa – question 11. Most respondents agreed that the e-toll project was beneficial for South Africa.
- Using the e-tolls allows me to be safe on the Gauteng roads – question 13. Most respondents disagreed that e-tolls made them feel safe when using Gauteng roads.
- Using the e-tolls improves the efficiency of using the highways – question 14. Most respondents disagreed that e-tolls improved the efficiency of using the highways.
- Using the e-toll gantries makes it easier to pay the e-toll – question 15. Most respondents agreed that using e-toll gantries made it easier to pay the toll fees.
- Communication was sufficient for the e-tolls – question 18. Most respondents disagreed that communication regarding e-tolls was sufficient.

The research objective, when analyzed, comprised three (3) variables, namely project communications management, project stakeholder management and project success. Several significant correlations were found between the three variables. The correlations significant to project communications management were:

- The e-tolls are not affordable ($r = -0.116^*$ with $p = 0.020$; small practical effect, $p \leq 0.05$). See question 3 – associated with the variable project success.
 - The needs of stakeholders were assessed during the initiation of the project ($r = 0.132^{**}$ with $p = 0.006$; small practical effect, $p \leq 0.01$). See question 5 – associated with the variable project stakeholder management.
 - The government was involved during the initiation of the project ($r = -0.103^*$ with $p = 0.040$; small practical effect, $p \leq 0.05$). See question 7 – associated with the variable project stakeholder management.
 - When there were challenges the government was involved in addressing the challenges ($r = -0.141^{**}$ with $p = 0.005$; small practical effect, $p \leq 0.01$). See question 9 – associated with the variable project stakeholder management.
 - The e-toll project is beneficial to South Africa ($r = 0.129^{**}$ with $p = 0.010$; small practical effect, $p \leq 0.01$). See question 11 – associated with the variable of project communications management.
 - SANRAL has improved the roads of Gauteng ($r = -0.108^*$ with $p = 0.030$; small practical effect, $p \leq 0.05$). See question 12 – associated with the variable project success.
 - Using the e-tolls allows me to be safe on the Gauteng roads ($r = 0.129^{**}$ and $p = 0.010$; small practical effect, $p \leq 0.01$). See question 13 – associated with the variable of project communications management.
- The e-toll fees should have been included in the petrol levy ($r = -0.115^*$ with $p = 0.021$ and $r = -0.112^*$ with $p = 0.025$; small practical effect, $p \leq 0.05$). See Question 16 – associated with the variable project success – both questions 11 and 18.
- Communication was sufficient for the e-tolls ($r = 0.119^*$ with $p = 0.017$; small practical effect, $p \leq 0.05$). See question 18 – associated with the variable of project communications management.
 - The e-toll project is a success ($r = -0.129^{**}$ with $p = 0.010$; small practical effect, $p \leq 0.01$). See question 19 – associated with the variable project success.

A value of +1 signifies a perfect positive linear correlation, which means that two (2) variables are precisely related, and as the value of the one variable increases, so does the value of the other. This also means that a value of -1 signifies a perfect negative linear correlation, which means that two (2) variables are precisely related, but as the value of one variable increases, the values of the other decrease. Spearman's correlation (Cohen 1998) was used to reflect the correlations between all the significant questions in the questionnaire and the variables of the

three scales as depicted in Table 2 below.

Table 2

Correlation coefficient measurement scale

Project communications management						
	Planned communication sessions should have been conducted to gain and obtain feedback	The e-toll project is beneficial to South Africa	Using the e-tolls allows me to be safe on the Gauteng roads	Using the e-Tolls improves the efficiency of using the highways	Using the e-toll gantries makes it easier to pay the toll	Communication was sufficient for the e-tolls

Statistically significant correlations (either 95% or 99%) were found (see Table 3 below) with the variable of project communications management, and other questions associated with this variable in the case of question 11 as in table 1 (the e-toll project is beneficial to South Africa – positive correlation); question 13 (using e-tolls makes for safer driving on Gauteng roads – positive correlation); and question 18 (communications were sufficient for introducing e-tolls – positive correlation).

Statistically significant correlations (either 95 or 99%) were found (see Table 3 below) with the variable of project communications management, and questions associated with the variable of project stakeholder management, in the case of question 5 (the needs of the stakeholders were assessed during project initiation – positive correlation); question 7 (the government was involved during the planning of the project – negative correlation); and question 9 (where there were challenges with “the Government was involved in resolution” – negative correlation). Statistically significant correlations (either 95 or 99%) were found (see Table 3 below) with the variable of project communications management, and questions associated with the variable of project success, in the case of question 3 (e-tolls are not affordable – negative correlation); question 12 (SANRAL has improved the roads in Gauteng – negative correlation); question 16 (e-tolling should not be in operation – two negative correlations); and question 19 (the e-toll project is considered a success – positive correlation).

Table 3

Project communications management

Project communications management						
	Planned communication sessions should have been conducted to gain and obtain feedback	The e-toll project is beneficial to South Africa	Using the e-tolls allows me to be safe on the Gauteng roads	Using the e-Tolls improves the efficiency of using the highways	Using the e-toll gantries makes it easier to pay the toll	Communication was sufficient for the e-tolls
Correlation coefficient	0,007	-0,024	-0,024	0,016	0,047	-0,032
Sig. (2-tailed)	0,890	0,629	0,639	0,751	0,348	0,526
Correlation coefficient	1,000	0,080	0,051	0,040	0,060	0,007
Sig. (2-tailed)		0,108	0,310	0,420	0,230	0,893
Correlation coefficient	-0,116*	-0,067	-0,001	-0,033	-0,047	-0,006
Sig. (2-tailed)	0,020	0,183	0,980	0,513	0,347	0,902
Correlation coefficient	0,078	0,058	0,033	0,017	-0,017	0,070
Sig. (2-tailed)	0,120	0,250	0,516	0,741	0,735	0,160
Correlation coefficient	0,132**	0,057	-0,010	0,008	0,047	0,025
Sig. (2-tailed)	0,008	0,257	0,835	0,868	0,352	0,613
Correlation coefficient	0,035	0,032	0,122*	0,036	-0,011	0,008
Sig. (2-tailed)	0,486	0,525	0,015	0,478	0,821	0,867
Correlation coefficient	0,079	0,070	-0,051	-0,035	-0,103*	-0,033
Sig. (2-tailed)	0,114	0,164	0,313	0,491	0,040	0,508
Correlation coefficient	-0,064	0,086	0,074	-0,044	0,016	0,020
Sig. (2-tailed)	0,204	0,084	0,140	0,381	0,755	0,686

correlation Coefficient	0,051	0,129**	1,000	-0,017	0,055	0,034
Sig. (2-tailed)	0,310	0,010		0,731	0,272	0,502
Correlation coefficient	0,040	0,036	-0,017	1,000	0,021	0,027
Sig. (2-tailed)	0,420	0,475	0,731		0,681	0,587
Correlation coefficient	0,060	-0,040	0,055	0,021	1,000	0,050
Sig. (2-tailed)	0,230	0,420	0,272	0,681		0,321
Correlation coefficient	-0,038	-0,115*	-0,081	0,073	0,027	-0,112*
Sig. (2-tailed)	0,449	0,021	0,105	0,147	0,584	0,025
Correlation coefficient	0,052	-0,003	0,074	0,005	0,021	0,034
Sig. (2-tailed)	0,304	0,952	0,142	0,914	0,679	0,498
Correlation coefficient	0,007	0,119*	0,034	0,027	0,050	1,000
Sig. (2-tailed)	0,893	0,017	0,502	0,587	0,321	
Correlation coefficient	0,027	0,055	-0,007	0,053	0,129*G 14*	0,094
Sig. (2-tailed)	0,597	0,274	0,882	0,286	0,010	0,062
Correlation coefficient	0,034	-0,003	0,006	0,035	-0,088	-0,002

(Spearman's correlation analysis. note * correlation is significant at the .05 level; ** correlation is significant at the .01 level.)

In summary, the 11 statistically significant correlations described above (whether positive or negative) seem to suggest that relationships do exist between project communications management on the one hand, and project stakeholder management and project success on the other hand, as demonstrated in the case of the SANRAL Gauteng e-toll project.

The qualitative portion of the research has shown that there is a significant impact of project communications on project success, as discussed above. There is enough evidence to support the fact that stakeholder communication is the key to success or failure of a project. To add, the quantitative portion of the research has shown that statistically significant correlations suggest meaningful relationships between project communications management and project success, as identified in the case example of the SANRAL Gauteng e-toll project (discussed above). In total, eleven such correlations were identified of which four are associated with project communications management, three associated with project stakeholder management,

and lastly four are associated with project success. It can therefore be concluded that project communications management seems to influence project success, as demonstrated in the case of the SANRAL Gauteng e-toll project.

This research finding are also in line with previous research by Serrador (2009) and Berzkalns (2003) where it is emphasised that the communication requirements of a project are the sum of information needs of each group of project stakeholders, and the project manager should use the necessary channels to share the information and, as discussed in the literature, ineffective communication leads to project failure (McLeod et al. 2012). According to Goetsch and Davis (2016), communication may be defined as the transfer of a message that is both experienced and understood. Thus, it describes a message that is conveyed by a sender to a recipient, either verbally or non-verbally, and which may include management tasks, activities and/or relationships. Furthermore, Rajkumar (2010) holds that communication is the key to the success of any project.

4. CONCLUSION

Findings of the current study revealed that project communications management is an integral system in project management. The study results also show that stakeholders do affect outcomes of projects, hence they should be engaged and consulted before projects commence, especially in the case of SANRAL, since most of the government projects also affect the public who proved to have been overlooked in the e-tolling project. Standing, Guilfoyle, Lin and Love (2006) acknowledge that stakeholder communication is one of the parameters that help project managers to lead the project to success. The qualitative findings from the interviews revealed that “lack of communication in the project: The soft skill of communication is usually neglected in projects. The biggest shortfall reported was indeed lack of communication” and “the expectations of all stakeholders should be determined early in the project through consultations to ensure that they are met at the end. The quantitative findings from the questionnaire mainly revealed that respondents agreed that there should have been planned communication sessions to gain feedback about the e-toll (Question 2), respondents agreed that the e-toll misled stakeholders due to lack of communication with the stakeholders (Question 10), respondents strongly disagreed that there was sufficient communication for the e-tolls (Question 18).

This research thus addresses the objective initially stated that incorporating both effective project communications and effective project stakeholder management through engagement and seeking feedback would contribute to the success of projects of the case example of SANRAL. However, attention should be paid to how these issues need to be addressed since, under normal circumstances, it is difficult to balance the needs of all in society as cited by the project managers of SANRAL. Stakeholders are not always committed to every issue during the project life cycle, and they differ on each level of interest. Project managers need to categorise

stakeholders in groups with the same characteristics in order to manage them strategically (Eskerod & Jepsen, 2013).

The future of the soft skills in project management will come on a road full of humps, hills and valleys. There is need to come back to the drawing board in order to draft new directions, bearing in mind the fact that the discipline is relatively young. Other endeavours will include bringing to the discussion table practitioners and academics whose experience in the discipline should be respected and appreciated by both parties so as to develop a framework developed for project managers regarding how to communicate with stakeholders (internally and externally) that needs to be followed throughout the life cycle of each project.

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