

**THE IMPACT OF CLIENT EXPECTATIONS AND BEHAVIOURS ON PROJECT
CONSTRAINTS IN THE MANAGEMENT OF WEB DEVELOPMENT PROJECTS IN
CAPE TOWN.**

by

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Signed

A handwritten signature in black ink, consisting of several overlapping loops and a vertical stroke, positioned above a horizontal line.

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ABSTRACT

Despite the importance of clients in project management, there is a gap in project management literature concerning their impact on project constraints. Project constraints are the boundaries, the line not to cross, the success criteria of every project. A successful project must meet clients' expectations within the project's limitations. It is the responsibility of the project manager and his team to make sure that the end product or service meets project specifications within set constraints. Challenges arise when clients' behaviours and expectations are not perceived as impacting project delivery regarding due date performance and project expenditure.

The research aimed to investigate how clients' expectations and behaviours affect project "success" and influence the project's "progress" in the web development and internet e-commerce industry.

A mixed-method was used to conduct research using qualitative and quantitative methods. Questionnaires and interview questions were distributed to employees working in the industry mentioned above across the Cape Town area.

The research results showed that clients' expectations influence web development project progress and success. The findings reveal that the way clients behave, or act has a negative or positive impact on web development project execution and the overall success of the project. Lack of client consistency regarding project specifications was the main issue leading to scope creep resulting in delays and cost overruns. Clients' behaviours and attitude thus can have positively or negatively influence project delivery, and therefore clients should know this. The main recommendation is that clients should be aware of the impact project changes have on project success and progress before blaming a project team member for delays or budget overruns. The team has the responsibility to inform clients the effect they may have on the overall project progress and success.

Keywords: Clients Expectations; Clients Behaviours; Project Management; Project Constraints; Website Development; Project success; Project progress; Project team.

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DEDICATION

I would like to dedicate this to my Mother **Simone Mouelle** for always believing in me and supporting me. Mum, you were always there for me and sacrifice your time, energy, money to allow me to get the proper education. You are my number one motivational speaker; you always knew what to say so I will not give up on my dreams. Thank you for being my prayer warrior and my confident. Thanks for teaching great values and how to be a good person.

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ABBREVIATIONS AND ACRONYMS

| | |
|--------|--|
| CSS | Cascading Style Sheets |
| HTML | Hypertext Markup Language |
| PHP | Hypertext Pre-processor |
| PMBOK | Project Management Body of Knowledge |
| PMI | Project Management Institute |
| SPSS | Statistical Package for Social Sciences |
| SQL | Structured Query Language |
| URL | Universal Resource Locator |
| XHTML | Extensible Hypertext Markup Language |
| ICT | Information and communications technology |
| PM4DEV | Project Management for Development Organizations |

GLOSSARY

Clients' behaviour: the way clients act or conduct themselves during the project. In this research, clients' behaviours were classified into four types, namely: Actions, Reactions, Attitudes and Conduct.

Clients/customers' expectations: the total perceived benefits customers expect from a company's product or service at the end of the project. It is clients expect or need at the end of the project (Investopedia, 2019).

MySQL: Its name is a combination of "My", the name of co-founder Michael Widenius's daughter, and "SQL", the abbreviation for Structured Query Language.

Project Management: The Project Management Body of Knowledge (PMBOK4ed) defines "project management" as the application of methods, skills, processes, knowledge, tools and experience to achieve the needs and goals of a project (Project Management Institute, 2008).

Project constraints: In project management, a constraint is any restriction that defines a project's limitations (Haughn, 2015). In this study, project constraints refer to: time, scope, cost and quality.

Project success: the completion of the project within the agreed scope, time and budget by meeting the objectives sets. According to Graham M. (2010:207), a project is considered a success if done on time, below cost and conforms to specification; success is related to time/cost/quality performance model.

Project progress: In the dictionary, the definition of progress is "a movement toward a goal; as to go further or higher stage, growth or development" (Dictionary.com, 2019). In this research "project progress" refers to the gradual development or evolution of the project from beginning to the end; progress made on tasks and activities as time goes on toward achievement of the project.

Project team: PMBOK (PMI, 2013:556) defines the "project team" as a group of people working in collaboration with the project manager to achieve the project' objectives. It refers to a group of individuals with different functions working for the same web development project such as designers, developers, content writers, web administrators, project managers.

Website development: Web development or website development refers to the different tasks associated with the creation of websites for hosting via the internet or intranet (Techopedia Inc., 2016).

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CHAPTER ONE: INTRODUCTION TO THE STUDY

1.1. Introduction

The research aimed to explore and understand the impact that client expectations and behaviours have on the management of web development projects.

Nowadays, all organisations or most of them have both a corporate and commerce website to provide information to the public. They use it also to be in contact with customers, to conduct daily tasks and to support their business needs (Čeke and Milašinović, 2015: 219). High-quality web design plays an essential role in attracting first-time and recurrent visitors (Vodnik and Gosselin, 2014:15). Customers these days have become more and more empowered and have high expectations of excellent service. Thus, the need for constant change and improvement has become a necessity for outstanding service in the business environment. It is a challenge for companies to accomplish high customer satisfaction. Mostly when services entail the following: intensive customisation, challenging tasks, remote operations, and contract employees that are influenced by a limited extent (Cook *et al.* 1999; Goldstein, 2003; and Stewart, 2003). Today, organisations can use project management tools and techniques to ensure that final products or services meet clients' expectations and requirements. Moreover, they can also make use of them to ensure that the processes to make the final product complies with the rules and regulations.

Challenges arise when clients' expectations and behaviours are not perceived as fundamental factors for the effective and efficient management of web development projects. This came after realising that it is a complex and sensitive duty to meet clients' expectations. Usually, this is a difficult task to perform as it requires a close relationship between the project team, the project manager, and clients. Project constraints must be taken into consideration while doing a project as they help us rate if a project was successful or not. The team should be aware of the client's

roles in the way things progress on the project and how it affects their work during the project life cycle.

Qualitative and quantitative research methods were used for the collection of data. This mixed research method was done using structured questionnaires (closed and open-ended questions). The semi-structured interview was used to question staff members that work in the web design and development department of a selected internet-marketing organisation in the Western Cape, South Africa.

Ethical considerations during this study resided mainly in the protection of the rights, dignity and anonymity of the respondents and the company in question. At the end of the research, the researcher envisaged that it would enable a better understanding of how project constraints are affected by clients' expectations and attitudes during the project's lifecycle.

1.2. Background of the research problem

In 2015 the researcher did an internship while she was busy doing her coursework for her master's degree programme. The placement was in a company offering Internet Marketing Services. During the ten months internship, the intern observed the following: when a client complains, senior managers or executive managers blamed the project team for the client's dissatisfaction. It led to conflict between subordinates and their managers. The project team felt frustrated, as bosses did not recognize their effort. According to the project team, clients made changes or changed their minds which impacted the final product.

Moreover, if a project is delayed or not successful, the bosses often blame the project managers; managers may shout at people working on the project. The intern was working on a project; it happened that clients could call and ask for changes on their websites anytime it pleases them. It was frustrating as clients initially approved the particular website scope then the final handover website was accepted too. For example, the client asked for some features (or options) to be added or removed on the site, which stops employees from concentrating or working on other

projects. The client was not open to suggestions and wanted his demands to be met, besides the fact that he lacked expertise and technical knowledge on web development and web design. These situations make the work more difficult for the project team. Clients precisely want the site they envisioned to be delivered, which is understandable. Clients want a website to appear exactly according to what they envision, which is understandable. Some of them seem to ignore that some work/tasks are not easy to execute or not achievable at all. Some jobs can be done faster, while others may take more time to complete.

After some time, the intern wanted to understand why executive managers, most of the time, consider the team responsible for delays or incomplete work during the project's lifecycle or process. The intern wanted to understand how clients themselves might have contributed to delays and changes. To what extent managers consider the impact clients may have on the project completion time, project scope, project cost and quality.

1.3. Problem Statement

In project management the project manager is defined as "the owner of the project management plan and therefore, he/she is responsible for delivering the project on time, within budget, and the agreed quality requirements" (Burke, 2010:34). The success of a project can be assessed using time, cost, scope and final product performance. In another words, a project can be assessed as successful or not based how much was spent; how long was take; what was deliver as well as the outcome features compare to the client's original brief. One of the duties of the project manager and his team is to make the project happen. The other responsibility is to make sure that clients get the website they want within time, within budget, while respecting the agreed scope. However, challenges arise when clients' behaviours and expectations are not recognised for having an impact on project constraints, which can affect project delivery, due date, performance and project expenditure.

In project management research, the relationship between clients' expectations and behaviours and the project constraint have not been investigated. The problem here is to determine the influence clients' expectations and behaviours have on project constraints. An organisation needs

to understand to what extent clients may cause failures and delays, how clients may boost the project process and ensure success. The role that clients' expectations and behaviours play in the overall project should be considered to help the organisation prevent conflicts arising from clients' actions and decisions during the project. The problem comes when management does not recognize the influence that clients' expectations and behaviours may have on constraints in the website development and design industry.

The research problem was to understand to what extent clients may affect overall project success; by investigating how clients' expectations and behaviours impact project "success" and influence project's "progress" in the web development industry.

1.4. Research objectives

- To investigate how the client's expectations and behaviours affect project constraints in the web development industry.
- To explore the influence that clients' expectations and behaviours have on the management, the progress and the success of web development projects.

1.5. Research Question

1.5.1. Main research question

To address the research' aim in the context of the problem statement, the main research question considered is:

Are project constraints, and project progress influenced by clients' expectations and behaviours in the management of web development projects?

1.5.2. Research sub-questions

- What are the effects of clients' expectations on web development project schedule, budget, scope and quality?
- How does the way clients act or conduct themselves during the project affect project constraints?
- What influence do clients' behaviours and expectations have on the progress, completion and success of web development projects?

1.6. Research Design and Methodology

A mixed-method approach was used to conduct the research, using qualitative and quantitative methods. Questionnaires and interviews were distributed in different web development organisations in Cape Town.

The target population was in several Internet marketing service companies (digital strategy and online execution agencies) in Cape Town, South Africa. After collecting answers from the selected company, it had become crucial to get in contact with additional companies. The reason why additional companies' responses were needed is because companies contacted had a small team or not enough employees which was stopping the researcher from getting enough answers for the quantitative research part. Therefore, interacting with several organisations was the solution to get enough data to fulfil the investigation purposes. The following step was to look for more web designer companies using google search and advertising magazines to find as many as possible. The objective was to get more people available to respond to our questions and take part to the research.

Empirical research comprised interviews with team members, stakeholders and project managers. The researcher worked in collaboration with the project leaders and asked questions to web developers with regards to the research questions.

The researcher used clear and easy-to-understand words and language in interviews and questionnaires to make sure participants understand the question before they answer it.

Questionnaires' responses were analysed then those were not filled in correctly were rejected to avoid a wrong conclusion during the data analysis.

1.7. Ethical considerations

Saunders et al. (2009:183-184) define ethics as “the appropriateness of your behaviour concerning the rights of the subject of your work or who are affected by it”. Research ethics involves protecting the dignity of the respondents and the publication of their personal information in the research.

To undertake the collection of data, the Faculty of Business and Management Sciences Ethical Clearance Committee at the Cape Peninsula University of Technology had to deliver an ethical clearance certificate. The respondents were informed of the research's objective; then their consent to take part in this research was sought. It is important to note that, data were only collected once ethical clearance was obtained.

The ethical issues related to this study mainly reside in data collection. The data collected via interviews were subject to the approval of the selected organisations to ensure that it does not violate the organisations' privacy and confidentiality policies. Additionally, the interviews questions were subject to approval to ensure they do not reveal any information that might affect the reputation of the organisation, or any private information to its competitors. To get approval from selected organisations the researcher had to contact managers and explain the purpose of the research and had to agree on a date and time. Moreover, when needed, questionnaires had to be sent to managers ahead of time to show the types of questions they could expect. The dates and time to interview employees were discuss in advance to avoid disturbing their working environment and timetable. Everything concerning the interviewees and the organisation was treated as confidential and reported anonymously.

The transcribed interviews were subject to revision by some of the respondents to ensure that responses collected were captured accurately; This was done to determine the validity of the

results of the study. A trial questionnaire was sent to allow us to adjust and adapt our questions based on their feedbacks.

Statements or questions asked during the interviews were presented as collected and were not changed in any way to suit the study or affect the results. The university code of ethics for research was a guideline for the researcher to avoid ethical issues during the research process and the collection of data. Other ethical considerations relate to the accuracy of the information and results presented in the study were also fulfilled.

1.8. Data Analysis

According to Antonius (2003:2), the word "data" refers to facts or information collected systematically for research purposes. After collection, they are organised and recorded to allow the researcher to interpret the information collected correctly. Data are not collected randomly or by chance but in response to questions that the researcher wishes to answer. For Schostak and Schostak (2008:10) it is essential to capture data accurately; they mentioned that data are not given as fixed but are open to reconfiguration and thus alternative ways of seeing or finding answers to questions one wishes to answer.

The researcher used content analysis to code the responses by analysing the data through the three following steps: organising data, summarizing data and interpreting them through the lenses of literature and the underpinning theory (Ary, Jacobs and Razavieh, 2002:465). Krippendorff states that the content analysis research technique is used to help the researcher make replicable and valid results by interpreting and coding textual material (Krippendorff, 2004:18). The validity of the findings was checked by comparing responses made by a respondent with answers in other areas of the interview and responses from other respondents.

After capturing all the necessary data, the results were presented, discussed, and recommendations were drawn up.

1.9. Delineation of the research

In 2016, Korrapati mentioned the following in his book: “the delimitations are those characteristics that limit the scope and set the boundaries of your study”. Limitations are potential weaknesses in your study. The delimitations are in your control, while constraints are out of your control (Korrapati, 2016).

The population in this study comprised managers and subordinates who were working in several companies in the internet e-commerce industry in the Western Cape, South Africa. The research study was limited to the Western Cape. The population target was employees involved in web development and design projects. The number of employees targeted for the study was 100.

1.10. Significance of the research

- The purpose of the project is to satisfy clients' needs which can be met faster and more efficiently if the impact that clients may have on the execution and overall success can be understood in web development projects helping organizations to see things differently.
- The behaviours and the way clients perceive situations have an influence or determine the success or failure of a project, specifically in web development projects. The hope is that organizations will understand what effects clients' expectations and behaviours have on projects.
- If companies can understand the impact that clients have on time, cost, scope, and quality, they can prevent, justify, or understand project failures related to clients' expectations and behaviours.
- In project management, specifically within the web industry, it will reveal the circumstances in which a client may influence project completion or success despite the skill or expertise of the project manager and project team.

1.11. Expected outcomes, results and contribution of the research

The research holds benefits for organisations chiefly to understand the effect clients' expectations and behaviours might have on project constraints to help them prevent delays and misunderstandings during a project. The purpose is to determine how a client's actions, reactions, conduct affect the project constraints (time, cost, scope and quality) which influence progress and success. Furthermore, to find out how expectations affect overall project constraints. The findings can help web development organisations to understand the impact clients have on project completion and success. Lastly, to determine what is it that clients do or do not do, which lead to conflicts, misunderstanding, delays, over budget, scope creeps, demotivation.

1.12. Limitations and constraints

- It was difficult to contact web designers and web developers. They are very busy people and answering questionnaires takes more time when surveys were sent digitally. Sometimes, the researcher also went with printed questionnaires to get quicker responses, but transport was an issue to consider.
- Web developers have demanding schedules; they have specific deadlines for their projects, therefore taking time to help the researcher was problematic.
- One constraint was time because it was hard to determine how long it will take to collect data and to analyses it after struggling to get quick responses from participants. Getting answers at a slow rate was delaying the data analysis process as the researcher had to wait to collect all questionnaires to start analysis and coding.
- Some participants (employees/clients) did not have time or did not take time to answer questions correctly and gave inaccurate answers: they answered just to get done with the interview/questionnaire as quickly as possible.

➤ Learning new skills and techniques like SPSS was not easy. Learning to do research was challenging. To write the thesis, the researcher had to attend seminars and watch videos to get knowledge. The researcher had to know and get knowledge about the different methods used before deciding which one to use.

1.13. Conclusion

Chapter one is an introduction to give an overview of the topic and the study. The research focuses on exploring and understanding the impact of clients' expectations and behaviours on project constraints, which affect project progress and success. The research focused on the web design and development industry in Cape Town, which is a growing industry with the explosion of the digital world, e-commerce and online marketing. The role that clients play in project completion is an exciting topic as a company needs to understand to what extent clients may affect the course of actions during a project mainly how they affect the project constraint such as time, cost, scope and quality.

CHAPTER 2: LITERATURE REVIEW

2.1. Introduction

This chapter presents various insights from the body of literature that discuss clients' expectations and behaviours on the management of web development projects. It focuses on the relationship between project management and web development, the evolution of the internet and the role of clients in web development projects. The chapter is structured into three major thematic areas. Firstly, it gives an overview, and general discussion on the World Wide Web (www) commonly referred to as the internet. Secondly, it discusses project management both from a broad perspective and from an internet e-commerce industry perspective. Thirdly, it discusses the constraints and challenges faced in web development projects.

2.2. Internet and the Web

Information technology connectivity has a massive impact on today's society, and on the manner, people use technology. Computers allow people to gather and analyse information; then use the information to make informed decisions. Advancement in technology enables us to communicate with other people around the world without much effort, thanks to the growth and sophistication of computer networks (Severance, 2015). Nowadays, clients can interact with companies in innovative and advanced ways because of the progress in Internet technologies and related applications. More businesses invest in customer-directed online source technologies to accrue their share of the online marketplace (Al-Qeisiet al., 2014: 1). Vila and Kuster (2011) observed that companies allocate a lot of energies or efforts to improve their website's design which enhances the quality of customers' interaction experiences. They are investing time, money and effort to ensure clients get the best services mostly in a competitive business world.

The world's largest network is called the internet: a worldwide collection of computer networks that houses information on a multitude of subjects (Gao, 1999a). It is decentralised and comprises

millions of public and private, academic, commercial and governmental networks, which are themselves grouped into autonomous networks accessible to the public (Gao 1999b). The integration of various systems was made possible by a standardized set of data transfer protocols, which enables the development of multiple applications and services such as e-mail, instant messaging, peer-to-peer among others (Severance, 2015).

According to Shelly and Woods (2008) reveal that over four billion web pages are available on the World Wide Web, where Google is the most popular search engine. The World Wide Web, often confused with the internet by the public, is only one of the many applications of the internet (Lowe, 2016). Commonly referred as “the web”, it is the part of the internet that supports multimedia and comprises a collection of linked documents referred to as web pages or page information (Shelly and Woods, 2008).

2.3. Types of websites

Website design is significant in today’s business world. In 2013, Cebi wrote that organisations need a useful website as it plays an important role allowing them to promote their services or products in a competitive and limited market to maximize their profits. Web design is defined by Christensson (2013) as the process of creating websites. It includes different characteristics such as graphic design, webpage layout and content production. Moreover, the terms “web design” and “web development” are often used interchangeably, web design is technically a sub-section of the broader category of web development (Christensson, 2013). Five areas cover the main facets of web design: content, visuals, technology, delivery, purpose (Powell, 2001).

A website is the related assemblage of several web pages that are created and maintained by an individual or an administration (Lowe, 2016). The Cambridge dictionary defines it as “a set of pages of information on the internet concerning a specific subject, published by a single person or organization” (Cambridge University Press, 2019). There are different kinds of websites.

2.3.1. Static versus dynamic websites

Websites can be classified according to their flexibility in accommodating new changes in content. This classification yields two types of websites, i.e. static websites and dynamic websites (Odom, 2004).

- ❖ Static websites: these are sites made only using the languages allowing the display of the pages on a browser (example HTML, XHTML and CSS). They work very well, but their content cannot be updated automatically. The owner of the site (the webmaster) must change the code so it can add new features.
- ❖ Dynamic websites: more sophisticated and use other languages besides those that allow just the simple display (for example PHP, SQL and MySQL). The content of these websites is said to be "dynamic" because it can change without the intervention of the webmaster. Most of the websites today are dynamic sites.

2.3.2. Website type by function

In 2010, websites were distinguished based on their function. The author Graham presents eight different types of sites shown in the table below.

Table 1. 1: Types of website by function

| Type | Uses |
|---------------|--|
| Web blog | It is like a diary of information. Content is mainly personal articles on specific topics and views shared by an individual or organisation. |
| Personal | Created by an individual to reveal Personal information; also used for self-promotion; to express own opinions. |
| Informational | Informing the public or a specific audience about a product, organisation, news, services, etc. |

| | |
|---------------------------|---|
| Sharing website | It allows users to share and store of multimedia (videos, pictures, presentations, music, Apps etc.) File sharing website such as Dropbox and Google Drive are among the most popular sharing site. |
| Mobi sites | Any websites fine-tuned for mobile devices. It is when a website as the ability to be accessible from any devices such as smartphones, smart TVs and desktop computers. |
| E-commerce and catalogues | Display products, services offer by an organisation and support online transactions enabling people or organisations to buy and to sell products online. |
| Social networks | Social interaction, the kind of electronic information where online communities are formed. Allowing users to share photos or videos; to send personal messages, stay connected with loved ones and colleagues. Facebook and LinkedIn are two examples of social networking websites. |

The above categories are, however, not mutually exclusive as a typical website can contain at least four to five functions mentioned above (Graham, 2010:207).

2.3.3. Websites and business

According to Newman and Warren (1961) "Management is the set of methods used to transform the resources of an organization, (money, material and people), into products and services". The web became an integral part of operational, tactical and strategic management with a range of uses in sales, marketing, product support, communications, finance, banking, insurance and many other areas (Lowe, 2016). Businesses use websites for advertising or selling their products and services globally while in operations, they use it to provide technical and product support for their customers (Goel, 2007). In today's business world many companies use their websites to support electronic commerce (e-commerce) which is known as the buying and selling of goods and services over the internet (Shelly and Woods, 2008). Now e-commerce is a normal part of doing business (Goel, 2007). Other organisations use websites to distribute information and to communicate with the public (Odom, 2004).

2.3.4. The World Wide Web and convenience

The World Wide Web has also created convenience even to the non-business sectors (Graham, 2010). It enables people and organisations to share information conveniently without the hassle of travelling or organising physical deliveries (Graham, 2010). It also supports online transactions that allow people and organisations to achieve various tasks from remote places (Goel, 2007). These online transactions are wide-ranging and include social transactions, academic transactions, business transactions and many more.

2.3.5. The web as a computer network

A computer network is a set of computers connected and physical connections to allow the exchange of data between remote computers (NDTA 2013). The web is a network, and so are the intranet, extranet and the internet. There are several criteria used to classify networks. Classifying them by the distance amongst connections, there are three types of networks (Apposite Technologies, n.d.):

- LAN (Local Area Network): Local area networks
- MAN (Metropolitan Area Network): Urban Community Networks
- WAN (Wide Area Network): General Networks

A WAN is a network covering a large geographical area, typically on the scale of a country, a continent or the entire planet. The web is a WAN because of its global stretch. It differs from a Local Area Network as this covers a comparatively narrow geographical area usually a five-kilometre radius. A Metropolitan Area Network covers a relatively full urban community like a city or large town.

2.3.6. Networks definition by accessibility

Web networks can also be classified by accessibility to the public. The Internet, intranet and extranet are the three general types of networks (Keogh, 2001:215). Table 2.1 below summarises these.

Table 2. 1: Type of networks by public accessibility

| Type | Access | Users | Applications |
|----------|---------|--------------------------|---|
| Internet | Public | Anyone | Share information (personal information, product catalogues, course information, etc.) with the public. |
| Intranet | Private | Members or employees | Share information (forms, manuals, organization schedules, etc.) with employees or members. |
| Extranet | Private | Select business partners | Share information (inventory updates, product specifications, financial information, etc.) with partners and customers. |

Severance (2015:4-5) describes the internet as a public information and communications network. The intranet, on the other hand, provides information to internal teams. It is giving management the possibility to communicate with staff on a real-time basis (Lowe, 2004 and Severance, 2015); it is allowing people to communicate and get quick responses within the organisation. It enables organizations' employees to share data and collaborate among them (Lowe, 2016). The extranet provides information to specific stakeholders whose access is usually password protected. Companies can then be able to integrate the supply chain, linking suppliers and customers as well as other preferred stakeholders (Lowe, 2016).

2.3.7. How the web works

The Web is a client-server system where a personal computer, equipped with its internet navigation software (Internet Explorer, Firefox,) plays the role of the client (Severance, 2015). The remote computers which host websites are called servers. Customers and servers, connected to the Internet, communicate with each other (Comer, 2018:290).

When entering a website address (called URL) into a browser or clicking on a hyperlink, the browser sends a request to the server that will process it and send back the requested data (web page, image, video, ...). The browser interprets the received data and displays it on the screen (NDTA 2013).

2.3.8. Skills and expertise in web development

A lot of planning and expertise are required to set up the various components of the web (Wallace 1999a). In term of websites, web marketing skills are needed to define the objectives of the site, particularly on how it will attract and retain targeted users (Goel, 2007). To design a website, skills in web designing are required. HTML integration skills are also necessary for a site that deploys quickly and correctly on all browsers (Friedlein, 2001). Content integration skills are critical for the development of a website that is easy and pleasant to read while Search Engine Optimisation (SEO) help to optimize the site's search engine visibility and to rank (Friedlein, 2001). Several other skill sets are also required, including web security skills, transaction processing skills (Shinn, 2004 and Friedlein, 2001).

The integration of various experts with different yet highly interactive skills and tools requires an equally integrated management approach if the set web development objectives are to be met (Shinn, 2004). Additionally, there is the need to manage ever-changing requirements of software and web development that add further sophistication to the already complicated process (Friedlein, 2001). Project management is highly considered as a management approach that can handle the above challenges (Shinn, 2004).

2.4. Project management

2.4.1. A brief history of project management

The project management era dates to 1950s and can be traced to the United States of America's military, aeronautical and space technology development needs (Carayannis, Kwak, and Anbari, 2003). The trio further states that most of the information technology industry adopted project management in the 1980s to manage complex software development projects.

Collins (2015), however, argues that the origins of project management can be traced back to the ancient days of the Roman Empire. The need to construct superstructures motivated a complex inter-organisation of skills such as architecture, masonry, carpentry, and management. Collins (2015) admits that modern project management is, however, more observable from the 1900s and 1950s when tools like the Gantt Chart were invented.

Today, project management principles are applied in different kinds of industries and have greatly improved through information technology (Young, 2006). The rapid technological advancement, in ICT and globalization, has contributed to the growing demand for project management solutions (Aadamsoo, 2010:18). In the contemporary business management world, project management skills have become a critical and integral part of an organisation's skills inventory (Turner, 2004a). Dobson states that (2004) history showed us that most of the projects have several things in common such as requirements, designs and constraints. Their success depends on communication, ethical decision making and the combination of creative and logical thinking.

2.4.2. The importance of project management

A project can be defined as the achievement of a specific objective; it involves a series of activities and tasks which require resources. A project must be completed within a set of specifications, defined scope and resources as well as a defined commencement and finish time. Besides the fact that a project is executed over a fixed time, it is limited by costs and other limitations as well (WebFinance, 2016a). Another definition by the Project Management Body of Knowledge

(PMBOK 4ed) states that a project is a provisional endeavour done to create a unique product, outcome, or service (Project Management Institute, 2008).

According to Lester (2014:7) a team or a group of people will work together to complete a project; knowing that the purpose of project management is to achieve the project objectives within agreed criteria of time, cost and performance through planning, monitoring, and control of all of the project's features and the motivation of all those involved therein. Today's companies, governments and non-profit organisations recognise the need to use modern project management techniques to be successful. They realise that some project management concepts will help them on their daily basis tasks while working with people and technology (Schwalbe, 2015: 3). The above statements reveal that project management skills and techniques are used to ensure project success and completion regardless of the type of industry; it is about making sure that clients get what they need on time and budget. No one starts a business or a project to fail; therefore, all the necessary steps to ensure success and reduce failures or delays must be taken and implemented.

2.4.3. Defining a project and project management

Young (2006) defines a project as an activity or set of activities with specific goals and objectives and a defined start and end period. A project can also be described as a planned course of action with defined milestones expected to be completed within a specified period (Nagarajan, 2004). Project' principal mission is to combine different people work in a coherent manner useful for the accomplishment of given objectives (Errihani, Elfezazi and Benhida, 2015:191).

Project management has been defined as the management of a project, i.e. planning, leadership, organising, coordinating and controlling a set of activities that have a predefined start and end period and a list of specific goals and objectives (Young, 2006 and Nagarajan, 2004). Some scholars have also defined project management based on what is now term the project management pyramid. Dobson (2004) states that project management is the science of managing three constraints of a project, namely costs, time and specification. Cost, time and specifications are the core facets of a project and its success; a project is defined by the extent to which it meets

the allocated costs, is completed within the set time and meets the specifications set. Project management can also be described as a process of managing change in organizations (Turner, 2004b).

2.4.4. Project Team

A team in project management refers to a group of people brought together to carry out activities that contribute to the accomplishment of a common task-related objective or goal. A lot of companies will have a team which will be composed of skilled employees from similar or diverse function areas to work on meaningful projects (WebFinance, 2016b). Fuller, Valacich and George (2008), state that in a project, team members usually come from different groups or functions and are assigned to do activities for the same project. Furthermore, a team is divided into sub-teams according to the diverse needs of the project. Project teams are most of the time in use for a precise period.

The performance of a project can be measured based on the quality and timeliness of the team meeting the expected deliverables (Narayanan, Balasubramanian and Swaminathan, 2011: 510). The project Team plays an indispensable role in project success. Therefore, the project team needs to understand and agree on what short-term tasks must be accomplished to achieve the long-term objectives (Kappelman, McKeeman and Zhang, 2006:35). Short tasks in a project are at a lower level in the project hierarchy or project “Work Breakdown Structure” meaning that the lower level must be completed for the higher-level tasks to be achieved. The team has the responsibility to make things happen for the good of the project; they are the one making sure that clients get what they want with the agreed time and budget.

2.5. Web development projects

The technology improvement of our generation led to high demand for websites as they allow organisations and businesses to boost their presence around the world, to increase their

communities by reaching more people, to build a relationship with their clients and communities. The results of the above gave birth to web development projects. Web development is a broad word for any activities related to the construction or building of a website for the World Wide Web or an intranet. It could incorporate website design, e-commerce business development, website content development, client-side/server-side coding, and website server configuration (Techopedia Inc., 2016). However, among web professionals, “web development” usually constitutes the non-design part of creating websites, for example, writing mark-up and coding. According to Sfetcu (2014: 1930), web development ranges from the development of the most straightforward website to the most complicated one; simplest site refers to a single static page of plain text while complicated website refers to most complex web-based internet applications, electronic business, or social network services. Besides, two authors state that web development, or web programming, is the process of designing software applications for a website (Vodnik and Gosselin, 2014: 15).

To enable website functionality, web development is the coding or programming that is needed according to the owner's requirements. The web development hierarchy is as follows (Techopedia Inc., 2016):

- Client-side coding
- Server-side coding
- Database technology

It was observed that due to current trends in the business world, the demand for more complex web applications has increased. However, the common issue faced by web application managers and developers is when they need to estimate the development time, effort and cost of the projects based on the customer's requirements (Čeke and Milašinović, 2015: 219). Ahmed (2016:229) states that highly structured project management methods are required in software product development for large software products. He adds that project management is a necessity to manage a large-size team involved in software development projects.

Within the web development domain, there are different types of possible projects. Most of them, however, fall into one these broad groups: new websites development, new mini-site development, existing website redesign and new web application development (Sheffield, 2009: 26 – 27).

Kulik and Samuelsen categorise website-related projects into three types: construction projects, remodelling projects, and maintenance project. The pair terms these “e-projects”: e-projects are any project that involves creating or changing source code that is deployed on the internet (Turner, 2004c:19-20). Table 2.2 below summarises these projects.

Table 2. 2: e-Projects

| | | | |
|--|-----------------------|---|--|
| Types of e-projects according to Peter and Robert (2001) | Construction projects | It is the initial build of any webspace. These are the closest to conventional projects with cost-benefit analysis, designs and approvals, and contracts. | <ul style="list-style-type: none"> • They can take months to deliver. • The authors liken them to the construction of a new house. |
| | Remodelling projects | These add new features to an existing space. Because of the dynamic modularity of HTML, new features can be combined with little disruption, and be immediately available to users. | <ul style="list-style-type: none"> • Typically, they take weeks to deliver. • Like building an extension to a house. |
| | Maintenance projects | These correct bugs or make minor changes to keep the information current. | <ul style="list-style-type: none"> • They take days, or even as little as hours or minutes to do. • They are like redecorating or repairing a house. |

Source: (Turner, 2004d: 20)

2.5.1. Websites and competition

Competition for an audience is one of the primary drivers of high website design project results (Goel, 2007). According to Shinn (2004), in today’s business world organisations have been forced to design websites that perform better than their competitors because of the growing popularity of internet shopping custom. Research suggests a website which is easy to use shows

higher rates of purchasing (Johnson, Bellman and Lohse, 2003). A website acceptance is influenced by its perceived ease of use and other site-related factors. Kwon and Lennon (2009:377) believe that a website that meets the following criteria will motivate visitors to use it and return to it: easy to use; an excellent online brand image strategy; well design and delivers a compelling experience.

According to Huizingh (2000), enough evidence is available to prove that the internet is a useful tool for commercial purposes. However, there is no guarantee that competitive advantages are possible by doing online business only. The success of e-commerce firms depends on a high amount of people visiting their websites; then buying their products, and, more importantly, becoming repeat customers (Smith and Merchant, 2001). At the same time, the fact that customers have many alternatives websites that they can visit increase the level of competition. There are almost no barriers because it is easy for customers to switch from one site to another if performance is unacceptable (Bhatti, Bouch and Kuchinsky, 2000)

The competitive pressures in the markets drive clients to demand high-quality services in web development projects to gain a competitive advantage (Chaffey, 2009:306). Service quality is usually defined as how well a delivered service matches customer expectation (Afthanorhan, Awang, Rashid, Foziah and Ghazali, 2019:14). In a framework from IS and marketing literature, Liu and Arnett (2000) identify four critical factors to ensure the success of an e-commerce website: quality of the information; system use; playfulness and system design quality. It is essential for companies that accurate information is provided on their site; as well as informative, updated and relevant to customers' needs. A good website contains enough information presented in a user-friendly manner (Cao, Zhang and Seydel, 2005). Therefore, companies must consider all those criteria while designing their business website to ensure customers satisfaction as well as increase profit.

In designing an e-commerce web site, a more practical approach, which however remains underutilised, is to focus on the end user's perceptions of an ideal website. These can guide designers to implement what end-users expect to find on a website and increase the probability of a website being well-received by the target market groups. While structural design issues are

important, the end user's perception of a website makes a distinction between a successful and an unsuccessful web project (Cao et al., 2005:653). For Barnes and Vidgen (2001:27), a website should be evaluated from a customer's point of view using WebQual. They define WebQual as a method to help companies to assess the quality of web sites.

2.5.2. The success of web projects

One of the objectives of many e-projects, particularly internet and extranet projects, is to achieve global reach, to access customers or suppliers in much broader, more diverse market segments (Goel, 2007). The probability of implementing a successful e-project, including web and software development, is generally considered to be low (Shinn, 2004). One reason could be the fact that in the minds of people who evaluate project performance, they have different perception when it comes to defining success. Generally, external stakeholders to the project organization evaluate project success based on target costs and time while internal stakeholders assess success based on the attainment of the scope of development (Agarwal and Rathod, 2006:361).

Bannerman (2008) Herein lies a difficulty; the success of a project can be determined from two different angles: the first one is from the perspective of the means (the project itself); the second one is from the end (what it was intended or expected to accomplish) depending on the interests of the stakeholder. Moreover, according to the PM4DEV (2014:176) states that the determination of success is highly dependent on the expectations and perceptions of different stakeholders, also on when the assessment is made. Expectations of what the project was supposed to achieve and opinions of whether it was completed or not often vary among stakeholders regardless of means or end. The success of web projects can be determined by the clients who requested the website; by the end-users who will use the site and by the management who will evaluate team performance.

2.5.3. Client expectations in web projects

According to Bannerman, (2008:2) in most of the projects, various stakeholders have different views on the purpose of the project and different expectations of what the project must achieve.

Each stakeholder has a vested interest in the project's outcome, with different expectations and perceptions. Stakeholders might include the following: people who initially identified the need for the project; project sponsors; project end-users; the people impacted by the project and its outputs; team members, and the people who must oversee the project.

Various authors have discussed what clients expect from a web development project. The table below summarises the several views of authors.

Table 2. 3: Client expectations on websites

| Attribute | Cited authors |
|---|---|
| High quality, original, accurate and detailed content | Porta (2009), Krauss (2003), Bensedrine (2005), Tan and Tung (2003), Signore (2005) |
| Meet the target audience's needs | Porta (2009), Tan and Tung (2003), Signore (2005) |
| Easy to navigate through and use | Porta (2009), Krauss (2003), Bensedrine (2005), Tan and Tung (2003) |
| A professional outlook (colour, images, fonts, structure) | Porta (2009), Bensedrine (2005), Tan and Tung (2003), Signore (2005) |
| Upload and download speed must | Porta (2009), Krauss (2003), Bensedrine (2005) |
| Well-ranked by search engines | Porta (2009), Signore (2005) |
| Adequate external links | Porta (2009), Bensedrine (2005) |
| Interactive communication systems | Bensedrine, 2005 |
| Feedback mechanisms | Bensedrine, 2005 |
| Error or bug-free | Bensedrine (2005), Tan and Tung (2003), Signore (2005) |
| Secure from external threats | Bensedrine (2005), Tan and Tung (2003), Signore (2005) |
| Easy to upgrade and maintain | Tan and Tung (2003), Signore (2005) |
| Cost-effective | Signore (2005) |

Source: various

2.5.4. Web development process

The “project lifecycle” refers to a succession of actions or activities that are important to realise project goals or objectives. The size and the complexity of projects differ, but no matter how large or small they are, every project can be mapped to the following lifecycle composition (Project Management Institute, 2008): Beginning of the project; Managing and preparing; Implementing project work and Closing the project.

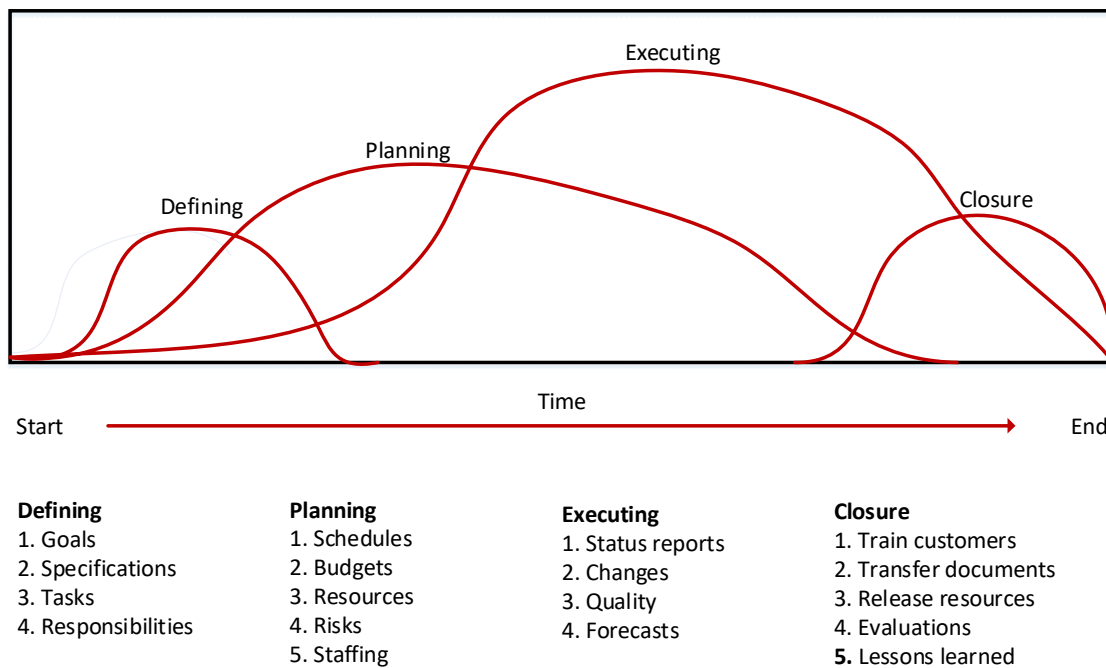


Figure 2.1: Project Lifecycle (Larson and Gray, 2010: 7)

As shown in Figure 2.1 above, projects are broken down into phases. It is done to ensure control and to manage processes effectively. The project lifecycle can be divided into four stages, such as initiation, planning, execution and closure (Larson and Gray, 2010: 7-8). The four phases will be divided into sub-phases to make it easy to manage and control, as well as to plan better.

The project life cycle may be slightly different depending on the type of industry or type of project undertake; Therefore, the web development project life cycle has the following phases: planning, analysis, design and development, testing, implementation and maintenance (Shelly and Woods, 2008). These steps or processes may also be termed proposal phase, discovery phase, analysis phase, design phase, build phase, test phase, maintenance phase (Sheffield, 2009). Despite the differences in process names and techniques used by different web development teams, the processes generally follow the same sequence.

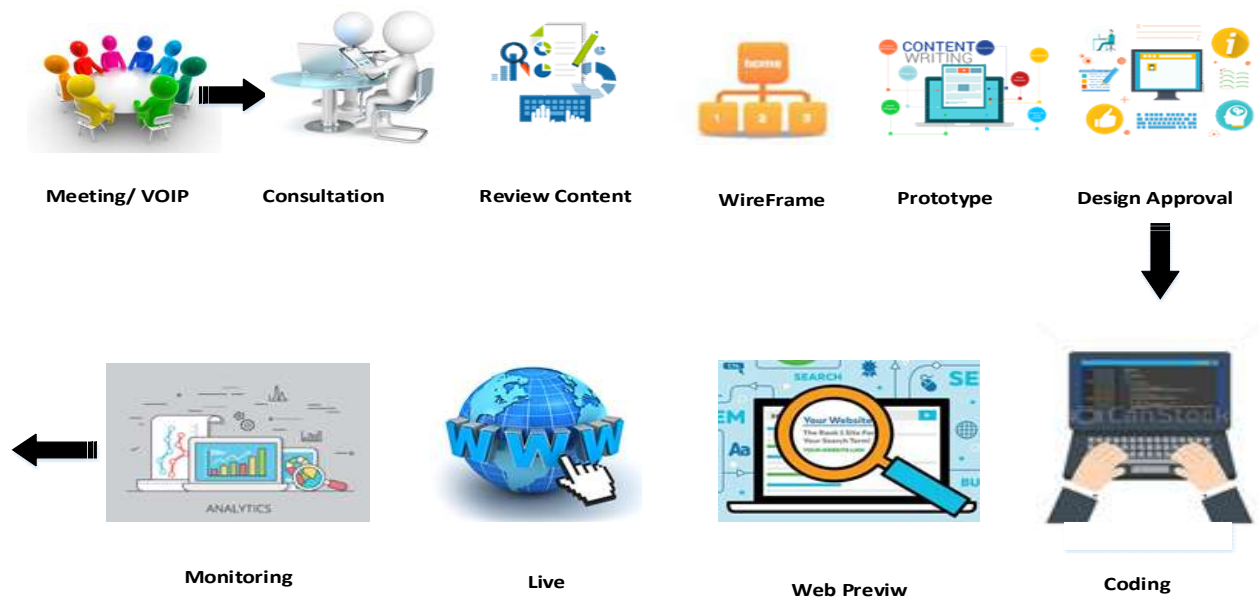


Figure 2.2: Website Development Process (Tommy House Studios, 2019)

The proposal establishes the tone for the entire life of the project, which is set during the project definition phase and makes it, therefore, one of the most vital stages (Emond and Steins, 2011). According to Knowlton (2012:42) the beginning of the project is an important time for a project; it is the time where project’s expectations are set, and objectives clearly defined to enable evaluation of project’s success. Writing a clear project brief is also crucial in the assessment of the project. It will include project objectives, target audience, timescale and functional requirements needed to meet the project’s goals. A proper briefing is key to the success of a

project. Usually, the main tasks that need to be performed during briefing include gathering and capturing the client's requirements as well as translating them into concepts for project solution. During the briefing, the design team plays crucial parts in empowering clients as they suggest possible courses of actions that might be taken to meet the client's specifications (Barret and Stanley, 1999).

Figure 2.3: below summarises the main phases on a web project life cycle discussed by Farkas (2009a:9). The Planning Phase is the first phases and "ongoing support" is the last one, where the project is handed over to the client.

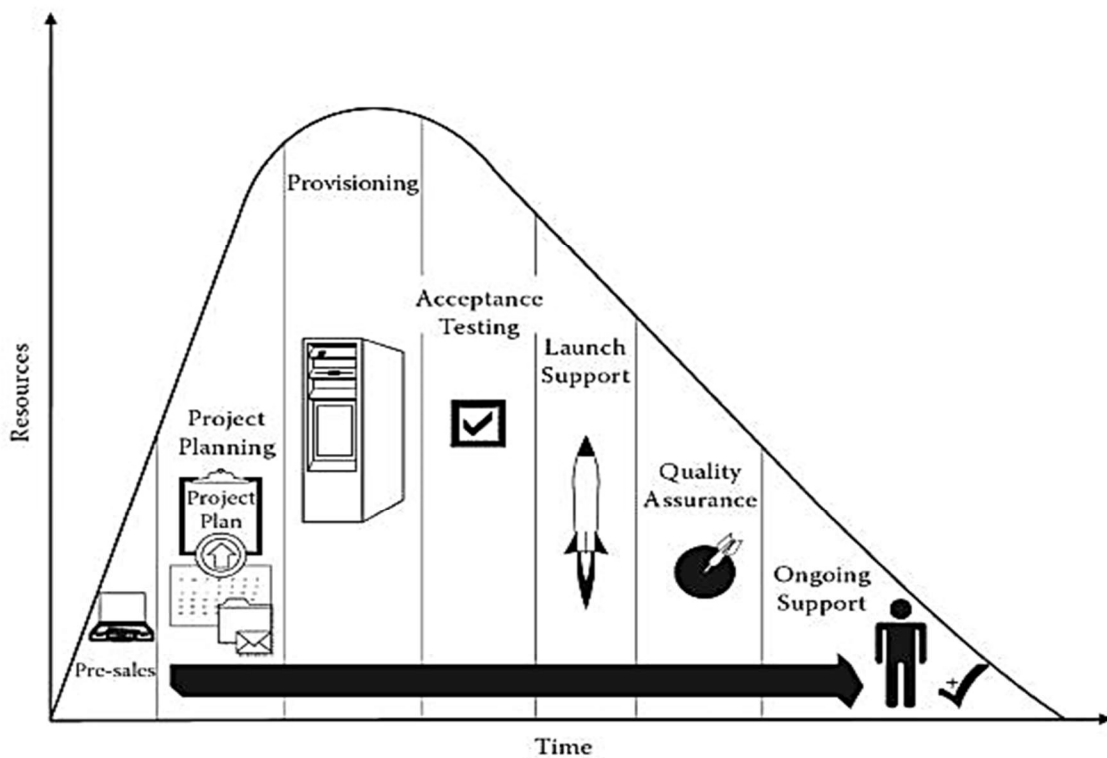


Figure 2.3: Website Development Project Lifecycle (Farkas 2009b:9)

Farkas (2009) highly recommended that post-project reviews be completed to help us assess the project process, evaluate the project team and provide feedback to the organization project manager. Farkas added that post-project reviews are indispensable for continuous improvement;

they give team members the chance to identify lessons learned from a project (to avoid repeating the same mistakes) and best practices for future projects.

2.5.5. Teams in a Web project

Web development is done by in-house development groups or web development agencies; In-house refers to people forming a team and working for a company who take care of its website (Shinn, 2004). They generally work on the same internal webpage most of the time. Web development agencies are outsourced to work on several different websites. Unlike in-house development teams, web development agencies must do a lot of work on the proposal and selling to get new clients and new work (Sheffield, 2009).

Web application development projects are usually large and complex projects with lots of people moving in and out as needed (Friedlein, 2001). Every project has different needs, but most have someone acting in the following roles: sponsor/client; project manager, art director, technical leader, information architect, content strategist (Sheffield, 2009). It is essential to have a client-design team relationship as it helps the designer to understand better and motivate clients to participate actively during the briefing process (Strauss and Hogan, 2001). It involves assessing clients' knowledge and experience and their requirements for the proposed project.

Shinn (2004) mentioned that client involvement in the project is vital as the quality of service that a client receives in web development is partially dependent upon the client's participation. Clients are the experts in their organisations' business and operations, and because of that, they need to be empowered to contribute objectively (Wallace, 1999b). Empowering clients allows the team to get more intel from clients as they know what needs to be developed or designed to suit their business need. Crucially, clients must realize that commitment to deliver timely information is vital as the process primarily involves capturing the client's requirements and translating them into the project solution (Nagarajan, 2004). The project team must encourage clients to participate and be included if necessary, to ensure that they give them what they want. A strong design team that plays effective roles can better ensure clients' active participation. Besides team-working during the briefing process, the team must make concerted efforts to understand the client organisation

and its stakeholders' requirements (Young, 2006). Finally, design teams also need to be well experienced and possess specialist skills in specific project types.

2.6. Project management relationships in web development

2.6.1. Project team versus the client

One of the common goals of businesses is to satisfy customers - in other words, to meet their expectations and to give them what they want. Web developers, like businesses, must work with client satisfaction as one of their main goals (Young, 2006). A fundamental factor affecting client satisfaction in website development is the business relationship among the players (Strauss and Hogan, 2001). Norizan (2008) states that clients play significant roles by communicating the required information to the design team about their project. This information includes the actual content, images, menus, headings, styles, branding effects and many others. Conformity with the outputs specified by the client is essential for successful outcomes, and this is what translates to client satisfaction (Irwan, 2011), (Norizan, 2008) and (Lim and Ling 2002).

Web development projects, like construction projects, may be completed within time and budget but may fail to deliver quality buildings to sustain technological and business operations. Clients, the key providers of information, may not have knowledge and experience in the briefing process, thus, forming barriers for accurate development of briefs (Wallace, 1999c).

Goto (1999) discusses two different types of web development clients after positing that a client can heavily contribute to the failure of an otherwise well-planned web development project. Goto labels "a bad client" as one whose interaction with the project team is generally negative and disruptive versus "a good client" who is constructive, informative and realistic about expected outcomes. Table 2.4 below summarises the other behavioural traits shown by both good and bad clients.

Table 2. 4: Good client behaviours vs bad client behaviours

| Good client behaviour | Bad client behaviour |
|--|---|
| Knows project goals | Generally, has unrealistic or undefined goals |
| Knows the required web content | Not sure about content but wants something "cool". |
| Realistic budget and timeline | Unrealistic budgets and usually has close deadlines |
| Has time to interact with the project team | Does not interact with project team when required |
| Gives final signoffs | Is undecided about signoffs |
| Takes time to understand the web environment | Does not appreciate the web environment |

Source: Goto (1999)

Harr (2013) states that regardless of the client, the project team is dealing with, it crucial to have a plan for creating a positive client experience. Harr suggests that setting up the project’s goals and communicating them with the client, including the constraints is one way of avoiding future conflict and asserts that constant communication helps keep client-project team relations in check. The above shows that the type of client will have different effect on the working process and on project success. It is important to investigate how different behaviours affect project success criteria such as cost, time, scope and quality. One of the main purposes of the research is to determine the effect of clients’ behaviours on project constrains.

2.6.2. Project team versus stakeholders

A project manager should be capable of recognising project stakeholders and of knowing how to manage them as resources as this is important for the success of the project (Young, 2006). Stakeholders may be defined as those individuals and organisations who have a vested interest

in either the project activities or the project outcome (Dobson, 2004). Important stakeholders are entities who can affect the scope, schedule, or budget (Farkas, 2009c). Clients and project managers should conduct periodic performance reviews with key stakeholders to discuss the measurement results and any implication that may arise from the results. Project managers should encourage feedback and seek input into appropriate courses of action to expedite or enhance the progress being made (Farkas, 2009d).

Project stakeholders such as the project manager, top-management of a parent organization, customer-client organization, and team members generally view project success differently (Young, 2006). Shenhar and Levy (1997) argue that even within the same organisation, success will be seen in different ways by people. The measure of success can be diverse for clients and project teams. Success has a different meaning from the client-side as well as from the project team side, which may lead to miscommunication and misunderstanding (Procaccino and Verner, 2006), however, believes that a project can only be considered to have failed if it fails to deliver the required level of satisfaction to the client.

2.6.3. Project team versus end-users

The client for whom the website or web application is developed is not necessarily the end-user of the website (Shinn, 2004). The client requesting the website might not have enough knowledge about end-users; in that case, it is not easy to define all the critical requirements of end-users (Friedlein, 2001). In web application development prototyping is used to leverage the involvement of end-users. Prototyping refers to the design of a preliminary version of the required system or website that can be reviewed by end-users. After end-users' reviews, changes are added to improve or transform the prototype to produce another version closer to the one that is wanted (Aadamsoo, 2010:18).

Agarwal and Rathod (2005) state that the clients may generally focus on the web development budget and timeframe as determinants of web development success while end-users are concerned about other attributes such as ease of use and content quality. A project that satisfies the client may not necessarily meet the end-user needs. At the same, the project team need to

satisfy their client's rather than the end-user re that drives web developers (Procaccino and Verner, 2006). A dilemma may be created as website developers attempt to please both the client and the end-user (Wallace, 1999).

2.7. Clients' behaviours and expectations in projects

A general definition of the word "behaviour" according to Merriam-Webster dictionary is the way of handling oneself; or the way a human being or animal acts or behaves (Merriam-Webster, 2015).

There is a definition of project success which focuses on achieving client satisfaction. This definition highlights the significance of the client for both defining and achieving project success. Project success often consists of achieving project goals and specifications; it also consists of understanding and meeting the expectations of clients. The client is an essential project constituent and, in most cases, the most important part (Darnall and Preston, 2012:105). Sometimes, the participation of the client in project teams might have undue influence on decisions. Still, the buy-in of the client offsets this, and the insights the client can give if special knowledge or change is required in the timetable (Darnall and Preston, 2012:108).

According to Brink and Berndt (2007: 52): "customer expectations may be described as the desires or wants of the consumer; these are what the customer expects from the organization, and its range of products and services, i.e. what customers feel the organization should offer them. These expectations are, in most instances, different from what the customer gets in real-life situations from the organisation."

In the context of complex software services, it is essential to note that expectations may be unclear, and satisfaction may be based on subjective client experiences with delivered services (Narayanan et al., 2011:509).

2.8. Project Constraints

2.8.1. Constraints in Project Management

In the Cambridge Business English Dictionary, a constraint is a limit or restriction; something with the power to control what you can do, which is keeping you within certain limitations (Cambridge University Press, 2016). Another definition of constraint states that a constraint refers to an element, factor, or sub-system that works as a bottleneck. It thus restricts a project from achieving its potential (or higher level of output) based on goals set (WebFinance, 2016c. Heldman (2005:56) defines “constraint” as anything that impedes your project team's ability to perform the work of the project. Young (2013: 70) went further in his consideration of a constraint as a limiting condition, circumstance or event, setting boundaries for the project process and expected outcomes.

Project constraints can also be “any events or circumstances that may restrict, limit, or regulate a project” Lewinson (2010). Astle (2015) states that every project has got three constraints: scope, cost and time. These three constraints interact to determine the final quality of a project. Figure 2.4 below shows the relationship between these constraints.

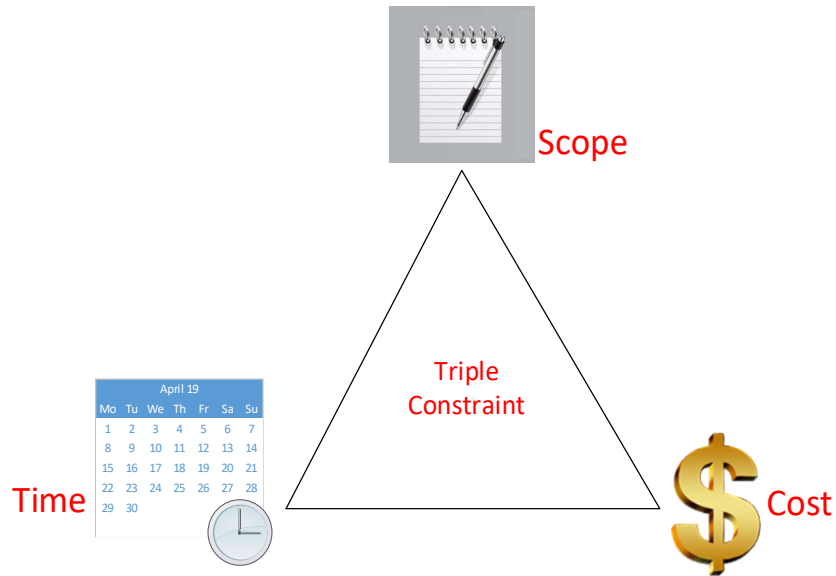


Figure 2.4: Triple constraint (WE ACT Services, 2015)

Time refers to the deadline for web development milestone, including the final project sign-off date. Costs represent the budget that would have been set for the project, while scope refers to the specific outcomes of the web project (Astle, 2015). Schwalbe (2015: 7) defines them as follow: A project's scope involves the work which will be done as part of the project; the specific and unique deliverables expected by the customer or sponsor of the project. The schedule or time specifies how long it will take to complete the project along with the final deadline for completion. Time also involves how the team will track actual schedule performance. Cost implies the total cost to complete the project, the project budget and cost-tracking methods.

In Figure 2.4, the triple constraint is represented graphically. However, limitations can take on many forms and are not limited to time, budget, and quality—currently, there is a trend to consider more aspects apart from those that were already imposed and were standardised. Figure 2.5 below is showing us what could be regarded as constraint beside the three usual constraints mentioned above in a graphic. There are more constraints or restrictions such as quality, customer satisfaction, risk or any other factors that limit your options while managing a project deliverable; (PeñalverGarcía, 2012).

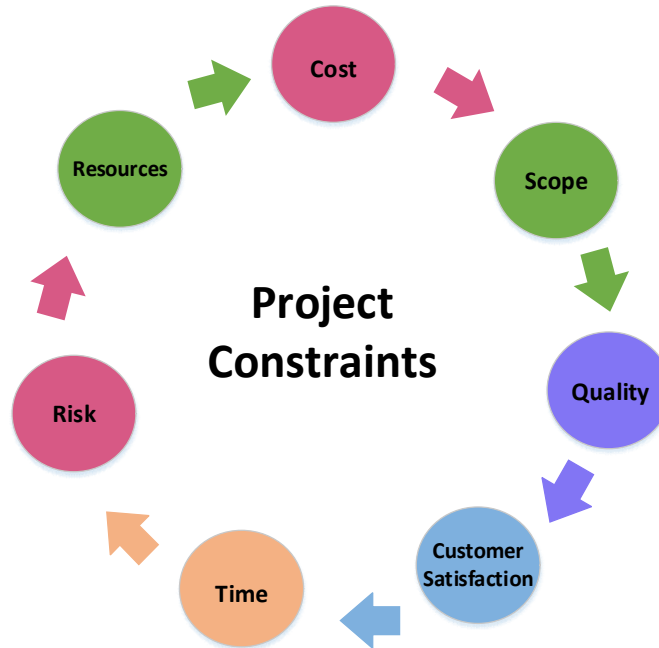


Figure 2.5: Project Constraints (International Organization for Project Management, 2016)

Figure 2.5 is translating that the project constraints should not be limited to the usual triple constraints and should include anything considered as a constraint depending on the type of project and industry. Therefore, the project constraints could be more or less than the one represented in figure 2.5. It is the role of the team properly define constraints for their project.

2.8.2. Constraints Inter-relationship

The three most significant project constraints are cost, scope, and schedule, which can also be called the project management triangle or the triple constraints. It requires hard work and challenging choices for a project to deliver the promised initial scope on time, within budget and high quality (Kappelma *et al.*, 2006:34). In project management, when it comes to the iron triangle, it is assumed that a change made to one constraint will affect one or the other two constraints (Farkas, 2009e: 13; Haughn, 2015). Haughn (2015) makes the following statement: “increasing the scope of the project, could lead to expanding cost or time. If you do not expand either of these

two constraints, you're going to increase risk and lower quality". Pandey (2011: 71) mentions that once identified, these constraints define the shape of a project and bring limits to the project.

Benz (2019) says that regardless of whether the quality meets agreed scope, it is marginally different. He characterizes scope as the wanted result and quality as the highlights or properties of a particular product or service. Let us look at the following example: the scope of your project may involve creating ten webpages. Quality spotlight on the attributes of every webpage. Quality can be defined by answering the following question: "How closely does the result match the expectations?". In the above example, the quality does not outline the number of website pages, yet there could be a quality acceptance regarding the number of words. Maybe you have demanded 1000 words, and you have a quality resilience of +/- 100 words. So, if a website page contains 900 words, you would accept it. A website page containing 850 words would be rejected.

Moreover, quality interconnects with other constraints. Suppose you are behind schedule and need to meet a specific due date. You could comply with the time constraint by growing the quality tolerance and diminishing the number of words to 800. Quality tolerance works in the domain of *exactitude*, which is a traditional measure for quality criteria. It shows how much a developed item *matches* its defined characteristics (Siegelaub, 2007).

As stated above, quality focuses on the attributes of a deliverable. Addressing quality is not about adding or removing a new item. It is about looking to modify or give adaptability (or "breathing space") for some element of an already-defined item or to guarantee that a specific characteristic is available and working correctly (quality checking).

Quality works, like other project constraints. For example, if a project is behind schedule or overspending, the project manager, may still have the capacity to deliver the expected product or service. However, the items might not be tested entirely (i.e., we do not guarantee that the attributes are available and working correctly), or some characteristics of that item may be diminished or wiped out. This is how quality operates as a constraint (Siegelaub, 2007).

In this research, project constraints refer to the four following constraints: time, scope, cost, and quality.

2.8.3. Constraints in Website Development

In project management, success is measured based on time, cost and quality. Nevertheless, there are estimation issues in a web development project; in fact, web application managers and developers face problems to estimate development time, effort and cost of the projects based on requirements of clients. In the Web Engineering field, estimation of effort represents one of the principal difficulties as there is no magical or simple solution method to estimate effort (Čeke and Milašinović, 2015).

Websites projects can be considered difficult to manage as they can involve many conflicting concerns or disputes. (Strauss and Hogan, 2001) state that it is crucial to understand the connection between the three following dimensions of project management: time, task, and resources as this understanding will help managers to manage the development and maintenance of complex websites effectively.

Professionals' observations reveal that to assess the performance of software projects cost, time, functionality and quality remain the important criteria. A project is considered a success if the technical performance requirements are met; if the level of satisfaction about the project outcome among key people is high (key people may refer to those in the parent organization, in the project team, users or clientele) (Pinto and Morris, 2007).

Usmani (2013) web development constraints are classified into two types: the first one is business constraints and the second one technical constraint. The former relates that constraints are a result of organizational management issues like financial challenges and operational matters present on the client's side. Technical constraints refer to the project team's difficulties in turning the desired objectives into functional solutions. Usmani also classifies constraints either as internal or external with internal constraints being constraints that exist inside an organization and can be resolved; while external constraints are a result of factors that are outside the clients' or project team's control. The author proposes the preparation of a comprehensive risk management plan at the beginning of the project as a way of foreseeing possible constraints that may hamper

project delivery. Table 2.5 below summarises the constraints framework discussed by Usman (2017).

Table 2. 5: Constraints

| | Internal Constraints | External Constraints |
|-------------------------------|---|---|
| Management Constraints | Internal solution like management redeployment, revisions of web expectations, etc. | Engagement of external stakeholders e.g. regulators |
| Technical Constraints | Internal technical solutions e.g. outsourcing, technical team restructuring, skills development | Renegotiating deadlines, budgets, and expectations |

Source: Usman (2017)

The matrix above suggests possible solutions to internal, external, management and technical constraints that the project team may face firstly within their organization and secondly in dealing with the client’s organization.

2.8.4. Challenges

Outside the standard project management constraints (cost, scope, time) several other management and leadership problems also affect project delivery.

Table 2. 6: Project leadership challenges

| Problem | Details |
|--------------------------|--|
| Skills shortages | Project teams understaffed, inexperienced or lacks expertise. |
| Poor leadership | Project managers, client management. |
| Communication challenges | Within the project team, with the client, with stakeholders. |
| Poor planning | Poor forecasting, incomplete plans, ambiguity, failure to account for all essential variables. |
| Poor risk management | No or poor contingency plan, failure to comply, poor forecasting. |
| Poor co-ordination | Co-ordination amongst various project members. |

Source: Dobson (2004) and Nagarajan (2004)

Coordination is a common issue in project management. Websites tend to be prone to crises, for the following reasons: firstly, they are subject to the many unknowns inherent to the invention or development process. Secondly, cultural differences among team members from different disciplines can lead to miscommunication and other management difficulties. Thirdly, team members new to websites development project must climb a steep learning curve, which slows down the process and leaves one vulnerable to mistakes (Strauss and Hogan, 2001).

2.8.5. External challenges

As hinted in Tables 2.5 and 2.6 above, external factors may also affect web development project delivery and client satisfaction. External factors outside the control of the project team and the client can be classified using the PESTEL framework (Shapiro, 2013). Within the project timeframe, changes in the political, economic, social, technological, environmental and legal environment may affect project delivery. Possible changes are summarised in Table 2.7 below.

Table 2. 7: Changes Summary

| Problem | Details |
|----------------------|--|
| Political | Regulations of services, restrictions on services, adverse political system change, social unrest. |
| Economic | Severe changes in cost structures, business cycles that may incapacitate the client, costs, price. |
| Sociological | New social trends, anti-social issues – thefts of cables, e.g. new concern against the project. |
| Technological | Disruptive technology, technology bands, technological system failures, e.g. global hackings |
| Environmental | Energy availability, natural disasters |
| Legal | Change in local laws, copyrights, design, labour relations |

Source: Shapiro (2013), Shinn (2004)

The challenges shown in Table 2.7 may affect the project milestones, the project costs as well as the scope. In the short run, external challenges may be beyond the ability of the project managers to manage. Still, in the long run, organisations can fine-tune their strategies to deal with new problems effectively (Pullan and Murray-Webster, 2011).

2.8.6. Project Constraints vs clients' behaviour and expectations

Definitions of “clients” have changed because of the perceived impact that clients have on the progression, development as well as the outcome of the project. Often the client is initially seen as the person who initiates the project. Still, it is far beyond that; being the client is more than being the person with the authority to approve expenses on the project (Walker, 2007). According to Pryke and Smyth (2006), it is significant to specify that there are several aspects which can

help us to categorise the client such as the value or importance of projects; the kind of projects he/she is involved in; the expertise or skill and the size of the organisation history. Moreover, it was added that the client's image has thus developed based on the relationship that the client has with the other elements of the project (Arabiat, Edum-Fotwe and McCaffer, 2007). For example, in a construction project, some researchers have investigated the conditions and factors that produce inaccurate estimations as a critical factor to increase or decrease the risk. In a project, it was found that generally, the risk is not connected with the client. However, it has later been revealed that clients can equally be the cause of risk which is opposing what is commonly perceived as conception when it comes to clients (Arabiat *et al.*, 2007). Arabiat and his colleague investigate how the client's conduct as well as the client's role brings or mitigates risk in projects. Their research involved extending the part of clients from an organisation behaviour viewpoint. They also demonstrated that a risk management style for clients is created based on the characteristics of certain behaviours, and these characteristics affect the project (Arabiat *et al.*, 2007). A part of this research is to investigate how client's acts may alter the course of action during the website development project focusing on the impact of client behaviours on project constraints.

2.9. Internet Marketing Service

In today digital world, internet marketing has taken an essential place in the organization's strategic management plans. Internet marketing is also known as online marketing, website marketing or e-marketing. Therefore, the marketing (promotion) of products or services over the internet serve as internet marketing. It is every online-conducted advertising activity using internet technologies; it does not only include advertising that is exposed or published on the website but also refers to other types of online activities like email and social network. All aspects of internet marketing are digital, meaning that there is electronic information transmitted to a computer or similar device, even though it can tie with traditional offline publicizing and sales as well. An excellent online marketing/advertising strategy keeps the web operator returning to the website (Kumar, 2014:118), which may ensure profit for organizations.

2.10. Conclusion

The chapter discussed the history, nature and classification of web technologies, including the World Wide Web (www), the internet, the intranet, the extranet and the importance they have gained in the modern business world and life general. It also defined and explained the concept and practice of project management, particularly the expectations of clients, the behaviours of clients and the relationship between clients and the project team. Finally, it reviewed constraints and external challenges that project teams meet in web development projects.

To conclude, it can be read from the literature that various agreeing and conflicting views exist on the impact of client's expectations and behaviours on project constraints in the management of web development projects. Client expectations were shown to vary with different authors suggesting that clients want or expect different outcomes. At the same, the approaches that project managers and project teams can take to meet client expectations also vary according to the literature. Regardless of this variance, there is strong evidence in the sources that project constraints are a common reality in web development, with most authors acknowledging the effects of time and cost in the delivery of successful projects.

CHAPTER 3: RESEARCH DESIGN AND METHODOLOGY

3.1. Introduction

Chapter three discussed the research design and methodology used in the study as well as delimitation of the study, the population, sampling methods, data collection instruments and procedures, methods used to maintain reliability and validity and research ethics followed. Data analysis methods are discussed. This chapter is about presenting the different methods that have been used in this research; the purpose is to explore and understand the impact of clients' expectations and behaviours on project constraints in the web development project.

3.2. Research Approach and Design

3.2.1. Research paradigms

Creswell and Poth (2018): state that research methodology is directly influenced by research philosophies or paradigms and various approaches within these paradigms. There are three research approaches upon which research designs are based. These are interpretivism, positivism and pragmatism (Raddon, 2010:1) and (Kumar, 2011:68).

Positivism is the view that there is a single objective reality surrounding a research phenomenon and this objective view requires a scientific methodology to bring it out (Saunders, Phillip and Thornhill, 2009:30). Interpretivism is the view that reality takes many, often subjective forms (Kumar, 2011:5-15); while pragmatism attempts to reconcile the differences between interpretivism and positivism (Kumar, 2011: 7, Punch, 2013).

Positivism is generally associated with quantitative research designs; and the need to find out objective reality through scientific, highly reliable and controlled data collection, analysis and interpretation methods while interpretivism yields more readily to qualitative research design (Saunders et al., 2009:32).

This study conforms to the positivist way of thinking as opposed to the interpretivist view because of the need for objectivity in the understanding of client relationships and expectations in web projects. It, however, includes an interpretivist element where the subjective views of respondents are also sought. Applying both positivist and interpretivist approach arguably conforms to the requirements of a pragmatic approach; that attempts to balance out the shortcomings of both positivist and interpretivist approaches.

The three research approaches discussed above (positivism, interpretivism and pragmatism) are part of the broad research philosophy that consists of two dominant philosophical views on the nature and management of knowledge and reality. These are the ontological and epistemological philosophies with some scholars adding methodology as a third philosophy (Raddon, 2010:1). Epistemology is about what constitutes knowledge and processes used to extract this knowledge, while ontology is concerned with establishing the reality surrounding a phenomenon. The methodology is concerned with determining the best method to find out knowledge and reality (Vasilachis de Gialdino, 2009). The study took an ontological philosophical approach out of the need to determine the reality behind the study matter rather than determining what is considered knowledge in the area of study. Combining philosophical view and positivist approach in a study inspired by an ontological positivist philosophy. As stated by Gratton and Jones (2010:23-26), this suggested the need to apply a quantitative research design discussed in the next section. The study also took an interpretivist approach with its concerns for subjectivity because of the need to establish individual perceptions, sentiments and views on some aspects of the study topic. A qualitative approach was, therefore required. The study used both qualitative research design and quantitative research design, making it a mixed-method study.

3.2.2. Quantitative versus Qualitative design

Gratton and Jones (2010: 26) and Kumar (2011:26) are of the view that quantitative research designs are better equipped for studying objective phenomenon, while qualitative study driven mainly by interpretivist views are equipped for studying subjective phenomena such as personal feelings and perceptions. Mixed methods can be applied when one needs to capture the strengths of both qualitative and quantitative research designs (Saunders et al., 2009:67: Kumar, 2011:26).

Table 3.1 below summarises other significant differences between qualitative and quantitative research designs. Mixed methods, as a design falls in between the two extremes.

Table 3. 1: Differences between qualitative and quantitative research designs

| Quantitative study design | Qualitative study design |
|--|--|
| Data produced is numerical and can be mathematically or statistically analysed. | Data produced is mainly textual (written or verbal). |
| Relatively large samples are required to enhance representativeness. | Small samples can be used for data collection. |
| The analysis aims to tests hypotheses or statistical truths. | It is mostly inductive – needs to generate new theories. |
| Data collection is highly structured and standardised and usually done in artificial settings. | Data collection is flexible, semi-structured or unstructured and done in natural settings. |
| High emphasis on reliability and validity. | Emphasis on both reliability and validity is very low. |

Source Saunders et al., 2009:67

For this study, a mixed-method was used: quantitative and qualitative. The quantitative research design was used because of the need to appreciate the objective reality surrounding the subject matter and to generalise its findings back to the broader population of web project management in South Africa. A quantitative approach is used out of the need for greater validity and reliability of results (Saunders et al., 2009:67).

Moreover, the method is used as the study sought to collect opinions and perceptions from the study population. The research design applied can, therefore, be described as a mixed research design with a greater emphasis and leaning towards the quantitative research design (Saunders et al., 2009:67; Kumar, 2011:26). For Plano Clark and Ivankova (2015), a mixed research method

helps researchers to understand a research purpose; they define it as a procedure of research in which scientists combine quantitative and qualitative techniques of data gathering and analysis. They also added that the belief is that research quantitative and qualitative methods should be combined or mixed to use their complementary strengths and nonoverlapping weaknesses.

3.2.3. Cross-sectional versus time-series

Research design can also be classified by the number of contacts with the study candidates over time. If contact is made once and all data is collected at this one contact, the study is classified as a cross-sectional study: a study that collects data at only one point in time (Kumar, 2011:36). If follow-ups are made over time to assess possible changes in responses amongst candidates, the study is classified as a time-series study (Kumar, 2011:36). In this study, data were collected at one point in time; therefore, it was designed as a cross-sectional study. The reason for doing a cross-sectional study was mostly due to resource limitations and the observation that the subject matter under study did not vary very much over time.

3.2.4. Inductive versus deductive approach

Within a chosen research design, a deductive approach or an inductive approach can be taken (Cohen, Manion and Morrison, 2011:4). A deductive approach's primary concern is to test hypotheses and theories believed to exist within the study. This particular study followed a deductive approach as it aimed to test existing theories relating to the relationships between clients' expectations and behaviours on project constraints in the management of web development projects. On the other hand, an inductive approach is worried about producing new theories from the investigation (Cohen, Manion and Morrison, 2011:4).

As a mixed research design, the study applied both an inductive and deductive approach. The study aimed at both: firstly, to test the theories and beliefs within the web design project environment and secondly bringing out new theories and perceptions from the same environment.

3.3. Delimitation of the study

“The delimitation of a study refers to restrictions, boundaries, parameters within which the researcher chose to conduct her/his study.” (Sesay, 2011). The study was conducted at various internet development and services companies in Cape Town, South Africa. It was restricted to companies that developed and designed websites (intranet, extranet, internet) in part or in full. Companies who design web application were also approached.

3.4. Population of the study and sample

3.4.1. Population

In research, it ensures that the results and findings apply to the right category of elements in society; it is vital to define the study population clearly. A population could be group of people, institutions, objects, etc; it is all elements that meet the sample criteria for inclusion in a study (Babbie, 2008:211). Malhotra (2010:34) describes the population as the group to which the study results will be inferred back to when a quantitative research design.

The population for this study were members of sampled organisations who worked in website design and development related projects. These included:

- Website administrators
- Website designers
- Website developers
- Content managers and writers
- Project managers and administrators
- Functional and divisional managers

- Web-services client liaisons
- Web security specialists

The total sample size was one hundred people located in Cape Town's website designing and development organisations. The organisations were identified on the internet. Visits to their websites were done to ensure that they fell in the targeted category of website designers and developers.

Kumar (2011:151) states that non-probability sampling encompasses methods of selecting study units without any consideration of the theory of probability. Unlike in probability sampling where every unit in the known study population has got an equal and independent opportunity of being selected to constitute the sample; non-probability sampling involves an element of convenience and bias where some elements of the population have a higher probability of being chosen into the study sample (Kumar, 2011:165).

Non-probability sampling is considered less reliable due to the high risks of researcher bias. However, under circumstances where the total size and location of the whole population is not known or where the population is not easily accessible, it is acceptable to use non-probability sampling methods (Daniel, 2011:81- 82).

For this study, the researcher used a non-probability sampling method; also called quota sampling because of challenges in accessing the total population of website sub-industry professionals. A predetermined number of research candidates was set. The researcher then went on to contact firms where respondents who could meet the required quotas could be identified.

3.4.2. Sample size

When using a non-probability sampling method, the researcher determines the sample size based on the nature of the study; in non-probability sampling, the sample size is generally not mathematically defined (Kumar, 2011:160). The sample size set was 100 for the study. Kumar (2011:172) states that the reliability of results increases as the sample size gets larger and larger. The author additionally clarifies that while the minimum reliable sample size is mathematically

calculated, the major challenge is about the researcher finding the mean population beforehand. Kumar suggests that arbitrarily large samples can be used in the absence of information needed to produce a scientifically determined sample size. The study relied on this view and arbitrarily set a sample size of 100 on the belief that it is big enough to be representative of the population of website experts in the Western Cape.

3.5. Data collection

“Data collection is the process of gathering and measuring information on variables of interest, in an established systematic fashion that enables one to answer stated research questions, test hypotheses, and evaluate outcomes. The data collection component of research is common to all fields of study, including physical and social sciences, humanities and business. While methods vary by discipline, the emphasis is on ensuring accurate and honest collection remains the same” (Faculty Development and Instructional Design Centre, 2019).

Initially, 100 was the target number of participants, but 87 responses were analysed in total. Out of 106 responses received, only 87 questionnaires were filled correctly. Initially, it was planned to drop off printed survey around several companies, but plan had to be changed in order to use something requiring driving around which could cost more time and money for transport. Consequently, google forms were used to administer questionnaires to make it easy to get data on an excel sheet as google forms automatically generate excel sheet from answers received. Nineteen forms were ever incomplete or filled incorrectly, for that reason they were not used for the data analysis stage. Each form was read and reviewed before generating the excel sheet used to analyse the data. Respondents were involved in web design and web development project in the past 24 months.

Participants were approached and kindly invited to participate in the study. The researcher had first to identify potential participants. Participants invitation to complete questionnaires or to answers interview questions were sent with information about the participants’ right to refuse participation, the right to withdraw from partaking in the interview and they were aware that participation was voluntary. It was also mentioned to respondents that even if they agreed to

participate, they have the right to refuse to continue participating if they feel like at any stage of the interview session. They were informed that the information provided in the interviews would be treated with confidentiality. They were not required to disclose their identifying details. Finally, the presentation of consent forms was mandatory allowing participants to sign and to give their consent.

Interview questions were used as qualitative research tools. The target was to interview 50 employees working in web design companies around Cape Town (South Africa). However, only 23 people have been interviewed because of lack of availability; most people in that industry are always busy and do not have time.

Table 3. 2: Data analysis and Data collection Summary

| Mixed Methods research | | |
|-------------------------------------|--|-----------------------------|
| Means | Qualitative Method | Quantitative Methods |
| Tools/Data collection | Questionnaires/Survey Open-ended Question | Interview Questions |
| Number of Participants | 106 | 23 |
| Number of companies involved | 30 | 30 |
| Sampling techniques | <ul style="list-style-type: none"> • Convenience Sampling • Homogeneous Sampling • Opportunistic Sampling | |
| Location | <ul style="list-style-type: none"> • Cape Town | |

| | |
|----------------------------|---|
| Industry | <ul style="list-style-type: none"> • Internet Marketing Services; Website design and development |
| Target Participants | <ul style="list-style-type: none"> • managers, subordinates |
| Data Analysis | <ul style="list-style-type: none"> • SPSS; Cudit.co |

3.5.1. Data collection instrument

A closed-ended questionnaire with a brief open-ended section was used in data collection. It was a questionnaire that limits study participants to a set of pre-determined responses (Kumar, 2011:151-153). Closed-ended questionnaires are appropriate when response categories are known either from literature or from previous, related studies, as was the case in this study (Saunders et al. 2009:124). Open-ended questions are appropriate in situations when there is a need to gain deeper insights and perceptions on the study subject matter (Kumar, 2011: 151-152). Combining both methods enabled the researcher to benefit from both open and closed-ended questionnaire features.

The first section (Section A) of the questionnaire was about asking participants general questions to identify their roles and responsibilities and their experiences. Section B was designed to collect information about client expectations that have been observed by the participants. The third section related the client expectations and behaviours identified in the second section (Section B) to the three project management constraints (time, cost and output specification). Section D was intended to gather data on the impact that the identified client behaviours and expectations had on the participants' ability to deliver. Section E presented a brief open-ended section where participants had greater flexibility to discuss other issues on the subject matter under study. The five sections put together ensured that the research objectives and the concerns of the research topic are met.

3.5.1.1. Questionnaires

There were five sections in the survey with a combination of structured closed and open-ended questions. Questions were designed with rigour and objectivity. Section A was composed of three questions to collect general information about respondent's involvement in a web development project. Section B contained 11 attributes or specifications of a web site which were ranked to determine clients' expectations or expected outputs. Section C and D helped to draw from respondents the behaviour of clients they dealt at different stages of the project with a focus on time, cost and specification. Content from section D highlighted the team's performance regarding meeting scope, time and budget, which are the criteria to determine the success of a project.

3.5.1.2. Interview Questions

For research purpose, an interview is defined by Divakaran Achari (2014:108) as a verbal discussion between two individuals (researcher and participant) to gather relevant data. The three kinds of interviews are the following: structured, semi-structured and unstructured.

As per to Gill and his associates (Gill, Stewart, Treasure and Chadwick, 2008: 292), the reason for conducting a research interview during a research investigation is to explore the opinions, views, experiences, and motivations of people on specific issues. Interviews like other qualitative methods are believed to provide a 'more profound' comprehension of social issues than would get from only using purely quantitative methods, surveys for instance (Gill et al., 2008:292). Quad (2016) states that a researcher can make use of interviews to help them get the story behind a participant's experiences and help them to get in-depth information about the research matter. Interviews can be from different types; they could take several forms, such as face to face interview, telephone interview, focus group discussion, depth interview and projective techniques (Divakaran Achari, 2014:108-109). With the evolution of technology, Skype video call interview, WhatsApp video call and different type of applications developed, allow people to have meetings without having to meet face to face. All interviewees were asked standardized and open-ended

questions to simplify and facilitate quicker interviews allowing the researcher to easily analysed and compared data collected. The questions asked by the researcher are presented below:

“Open-ended questions provide much value from a research perspective, as they introduce less bias than multiple-choice questions, therefore, allow respondents to formulate their responses” (Jackson, 2015:89), the author mention that is about letting participant to formulate their own responses. Section E of the questionnaires contained five open-ended questions and comprised the following questions:

- List 4 things about clients/customers that could impact negatively on your performance on projects.
- List 4 things about clients/customers that could impact positively on your performance on projects.
- List 4 things that you expect from your project when there is a delay on the project.
- List 4 things that you do not like when it comes to making client/customer happy.
- What kind of behaviours do you expect from a client/customer?

“Interview is a method that involves asking questions in a face-to-face manner” (Jackson, 2015:88).

At the beginning of a project, you seat with the client to discuss specifications, time frame and cost. After agreeing on specification, completion time and cost:

- Does Client set website requirements? Do you also advise and suggest, or you stick to precisely what they ask?
- How often may a change of website requirements/specifications happen? Most of the time who request changes. Can you tell us how changes affect the overall project?
- Do you think the client should inform you immediately if anything changes in their scope/requirement during the web design process? Why?
- Can you describe the different type of clients you usually meet in your field of work? If `you had to choose a specific type of client to work with, based on the one you describe above which type you will prefer? Why?

- Do you think that clients/customers behaviour may impact the way you design/develop a website? The way you work.
- According to you, what type of behaviour from the client will be best for you to ensure the success of the final product?
- Could you tell us in what ways a client can affect team performance on the project?
- When it comes to scope, time, and cost, how does the client may influence on it based on your experiences?

3.5.2. Data collection procedure

A list of potential companies where participants were based was made to facilitate the process of contacting organisations. Contacts were then made with human resources personal and company administrators to identify respondents as well as to seek permission and assistance in doing the study. Questionnaires were emailed to respondents who were identified by human resources and other administrators that the researcher contacted. Additionally, respondents were requested to recommend other experts who in their opinion, worked in the designated web-related professions. The researcher distributed other surveys personally to the participants. Participants were requested to fill in the surveys either in the researcher's presence or at their own convenient time; it was mentioned in the questionnaire and confirmed verbally from time to time to participants that their responses were genuinely confidential. The purpose and hope when asking questions in research, are to expect participants to tell what they think and feel. The truth is needed to get reliable data and to avoid biased results. In fact, response bias can have a significant impact on findings. Therefore, to ensure confidentiality and avoid bias, there were no "name section" on each survey; because of that, answers could not be allocated to a specific person which keeps anonymity well. Participants needed to know that they could not be identified in any way.

Most of the data were collected through email-administered questionnaires. Attempts to make telephonic contact with potential targeted respondents before administered questionnaires. Email-administered questionnaires were considered a viable option because they are quick to administer, are cost-effective and work well with a sample that has extensive access and use of email like website experts (Hill and Alexander, 2017:73).

Additionally, data collected through the personal administration of the data collection tool to the research participants within the work setting.

3.6. Reliability and Validity

In the research design, reliability and validity issues were adequately addressed to enhance the integrity of the study.

3.6.1. Reliability

The extent to which a study produces consistent results is known as “Reliability” (Saunders et al. 2009:75). Kumar (2011:181-185) states that reliability is the degree to which data analysis measurements are free from error. Reliability or internal consistency was improved through:

- Verification and cross-checking all data entries after capturing.
- Application of statistical tests whose assumptions were met by the data.

Scale reliability was assessed using Cronbach’s alpha test, which measures internal consistency of responses in both latent and known variables (Saunders et al., 2009). It was conducted on all the questions on the questionnaires. Cronbach’s Alpha is a coefficient and can range from 0.00 to 1.0 (how2stats, 2019). In a nutshell the reliability analysis measures internal consistency between items or variables measured, for instance in Section B: Clients Expectations on Web Projects outputs. The research participants are expected to rank or score clients’ expectations using multiples or various attributes. The reliability called CRONBACH’S ALPHA consist in measuring the internal consistency between different attributes with regards to clients’ expectations.

3.6.2. Validity

Kumar (2011:181) asserts that the data collection instrument and process mostly determine the validity of research findings.

The research questionnaires were subjected to a validation process. Creswell (2003:78) states that the validity of the data collection tool used in the study refers to the level to which the research instruments measure what it is envisioned to measure.

The researcher conducted a pilot study to ensure validity; the pilot was done to test the data collection instruments' capacity to measure the relationships captured in the title of the study and to provide data whose analysis answers the research questions. The investigator had to be available in person, on the phone or via email to give any clarity to respondents who needed clarity before answering a question. Moreover, the investigator's presence when the respondents were filling in the questionnaires also served to enhance validity as he/she could monitor interference from other participants and provide clarifications on some data collection tool issues when needed. The investigator had to create a comfortable atmosphere to avoid influencing participants answers: talking to participants in a friendly manner; ensuring them that there were no wrong or right answers; they can express their point of view and should feel free to do so.

3.7. Ethical considerations

Saunders *et al.* (2009:183-184) describe ethics as the appropriateness of your behaviour concerning the rights of the subjects of your work or the people affected by it.

An ethical clearance certificate was required from the university ethical clearance committee at the Cape Peninsula University of Technology (CPUT) to undertake the data collection. Research participants were informed about the objectives of the research; their permission on partaking in was also sought. Additionally, participants were ensured of the anonymity of their responses. Kumar (2011:77) discussed harms that may emanate from a study. These include coercive behaviour where participants are not given a choice not to participate; abuse of a participant's information; breach of confidentiality and exposing participants to biased views. The researcher ensured that the above ethical infringements were duly avoided.

Additional ethical matters related to this research mainly exist in data collection. The selected organisations had to approve questionnaires and interviews to ensure that they do not violate

organisations' privacy and confidentiality policies before we collect data. Organisations checked that any information that could potentially hurt the reputation of the organisations or reveal private information to its competitors were revealed.

Finally, there were ethical considerations relate to the accuracy of the information and results presented in the research. The results were presented accurately, and no changes were made on results to suit a view.

3.8. Data Analysis

Data analysis is described by Marshall and Rossman (2011a:209-210) as the method of bringing order, structure and meaning to the mass of gathered data.

Package for Social Sciences (SPSS) was used to analysis closed-ended questions; it is a computer program. Descriptive statistics were used to analyse data. From these, the frequency tables were drawn, then data was presented in pie diagrams and bar graphs. The researcher, to quantify emerging characteristics and concepts, did analyse the open-ended research questions and interviews responses through quantitative content analysis. Yang, Rahman and Connie (2019:27) explain that concept analysis is used to measure variables quantitatively and is known as the process of analysing written or verbal communications in a systematic way. Content analysis is used to analyse texts; to do that texts must be coded or broken down into manageable code categories for analysis (i.e. "codes"). After the text is coded into code categories; depending on the data the codes can then be further categorized into "code categories" to summarize data even more (Columbia University Mailman School of Public Health, 2019).

It is essential for any researcher who desires to become an expert at doing qualitative analysis must learn to code well and quickly. Additionally, the quality of a study rests in large part on the quality of the coding; in other words, a suitable coding method ensure the quality of research. Coding is about grouping the responses into limited categories by assigning numbers or other symbols to each response (Sreejesh, Mohapatra and Anusree, 2014:167). According to Fowler (2013:128), code is a set of rules made by the researcher to translate answers collected into

numbers. The writer adds that code can be unambiguous, and because of that, reliable coding is critical to ensure appropriate interpretation of data. Moreover, the researcher should make sure to set a clear rule in terms of what number to allocate to each response. Codes can be designed to help the researcher to minimize errors during coding and analysis (Fowler, 2013:128).

The online platform was used to help the researcher to code the responses collected and categorize text using a highly streamlined interface; it is an easy and fast way to code responses of open-ended questions, to code survey, to categorize short texts and to evaluate customers feedback or employees' feedback (Caplena GmbH, 2019).

3.9. Conclusion

In this chapter, we discussed the research design and methodology used in carrying out the research. The study conforms more to the positivist way of thinking than the interpretivist view because of its need for objectivity in the understanding of client relationships and expectations in web projects. It, however, includes an interpretivist element where the subjective views of respondents are sought. The study applied a mixed-method design which is a combination of quantitative and qualitative design. The quantitative design part was used out of the need to appreciate the objective reality surrounding the subject matter. The qualitative design was used out of the need to collect opinions and perceptions from the study population. The data collection happened at one point in time, making it a cross-sectional study. The research had a population target of 100 participants from web development and design firms based in Cape Town. A closed-ended questionnaire with a brief open-ended section was used in data collection and questionnaires were distributed to the participants through email while some were personally delivered. Statistical Package for Social Sciences (SPSS) was used to analyse closed-ended questions. A descriptive statistic was used to analyse data. The section with open-ended questions formed the qualitative part of the study and questions were analysed through content analysis. The questionnaires were mostly sent as google forms, but few occasions they were hard copies. The individual face-to-face interview was also used to collect data.

CHAPTER 4. DATA PRESENTATION AND DISCUSSION OF FINDINGS

4.1. Introduction

As per Ader, Mellenbergh and Hand (2008) analysis of data is known as a procedure of gathering and transforming information collected into data that is useful for research. This section is about presenting and discussing data analysis and findings of responses received from the research questionnaires distributed. Questionnaires used were carefully analysed to ensure that the data gathered reflect participants' opinions about the matter to obtain responses to the research problem. Data collected was presented clearly with the aid of tables, percentages and graphs, where possible.

The results from statistically analysed data received from completed and submitted questionnaires are presented in this chapter. Moreover, data capturing, and analysis was done using Statistical Package for Social Science (SPSS). Data were coded using content analysis methods using codit.co platform before being analysed. Codit is an online text-analysis software used to code surveys as well as open-ended responses. It is a useful tool that allows an investigator to code responses collected or to categorize text via a streamlined interface.

The goal for doing this research was to discover the effects or influence of clients' expectations and behaviours on web development projects' constraints such as schedule, budget, quality and scope.

Research sub-questions:

- What are the effects of clients' expectations on web development project schedule, budget, scope, and quality?
- How does the way clients act or conduct themselves during the project affect project constraints?

- What influence do clients' behaviours and expectations have on the progress, completion, and success of web development projects?

Questionnaires were administered to possible respondents involve in web design and web development industry in Cape Town area. In total 106 were questionnaires received, and 87 were used to conduct the analysis. Additionally, five open-ended questions were asked at the end of each questionnaire or in separate forms; 96 valid response from open-ended questions were analysed. In addition to questionnaires responses, 23 interviews responses were also analysed.

4.2. Data Presentation

4.2.1. Section A

The following diagrams or figures draws from the descriptive and frequency tables for section A of the questionnaire.

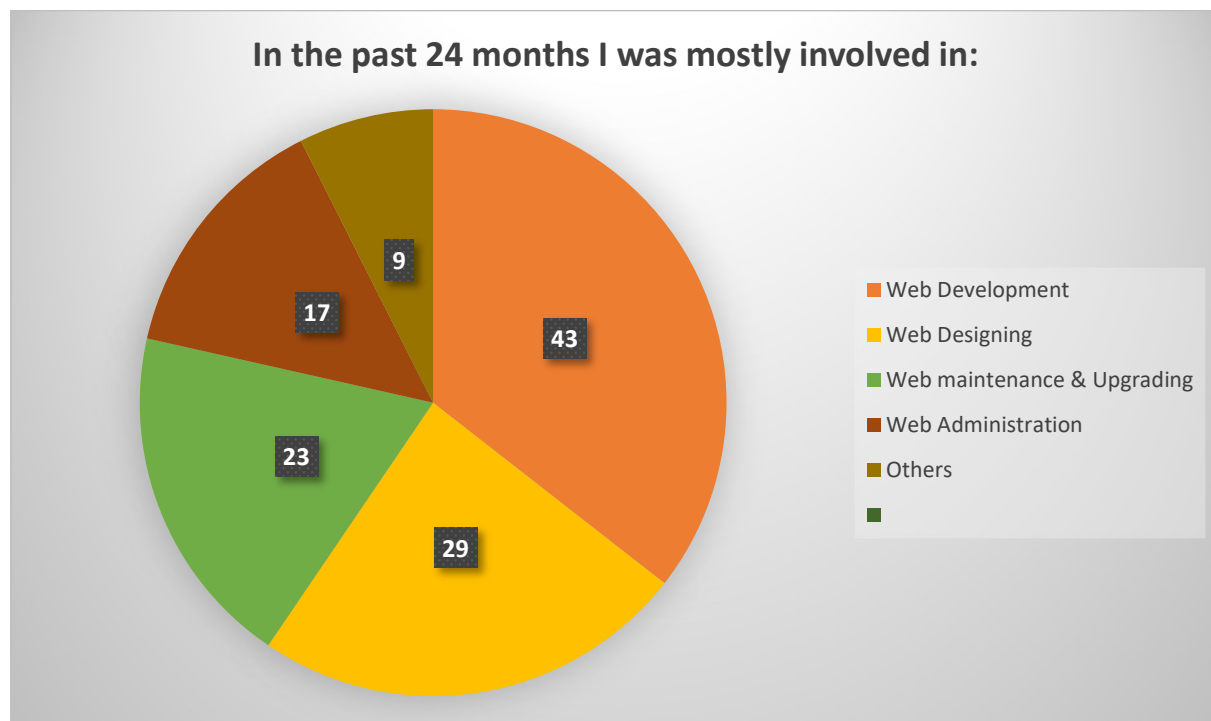


Figure 4.1: Duties involved in the past 24 months

The evolution of technology and the internet's popularity have forced companies to use web presence to conduct business; as a result, the demand for skilled web designers and web developers has increased. Figure 4.1 shows us an overview of the number of respondents in this study as well as their roles in a web design project. Out of 106 responses received, 87 were valid, and 19 were rejected: they were either incomplete or out of context after checking each form before analysing them. Out of the Valid 87 responses, 43, which is 49.4% were involved in web development in the past 24 months; 29, which is 33.3% were involved in the web design aspect. Respectively 23 and 17 were involved in web maintenance and upgrading and web administration. Finally, about 7% represent other working functions given besides the one mentioned in our questionnaire. The overview of the number of participants and the fact that they are involved in different aspect of the web development project process allowed the researcher to gauge the impact of client's expectations and behaviours from the team experiences and involvement; which is a useful and essential aspect in terms of findings. Each web project phases involvement entails different interaction with clients. The figure above reveals that web developers and web designers represent the highest percentage. Organisations hire them more than other function like contents, editor or administrator because developer and designers are needed when several projects are running at the same time.

Some function does not request the company to have more than 2 or 3 employees doing the same job; the size of the business also determines the number of employees for each function. In the internet industry, there are also sole proprietaries; it means someone works alone and does the design, coding and maintenance and may outsource if needed. In this research, some participants ticked several options in the questionnaires as they are doing design, coding and maintenance for the website.

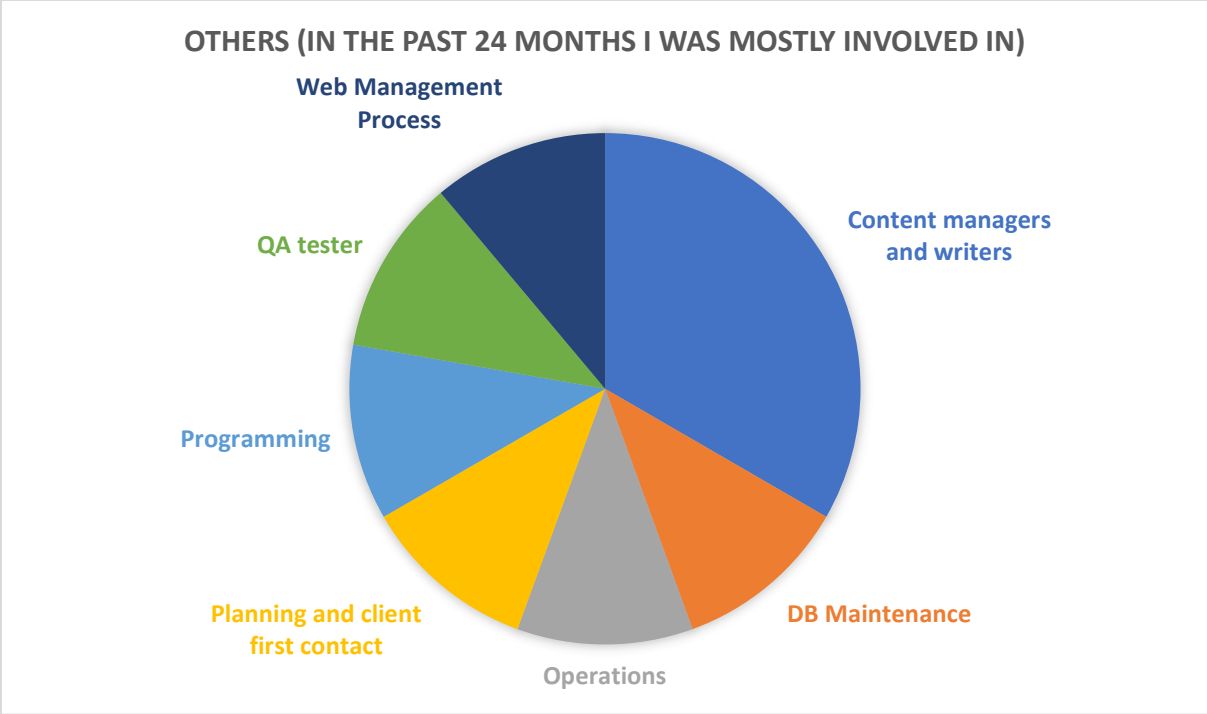


Figure 4.2: Others (in the past 24 months I was mostly involved in)

Figure 4.2 above is a graphical representation of the nine responses from respondents which were different from the four responses proposed in the first question of our survey. It is representing those who choose “other” as a response to the first question. The following was recorded: 10.3% of the respondents were involved in the following part of the web development project: content managers and writers; DB maintenance; Operations; Planning and client liaison; Programming; QA tester and Web Management process. Out of 9, 3 mentioned “Content managers and writers” as their response. Involvement in web development projects is not restricted to the following: development, design, maintenance, and administration. The position represented in figure 4.2 even if they are not the most popular in the industry compares to the one mentioned in figure 4.3 it does not make them less valuable as they play their part in the overall website project if they needed. If a client provides content for the website, then a content writer is not usually required.

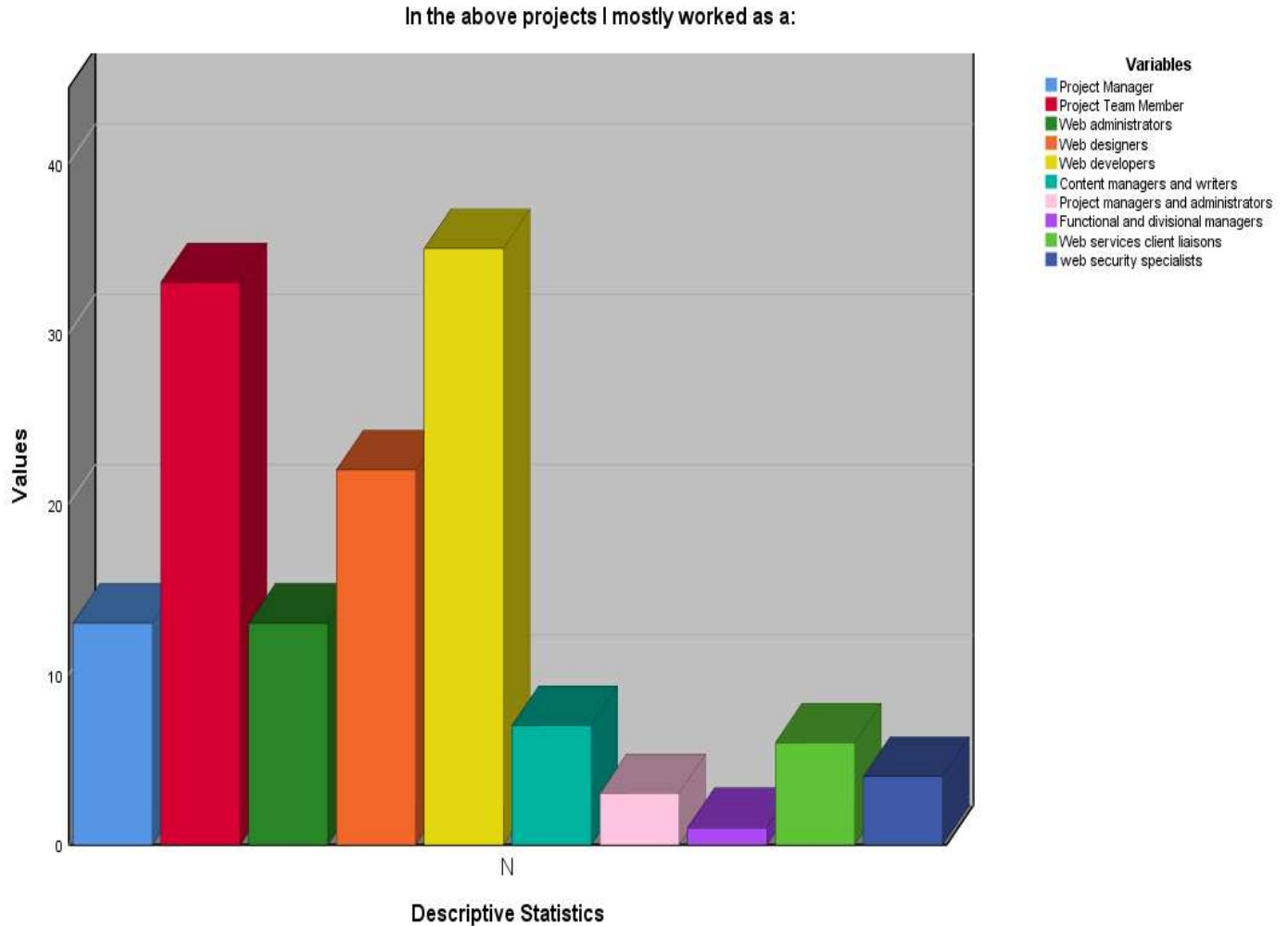


Figure 4.3: In the above projects I mostly work as a

There is a diversity of positions within the internet and e-business industry. Figure 4.3 like figure 4.1 show us that some positions such as web developer have the highest ranking. The Job titles of different respondents are represented in figure 4.3. In this figure, there are ten different options chosen from the survey. Most of the respondents' work as web developers (40.2%) follow by Project Team Member with 37.9%. Project team members usually incorporate everyone working in a web project where it is a team effort knowing that some developer offers their services in private. Team members also include people like interns who assist with project tasks depending on their field of study and the needs of the project. Web designers represent 25.3%. Project

Manager and Web administrators have the same number of respondents which is 14.9%. Respondents are working in several positions revealing a diversity of responses. The researcher asked this question because he/she considered that research participants have different background and work responsibilities in the Web Development industry which may affect their way of seeing things as well as their point of view. Secondly, the question was asked to determine the respondent population. The research targeted people working in the Web Design industry; the survey result shows us that 40.2% work as web developers which implied that most of our respondents work in the web development which is one of the focus areas for our research. We noticed a diversity of web development project professions amount our respondents allowing us to get several responses to help us get answers to our research objectives.

I was (am) involved in the following phases of the projects:

Statistics
■ N Valid

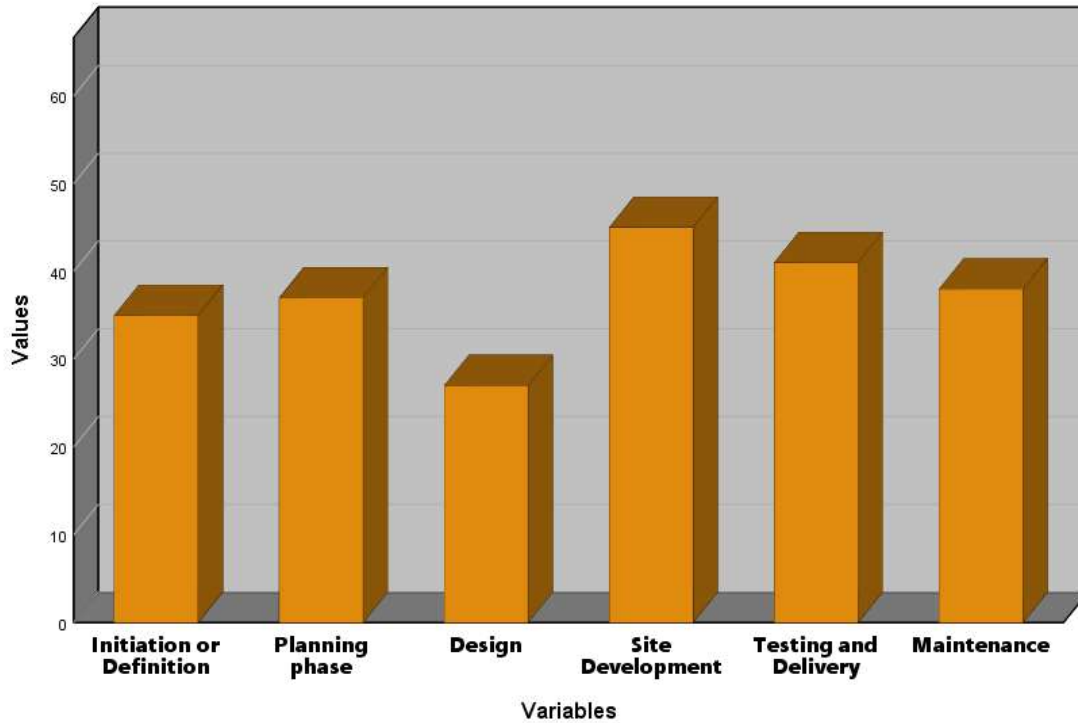


Figure 4.4: I was (am) involved in the following phases of the projects

In figure 4.4, the phases of web projects respondents were involved are represented. They had the chance to choose more than one option in case they were involved in more than one phase: depending on the project and size of the company. In a web project, a designer does not mean being involved in that specific phase only. He/she can be part of the initiation phase to get entails from clients and come up with what they want. Everybody as a role to play but it does not limit them to play one role; they can do something else if that can help and contribute to the overall success. For example, a soccer team has a goalkeeper, defender and striker; they each have different position/role, but it will not prevent a striker from defending if he/she in position to do so. Therefore, if a team member can help in a specific task even if it is not his/her primary focus,

he/she can help if it is for the project progress and success. The following were recorded: 'Site Development' was the highest number. The second most chosen was 'testing and delivery'. The "Maintenance" phases responses were recorded with 38 responses; Followed by "initiation or Definition" with 37 and finally the "Design" phase with 27. The question was asked to help the researcher to determine which phases of a web design project where most respondents were involved in to help through the data analysis process. The figure above reveals that the respondent population was involved in various website project life cycle phases which is a good thing for our research as different phases mean different tasks at each stage as well as different interactions with clients; allowing respondents to give us a diversity of responses based on their experiences.

4.2.2. Section B

The bar charts from figure 4.5 up to figure 4.15 illustrated our respondent's point of view regarding their client preferences for eleven website design criteria. The purpose was to enable the researcher to see what is most and least critical criteria from clients based on their experience and interaction with different ones. The below figures show us client criteria preference based on workers experience as they are the one interacting with clients. The following questions in the survey were asked to determine what is essential from clients when requesting a website.

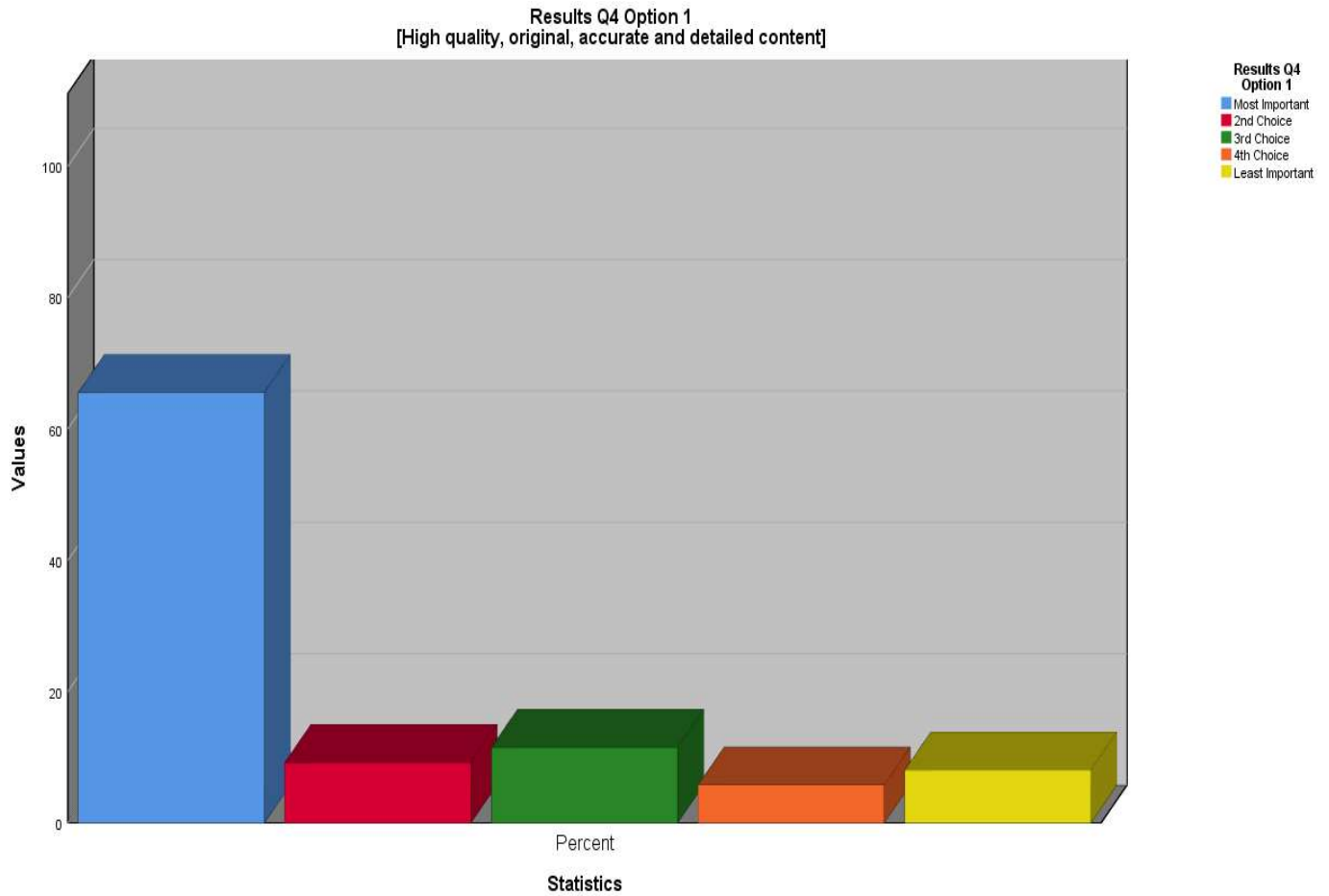


Figure 4.5: High quality, original, accurate and detailed content

Based on data collected Figure 4.5 shows that clients perceived this website characteristic “*High quality, original, accurate and detailed content*” as one of the most critical criteria when designing a website. Clients expect a high-quality website with originality and accurate content; this website option was chosen as the most critical 57 times out of 87, representing 65.5 %. It is an aspect which should not be neglected while building a website. Those who consider the above criteria as less important or not necessary at all were few with the following recorded percentages: second choice:9.2%; third choice: 11.5%; fourth choice:5.7; least important:8%. A good-looking website catches potential clients’ attention and gives them an opinion on the type of business it is it gives the first impression to potential clients. Today technology and internet progress give people quick

access to the organisation's website, allowing them to contact businesses much quicker no matter where they are in the world. A good website gives relevant and essential information and useful content to the users. The project team must deliver a website that aligns with the type of business the client is operating in; the website should give necessary information, but aspects like content quality or picture quality depend on the client as they are the one providing that information; for example if the client does not provide the project team with good quality pictures the website will have poor quality pictures.

Another example is that clients could also be responsible for providing content for the website; therefore, they must ensure the relevance of the information written. Clients know their website users better than the project team; therefore, they can easily guide the team and tell them what is essential for their website as preferences may differ from one business to another. Moreover, because of that, clients should be available at the early stage of the web project to ensure they communicate their needs and expectations to the project team to avoid confusion and misinterpretation from the team. Other aspects determine the quality of a website such as "Security badges", "Secure the checkout process", "Good SEO", "Safe online payments system". It costs money to add those aspects on a website may depend on the project budget and how much clients are willing to spend as quality requirements request money to be implemented.

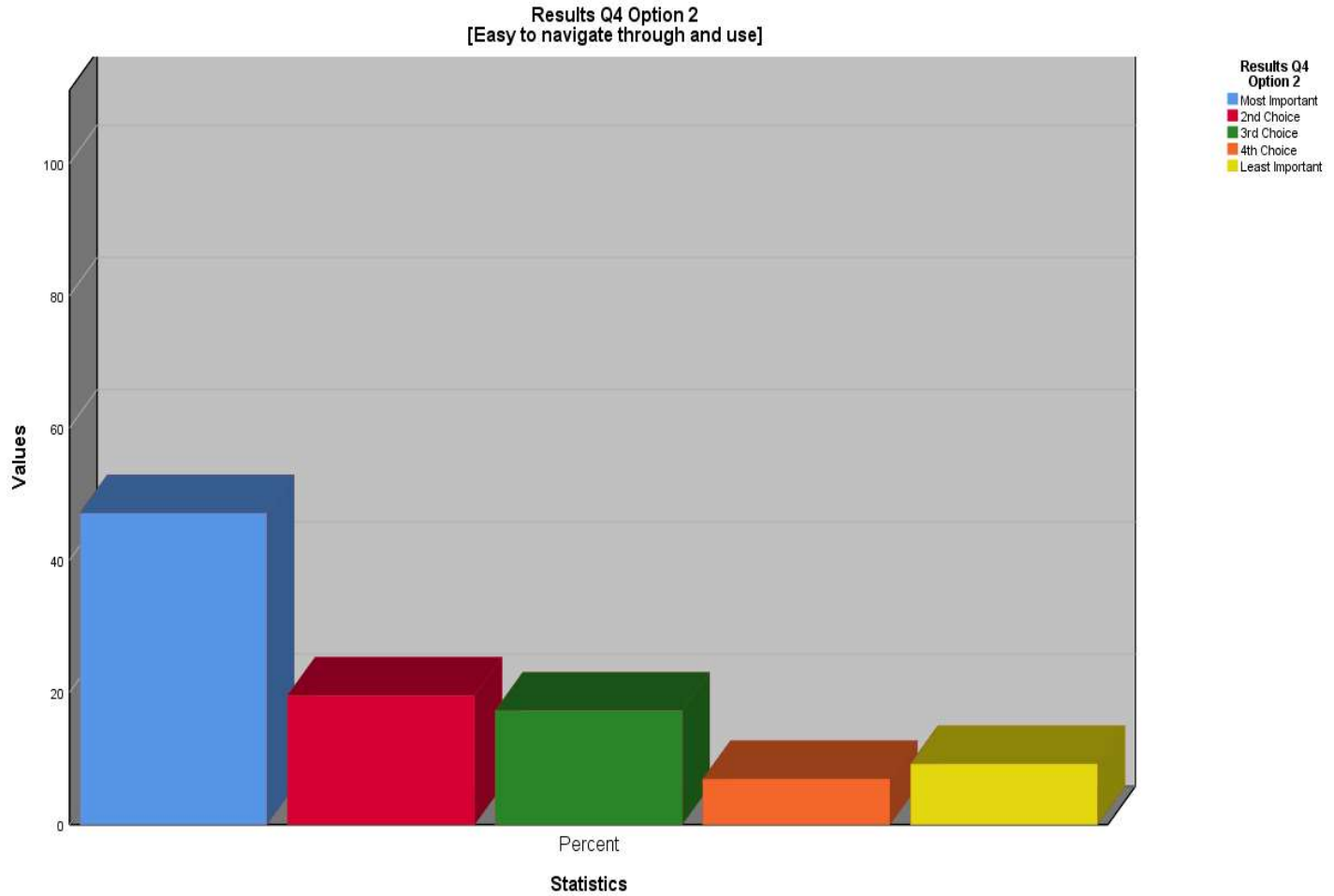


Figure 4.6: easy to navigate through and use

Easy to navigate website refers to the following: well-divided categories; consistency and reliability; accurate navigation titles; clickable links for all navigation elements; make sure that search feature works; every clickable image must have an ALT text (DeGeyter, 2019). Figure 4.6 indicates that “*Easy to navigate through and use*” is also an important criterion to consider when it comes to creating a website that satisfies customers. Our survey reveals us that 47.1% consider the above criterion as most important for clients according to our respondents. It means that website navigation needs to be intuitive as well as easy to use. Therefore, to ensure usability and

success of web design, it is a crucial part to create an effective website navigation system. A good navigation system gives the information needed quickly and easy. Some see the criterion mentioned above as one of the least important (9.2%). Additionally, the following responses were recorded: the second choice was 19.5%; third choice 17.2%; fourth choice 6.9%. Seeing the figures above is showing us that for some clients “*Easy to navigate through and use*” might not be the most important but still a significant website specification.

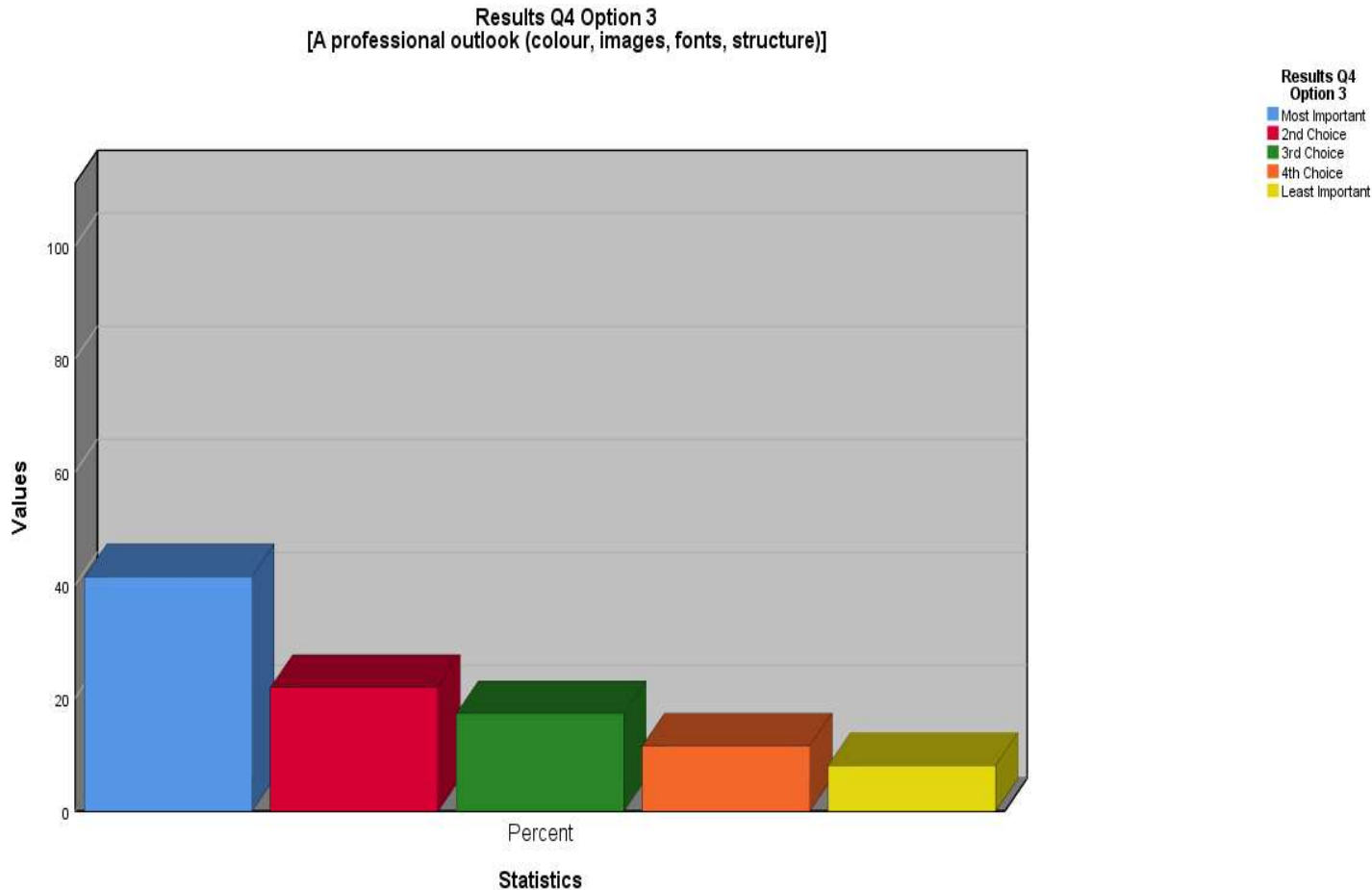


Figure 4.7: A professional outlook (color, images, fonts, structure)

A website outlook refers to the website design and colours; page layouts, pictures, videos and graphics Figure 4.7 shows the result for the third criterion which was “A professional outlook (colour, images, fonts, structure). Based on responses, it is also seen as an essential aspect while

designing a website. 41.4% interviewees selected the third aspect as the most important. The look is the first thing that user notice when they visit a website; the first impression is vital as its last forever according to the respondent. The second large percentage was 21.8% which is still confirming the importance of having a good-looking website. Finally, the three following percentage were recorded: 17.2% for the third choice; 11.5% for fourth choice and 8% for the least important. Depending on the type of website and on agreements between client and web project team, clients are responsible for providing good quality pictures in that case if the pictures received are not good it will affect the final website outlook.

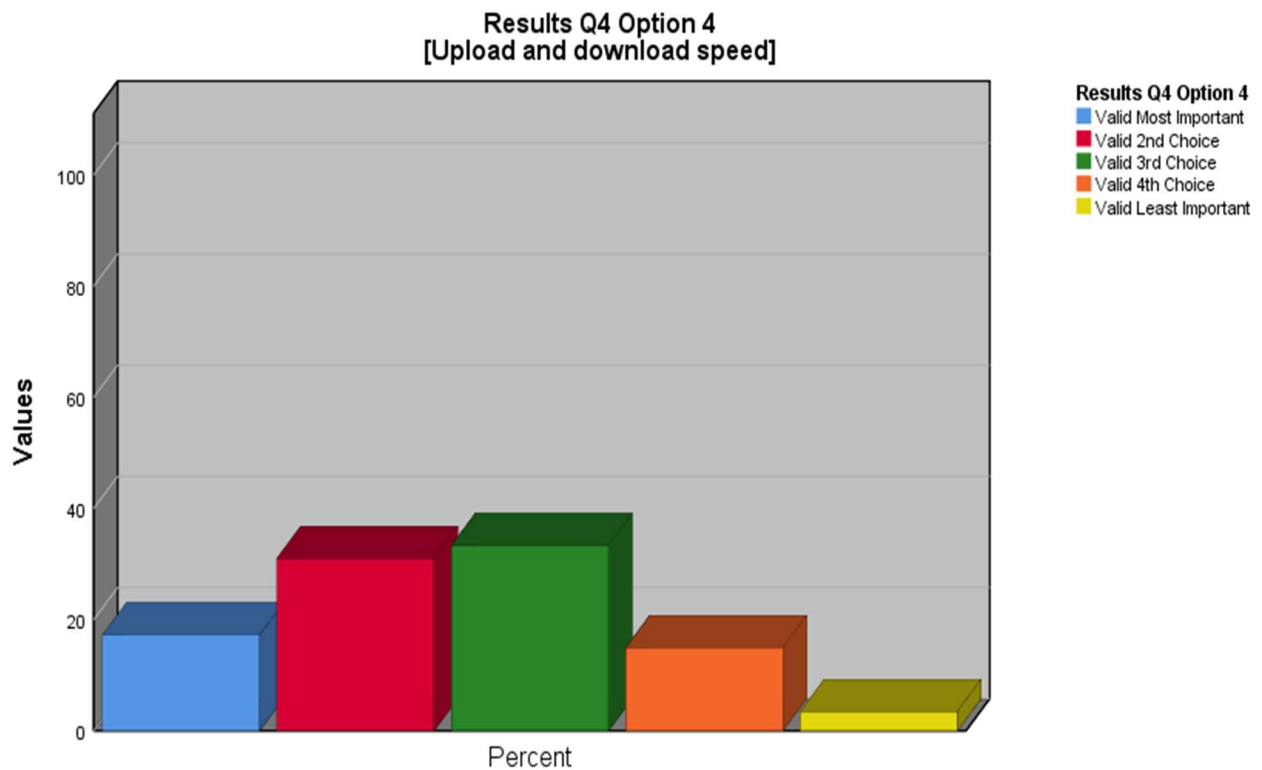


Figure 4.8: Upload and download speed

The figure 4.8 display in percentage the responses regarding the importance of this aspect “upload and download speed” while designing a website. The above figure shows us that 33.3% consider “upload and download speed” criterion as a third option which is not most important and least necessary ever. It stands in the middle; how fast web user can pull data from the server to

them is not one of the most important aspects to consider when building a website, but it is not also an aspect which should be neglected. The “second choice” in term of importance is 31% and 17.2% for “most important” show us that “upload and download speed” is a website requirement which plays an important role as well in the excellent functioning of the final product. Finally, those two percentages, 14.9% and 3.4%, represent responses for “4th choice” and “least important” respectively. This option will depend on what the website will be used for; a clear briefing from the client will allow the project team to determine what upload and download speed are required for a specific website.

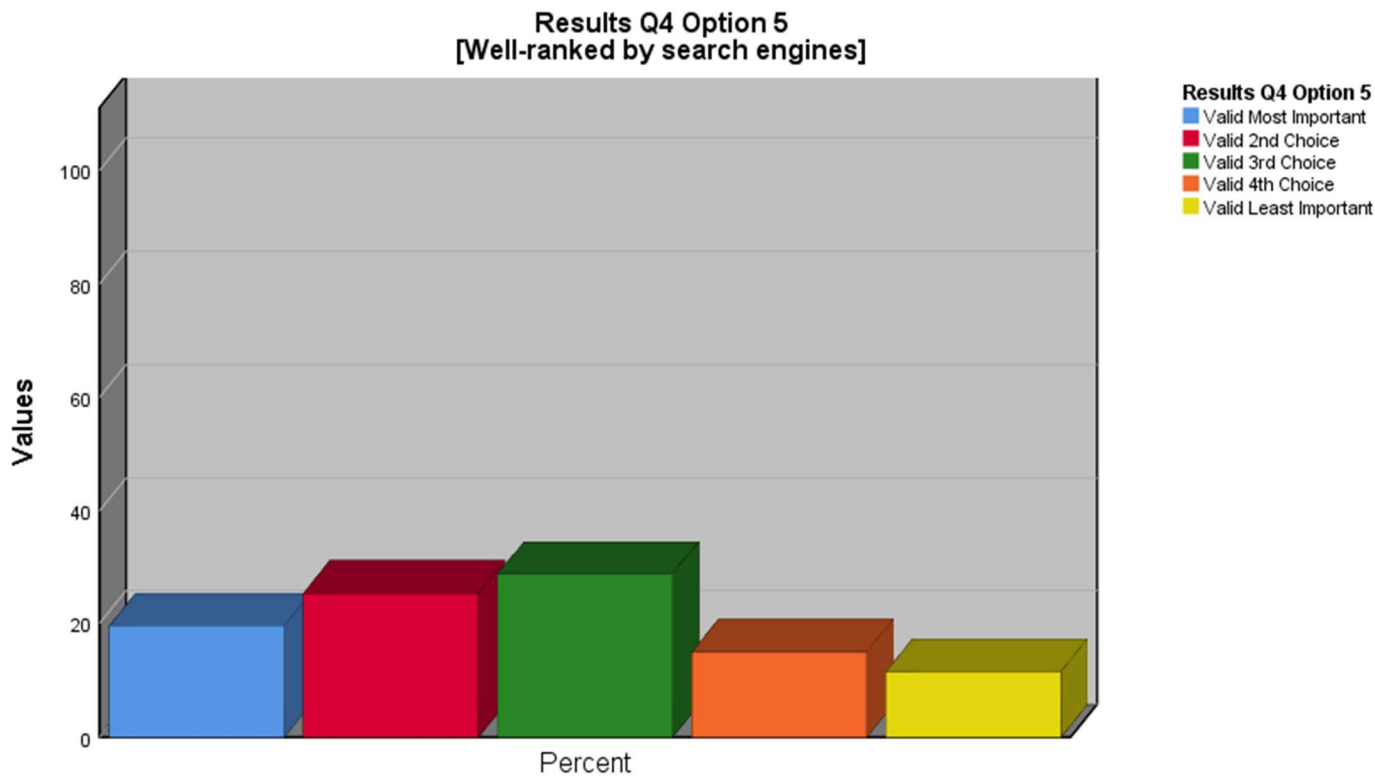


Figure 4.9: Well ranked by search engines

Every day people are conducting searches on the internet; people are now becoming more and more dependent on search engines to get answers for their common queries (Inspire Web

Development, 2019). Organisations need to optimize their website to improve search engine ranking. An improved search engine ranking will help for business growth and help to obtain new leads (WebFX, 2019). Brick Marketing defines “search engine ranking” as the position at which a website appears in a search engine query. (Brick Marketing, 2019). In figure 4.9 results for the fifth criterion “well-ranked by search engines”. The project team has the responsibility to explain clients the importance of well-ranked search engines as it may imply additional tasks (scope) leading to additional working time or extra cost. According to their business and the purpose of the website, clients can tell if they need a well-ranked website in terms of search engine. It is not most or least important aspect while designing a website; this criterion is on average meaning for some web-users. It is an aspect to consider, and for others, it does not matter. 19.5% think it is one of the most important criteria, while 11.5% think it is the least important criterion for a proper website. This criterion is about allowing users to search the internet for a website content using keywords; according to the number of responses, it is not a priority aspect from clients who needs a website. Moreover, the middle bar is the highest one (28.7%) representing the average. Based on the above data, the most common answer is that a well-ranked website is essential. Those who think it is not essential are very few represented with 11.5%.

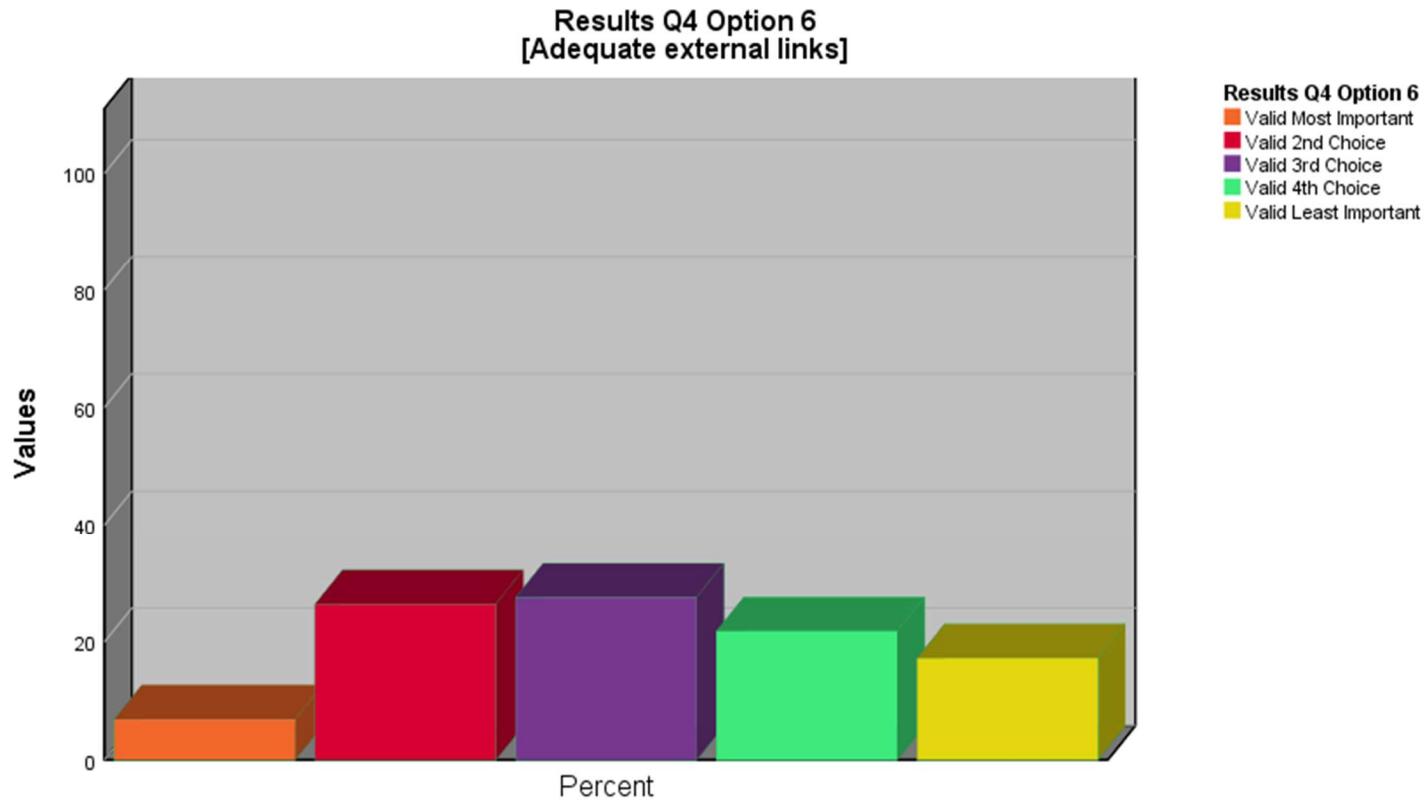


Figure 4.10: Adequate external links

External links refer to links that linking domain to other websites on the internet link on websites which are redirecting users to other web pages if they click on them (Kyrnin, 2019). Kyrnin added that a great way to improve a site and gain more visitors is to have external links to the right quality sites. In figure 4.10 answers for criterion six “Adequate external links” are represented. Based on the survey results, only 6.9 % chose it as most important, while 17.2% think it is the least important criterion to consider when designing a website. 27.6% selected the above criterion as an average option revealing to us that it is not very important but not least important ever; it has a role to play as little as it can be. External links are any links posted on another website but points to a web resource or have the possibility to insert a link to another resource on a specific site. This criterion might not be the most important but is recorded third in term of importance.

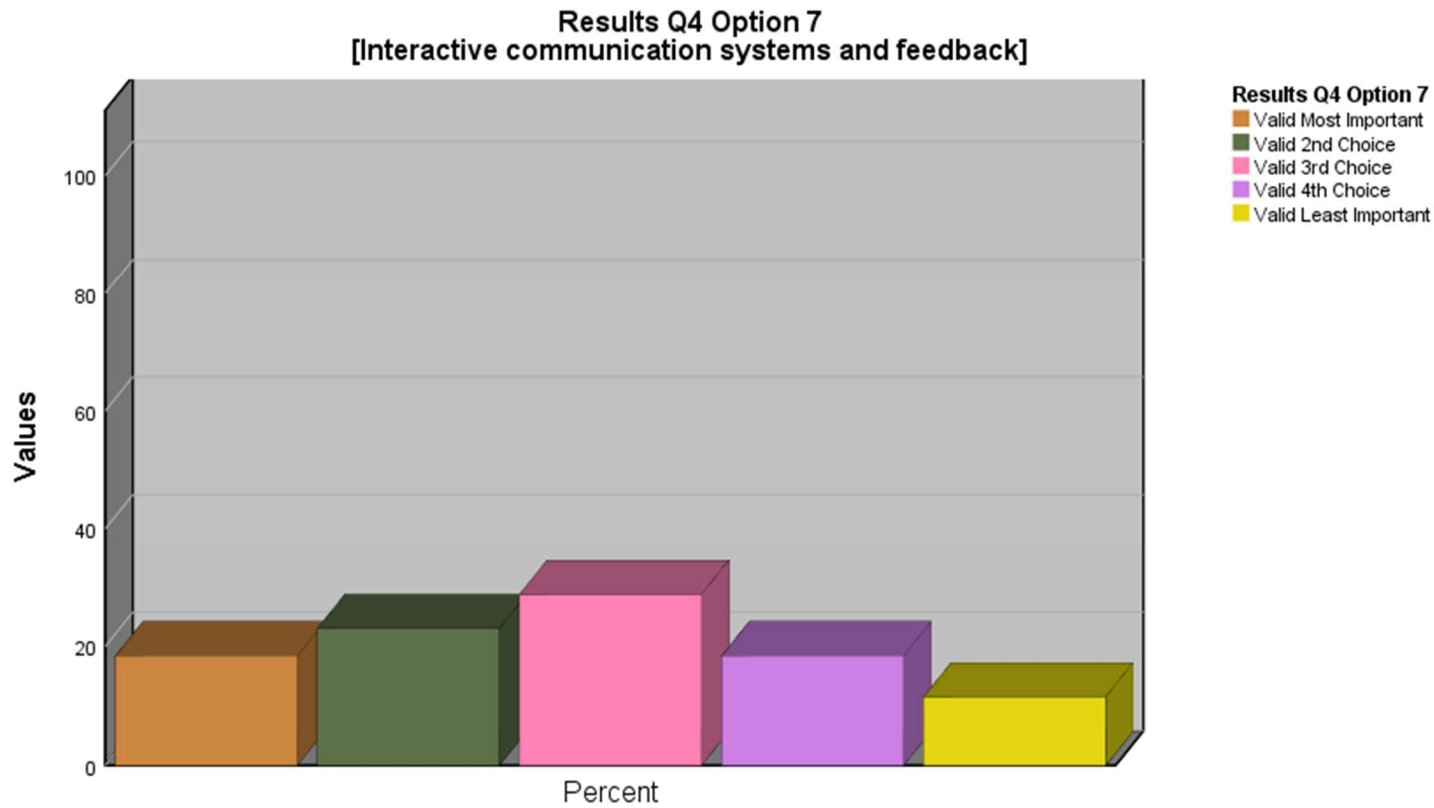


Figure 4.11: Interactive communication systems and feedback

This criterion refers to interaction and exchange of messages taking place both ways from sender to receiver vice-versa. Figure 4.11 represents the responses for the following criterion: interactive communication systems and feedback. 28.7% think it is not essential, but on average, it an aspect to consider while designing a website. Secondly, 18.4% of respondents think that for clients to have a good communication system is essential, while 11.5% think it is the least important criterion. According to the responses, clients on average would like a website where they can quickly get feedback from customers/users as well as exchange ideas and messages; ideally a two ways communication system via internet from sender to receiver and vice-versa.

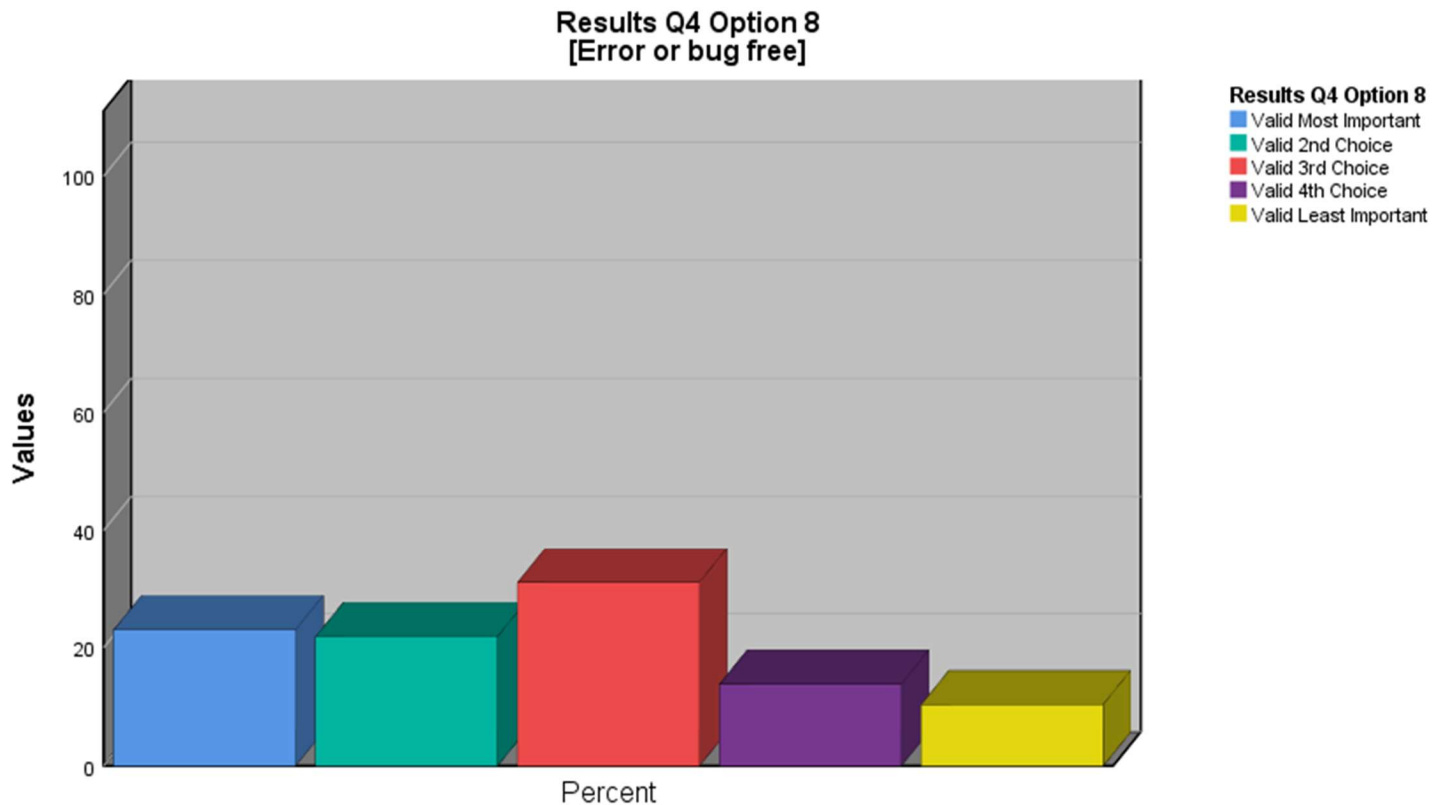


Figure 4.12: error or bug-free

A bug is a term used to define an error with an unknown location and reason (Padua, 2011:528). It is the responsibility of the design and development team to ensure that clients get “bug-free” website as it a technical issue which can be fixed by them only even if avoiding bug is easy as they can come from different reasons. The results for the “error or bug-free” criteria are displayed in figure 4.12. The data reveal that 31% consider this criterion as necessary on average but not the most important. Moreover, 23% think it is the most crucial aspect, while 10.3% think it is among the least important ones. According to web designers and web developers’ responses, clients would like a website with no mistake in coding, also called defect. It might not be considered as an essential criterion; clients do not want a website with a fault in a computer program or the software system. Results show that most of the clients do not know the importance of having “bug-free” website; therefore, the team should explain to them what they will do to

ensure there is no bug and why it is essential depending on the use of the website. For example, a website where users can pay online should avoid bug as it can lead to issues during payment process leading for double payment; this issue will not encourage clients to use this website anymore.

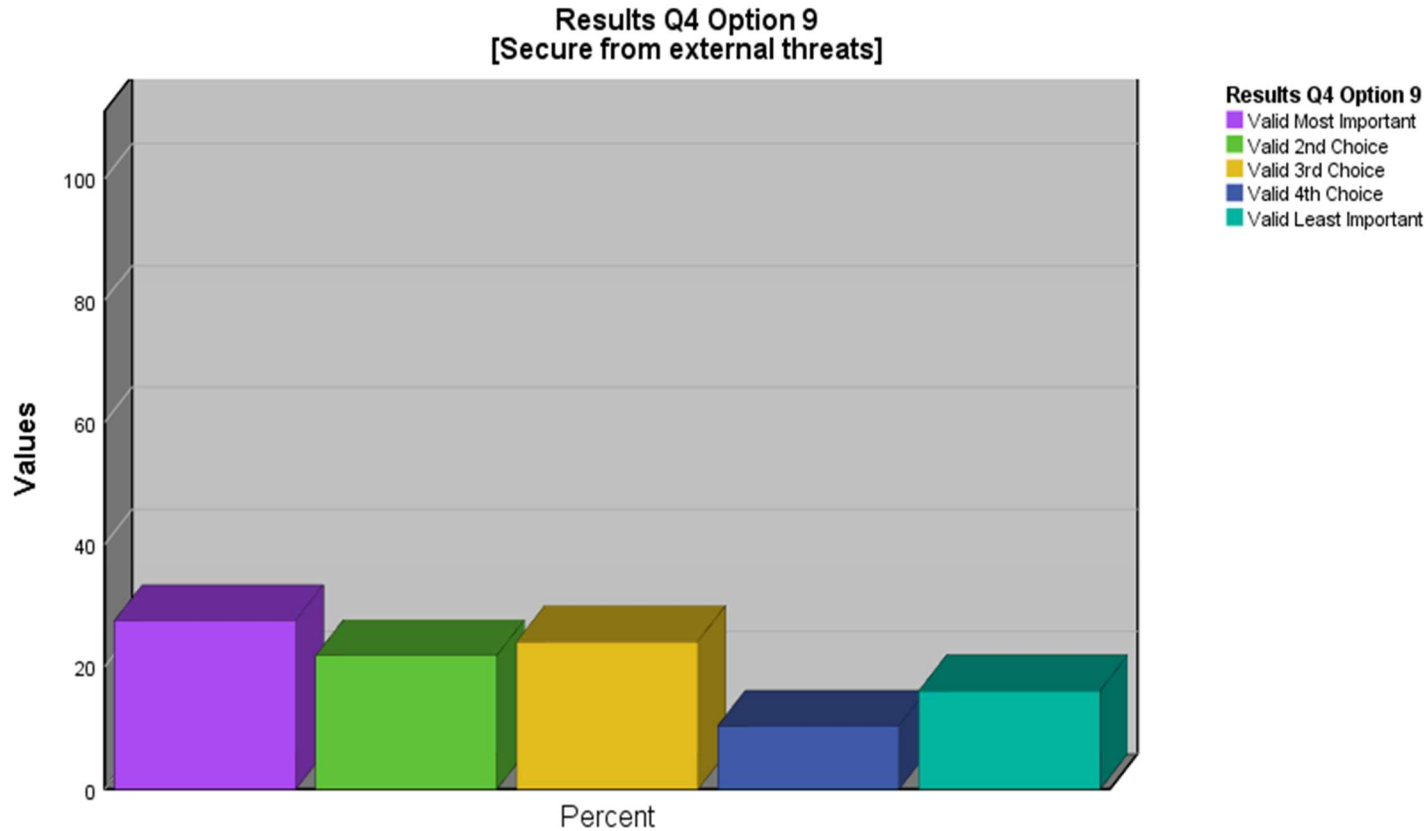


Figure 4.13: Secure from external threats

The most dangerous risk for a website comes from external threats done through the internet; therefore, it is crucial to secure a website system from internet threats (Rountree, 2013:123). Figure 4.13 shows the results for the “Secure from external threats” criterion. This criterion is considered as one of the most critical aspects for a website. Our survey result showed that 27.6% of respondents chosen this criterion as the most important. 21.8% chosen it as the second choice in terms of importance and 24.1% as a third choice. The above data showed that clients consider essential a safe and unthreatened website; safe against any malicious actions that can

compromise their employees or customers/user’s data security. only16.1% think it is one of the least important aspects to consider. The project team during the briefing session can explain to clients the danger of external threats and to what extent it can affect user experience.

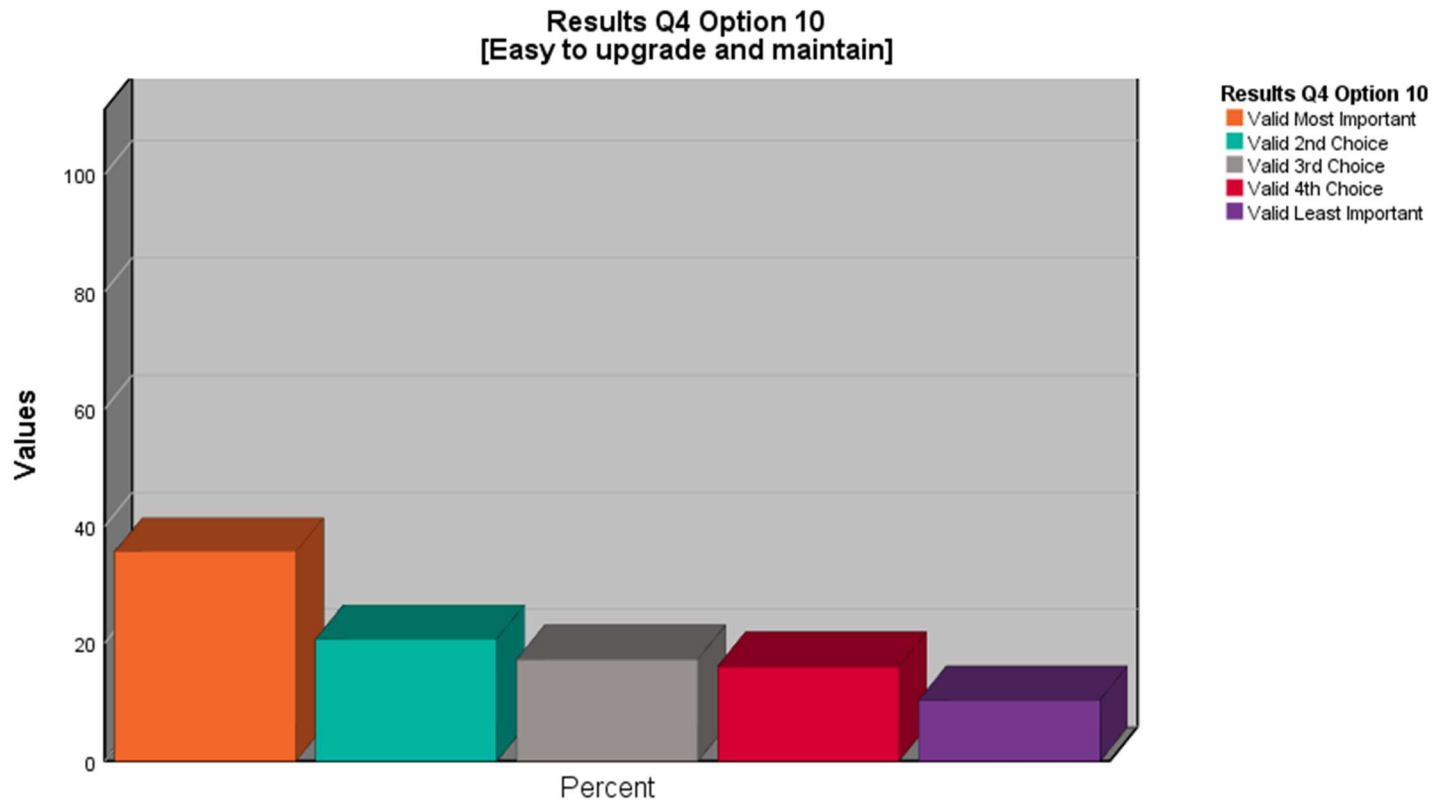


Figure 4.14: easy to upgrade and maintain

It refers to what extent clients can make changes on their website and add information without a web developer help. Some website owner wants to have the opportunity to do small changes on their website on their things like updating office address or phone number. This option should be discussed with the client depending on the complexity of their website. Figure 4.14 displays the results for the criterion “easy to upgrade and maintain”. This criterion is among the most critical aspect to consider while designing a website; 35.6% represent those who selected “easy to upgrade and maintain” as the most critical aspect. Based on the result according to employees, a client needs to have a website which can be easily upgraded and maintain by clients

themselves; they need a website easy to update without having to go to a web designer or technical staffer. Clients want to be able to add and edit content without technical knowledge.

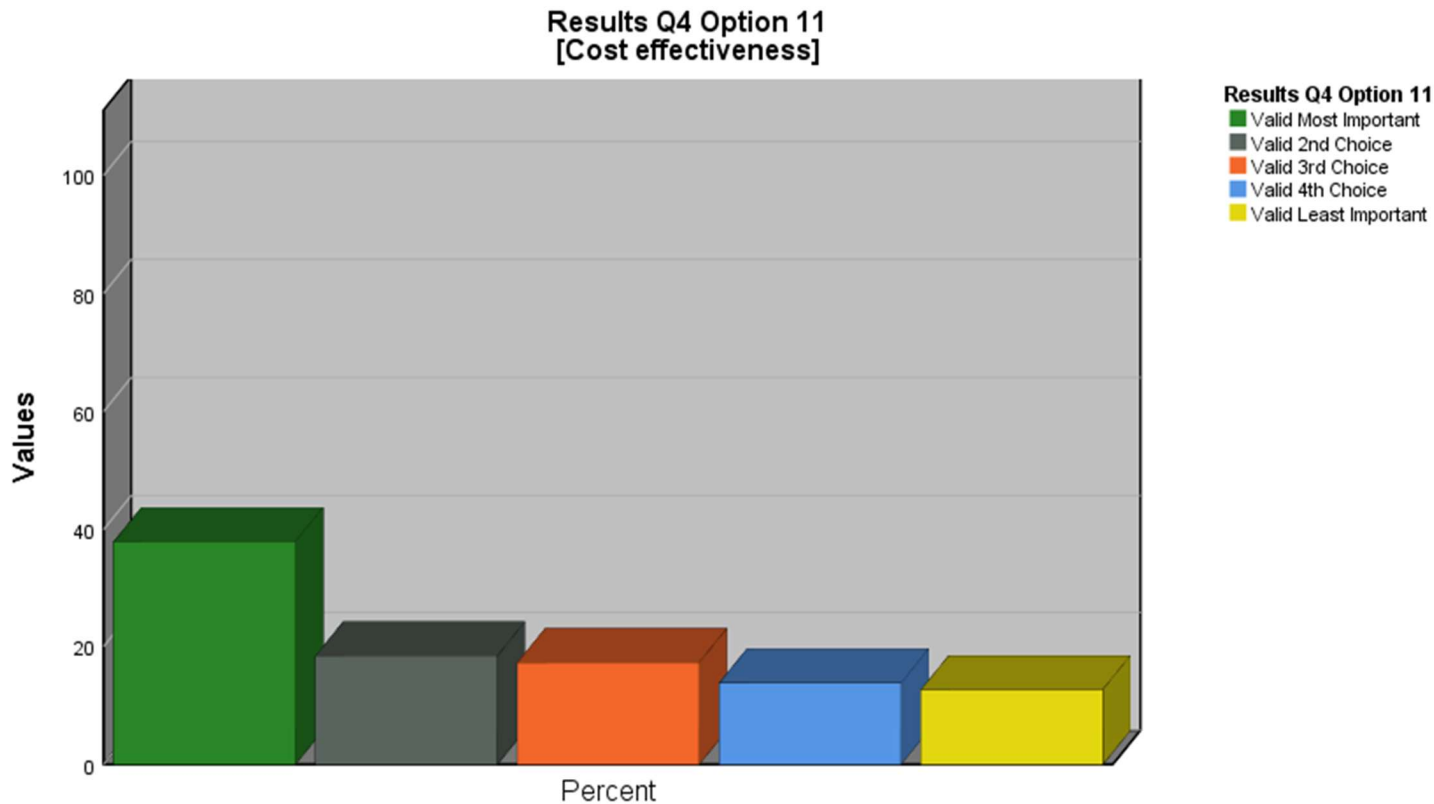


Figure 4.15: cost-effectiveness

Strauss and Hogan (2013:45-46) state that developing a website involve two categories of cost: cost for the initial development and cost for maintaining/enhancing. A site must be maintained on an ongoing basis regardless of its size to avoid losing its effectiveness. The cost to maintain a website is real and must be budgeted if the site is to have a viable future. “Cost-effectiveness” is considered as one of the most important criteria which is represented by 37.9% in figure 4.15. The results from the survey show us that 37.9% of employees consider that the relationship between monetary inputs and the desired outcome play an essential role when designing the website. The respondents have chosen this aspect as second choice and third choice with the following percentages 18.4% and 17.2% respectively. It means the client considers that it is vital for a website to be effective based on how much it cost them to have it designed. The cost must

be aligned with the effectiveness of the final website; there is a relationship between monetary inputs and the desired outcome. Few of the respondent considers the above criterion as least important; represented by the smallest (12.6%) bar in the bar chart above. In term of cost, companies are also offering basic website packages with different options at an affordable cost, mostly for a simple website.

4.2.3. Section C

Please select a response that, in your own opinion, describes the behaviours/attitudes of the Clients you dealt with:

The questions were asked within the objectives to determine the role played by clients in the management of web design project and how it influences constraints such as:

- Scope/ specifications/Requirement
- Time/schedule
- Budget/cost
- Quality

The following diagrams draw from the tables (Appendices) for section B of the questionnaire.

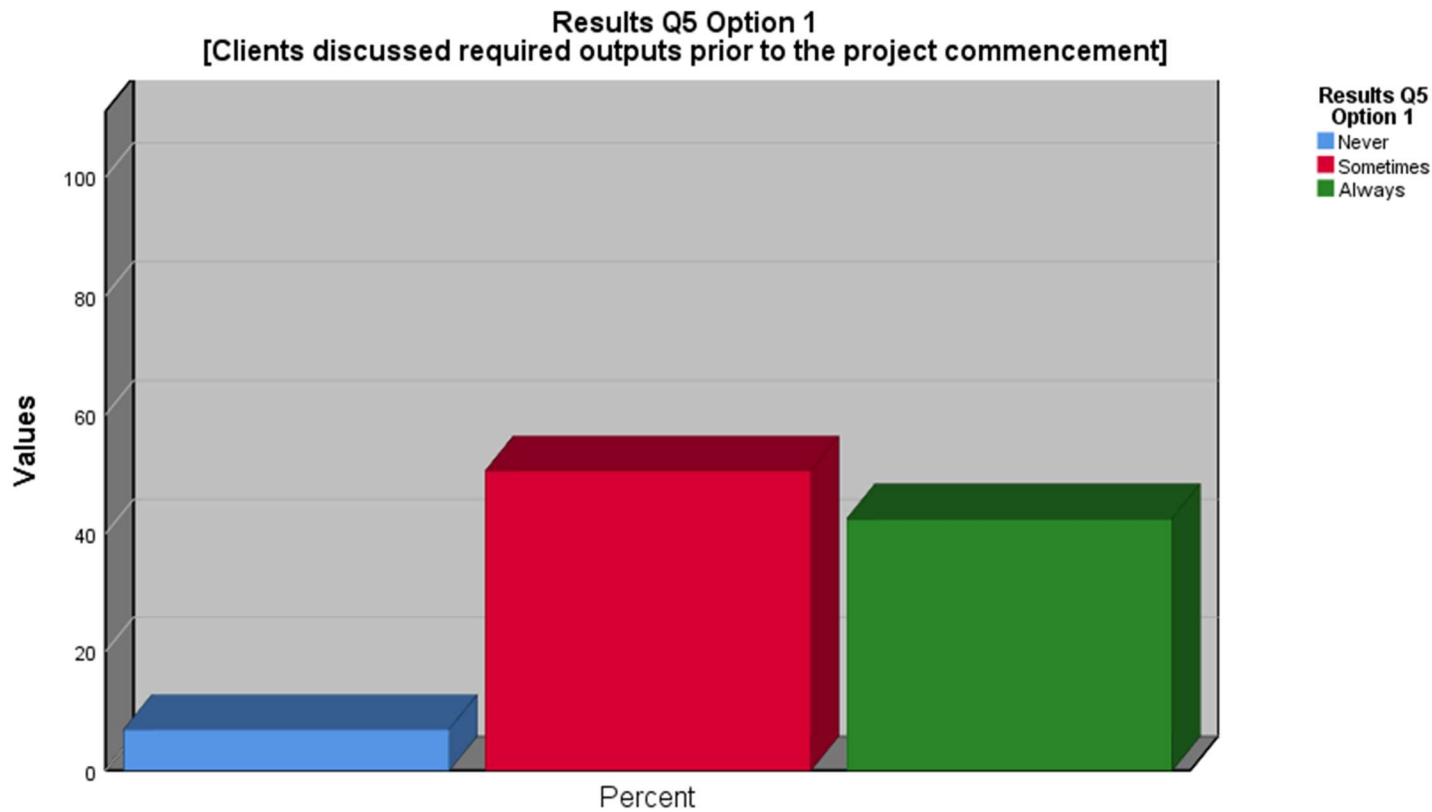


Figure 4.16: Clients discussed required outputs before the project commencement

Clients are the one giving the project team the final picture of what they are expecting; they know the need of their business. The team will then use the information received by clients to formulate the project brief; to draft a project plan and to determine the feature, characteristics of the website. The contents of the project brief give an overview of the project as its content the following: background; project objectives; project scope; project needs, constraints, acceptance criteria (The Chartered Institute of Building, 2014:59). The more information and detail from clients, the better as it allows the team to produce something which will best suit clients' needs and expectations. In figure 4.16, the interviewed people responses regarding the fact that clients discussed required outputs before the project commencement are represented in percentage. Responses are as follow 50.6% for "sometimes"; 6.9% for "never" and 42.5% for "always". Websites are designed based on client's brief; the above figure tells us that 42.5% of the time Clients "always" tell project team what they want at the end of the project as final product in other

words, according to 42.5% of respondents each time clients tell the team what type of website they exactly want. Sometimes means “occasionally” therefore, in our case, 50.6% of the time, clients rarely discuss required outputs before the beginning of the project. The figure reveals that few clients (6.9%) do not take time to discuss wanted outcomes before the project start. Information received from clients helps the team to determine project scope, duration, cost and quality standards.

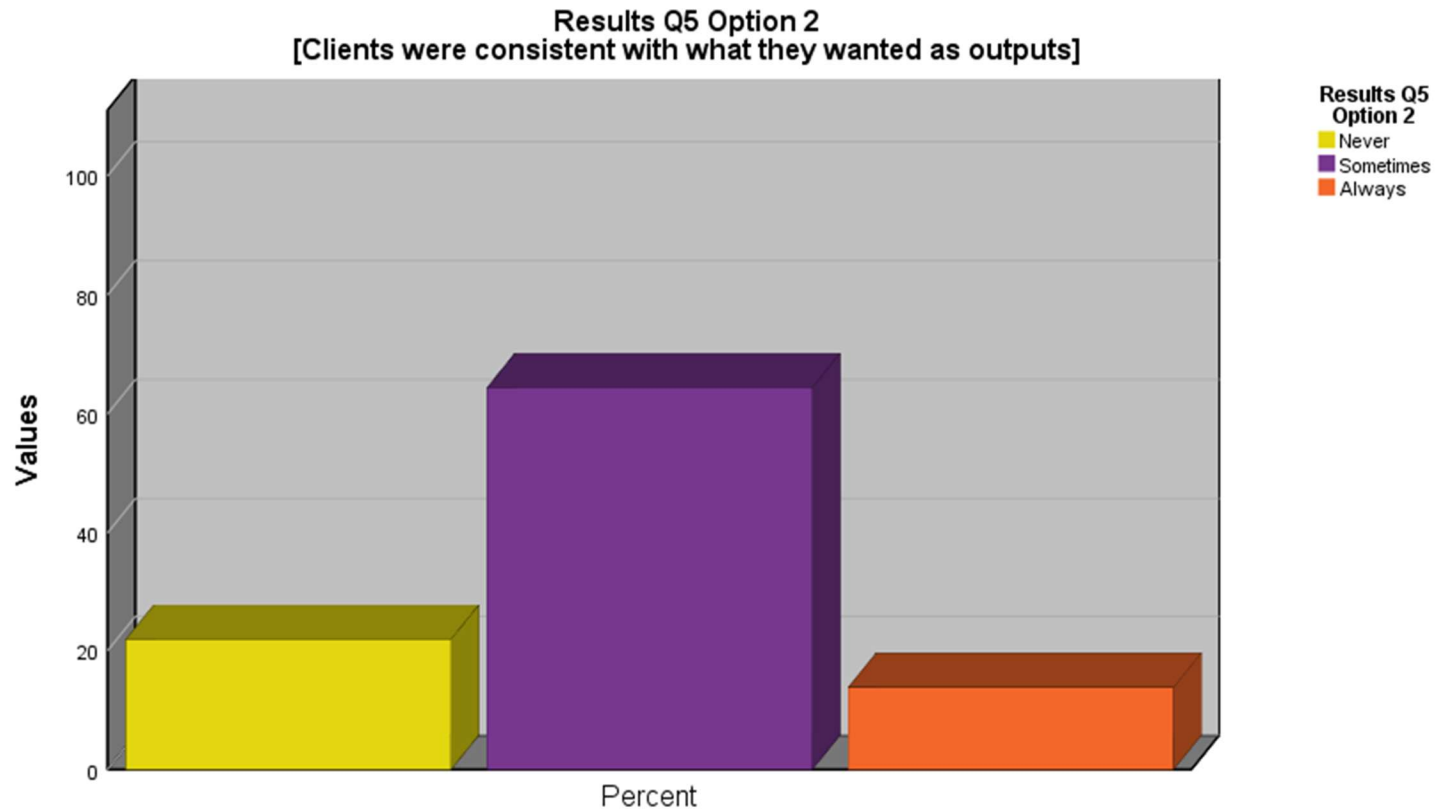


Figure 4.17: Clients were consistent with what they wanted as outputs

This question was asked to allow us to determine how consistent clients with their need were; they are changing their mind throughout the project progress or they are sure from the beginning to the end of the project. Figure 4.17 shows results about client’s consistency with what they wanted as outputs. According to the website design and web development team responses, 56%

said “sometimes” clients were consistent with what they wanted as outputs. 21.8% said “never”, and 13.8 said “always”. The results showed that clients/customers are rarely constant/consistent desired outcomes; in other words, clients’ needs are instable, unpredictable meaning that client need is always changing. Inconsistency about clients’ needs affect the project progress; inconsistency from clients refers to the fact that clients change their mind about what they want. The early they change their mind about an aspect, the better. Changes should happen before the implementation phase. If money and time were already spent, it requires more time and money to add or remove features. Inconsistency may lead to delay and change in the original scope stopping the team from progressing confidently to the next phases as clients are inconsistent. Inconsistency can also affect the overall project plan as it must be adjusted to accommodate regular changes.

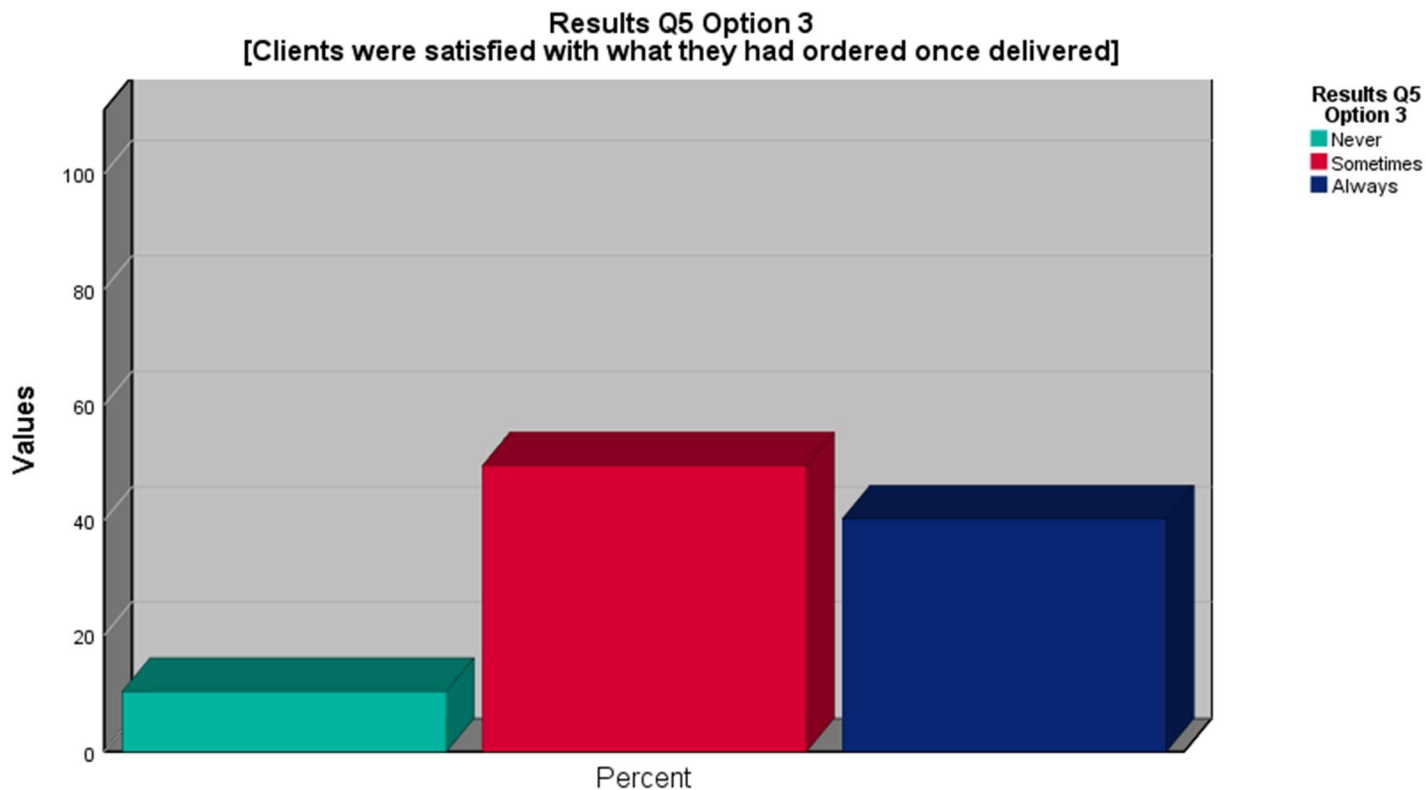


Figure 4.18: Clients were satisfied with what they had ordered once delivered

A website is designed on clients' request; they communicate their needs and those of their web users to the project team. The team has a responsibility to handover a website which suit the client needs and reach their expectations. A successful web design project is judged from the client's perspective. In Figure 4.18, most of the answers reveal that clients occasionally satisfied with what they had ordered once delivered. The results showed that 49.4 % of the times, clients are "sometimes" satisfied; 40.2% of the times clients are "always" satisfied with what they had ordered once delivered and 10.3% represents "never" satisfied. From this figure come out a fascinating point: clients are not always satisfied with the outcome. The difference in percentages between those who said that clients are "always" and "occasionally" satisfied is not quite big; therefore, for some clients the team successfully gave them what they want and for others, they rarely get what they requested.

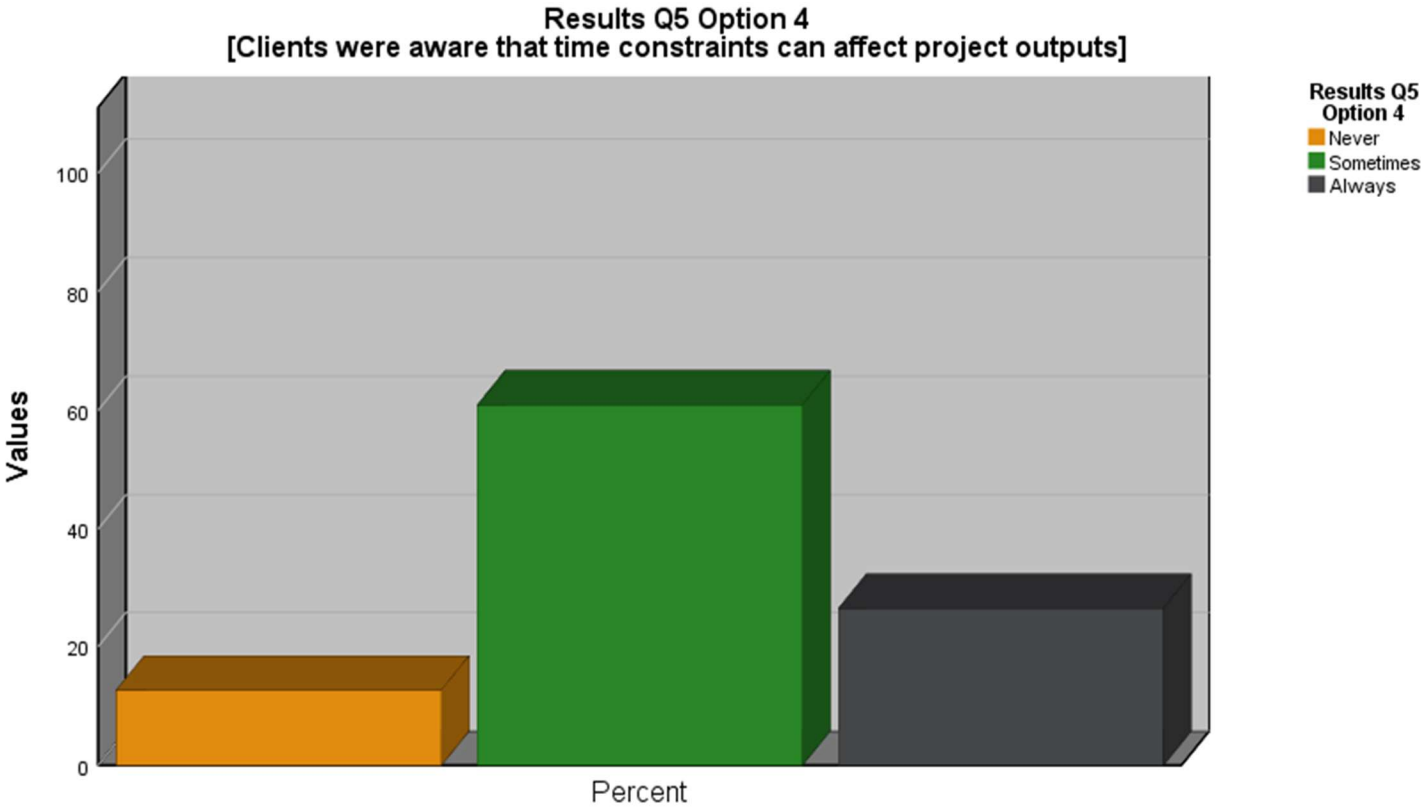


Figure 4.19: Clients were aware that time constraints could affect project outputs

Time is limited, and a project must be completed at a specific date. A characteristic of a project is a fixed completion day which is set at the beginning of the project (Andersen et al., 2009:14). Figure 4.19 indicates that 60.9% of clients are "occasionally" conscious that time constraints can affect project outputs. It means that most of the time, clients who request a website do not have the knowledge or are not well informed about the fact that time limitations may influence the final website. The interviewed people answer that 12.6% (for never) and 26.4% (for always) of the time during a website project, clients were aware that time constraints could affect project outputs. Time can affect overall project success and completion positively or negatively; therefore, it was crucial for research purpose to know if clients are aware of that. If clients are aware of time constraints, they will consider it when deciding on specific aspects during the briefing time with the web project team.

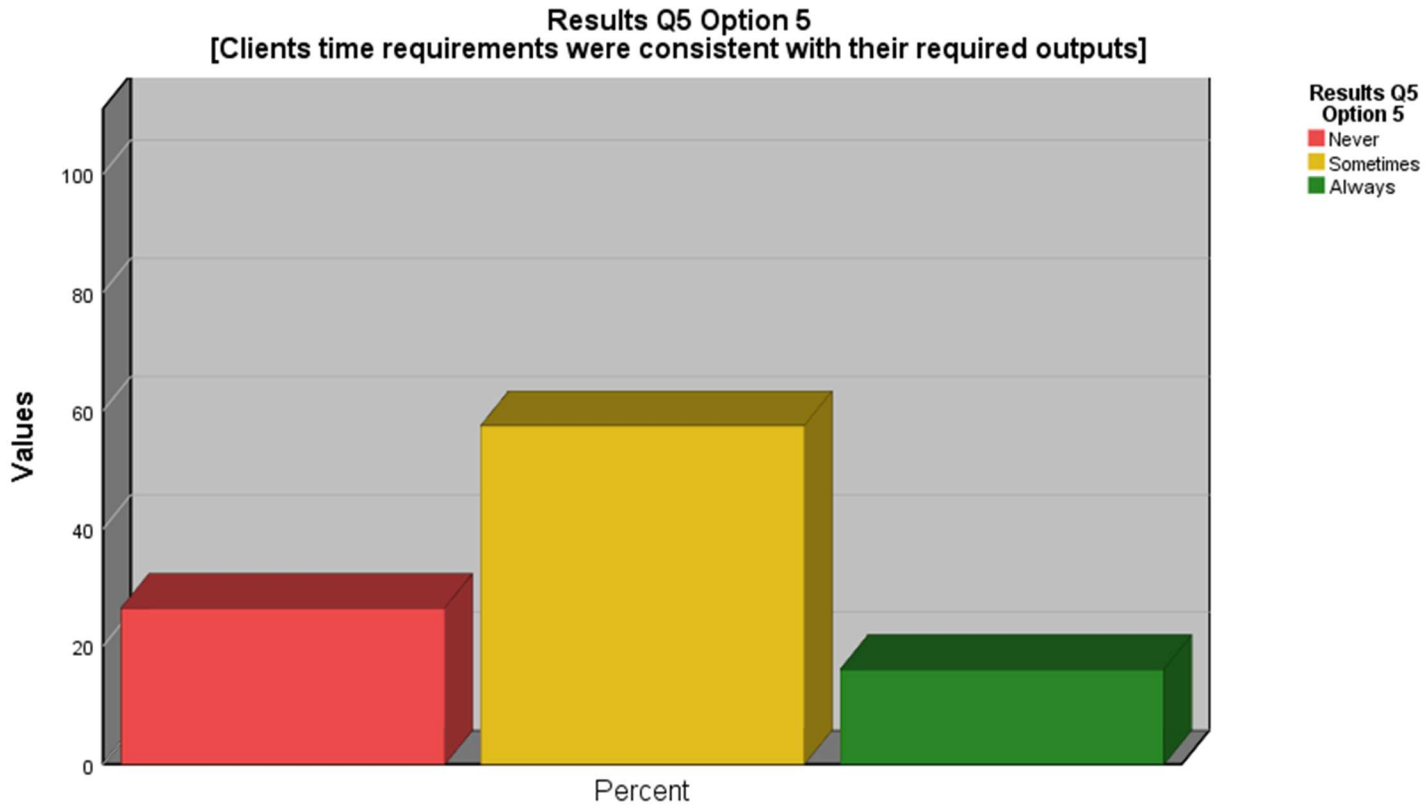


Figure 4.20: Clients time were consistent with their required outputs

The question was asked to help us determine if what clients want (design, pages, contents, features, etc.) for their website were achievable within the time set for project handover. It is important to know if clients' needs were feasible within the project time frame. Time could affect overall project activities. For example, if a client wants a project done within a month; if the minimum completion time is seven weeks, the client will pay the team extra hours or for outsourcing to ensure he/she gets the website in a month. For the same example, a client may refuse to pay extra and decide to adjust his/her expected completion date. The results showed that clients' time requirements were rarely consistent with their required outputs. Figure 4.20 showed that 57.5% put "sometimes" as responses. The above figure indicates that what clients want as final website is "sometimes" not feasible within their expected time. The client due date

may not give enough time to the team to deliver the expected outcomes. The figure shows us that 26.4 % said that “never” clients time requirements were consistent with their required outputs; 16.1% answered “always”. Results show that the scope of work may be too much and not easy to complete within the client due date. In other words, the time set for delivering the project is short compare to the amount of work and effort necessary to complete the website.

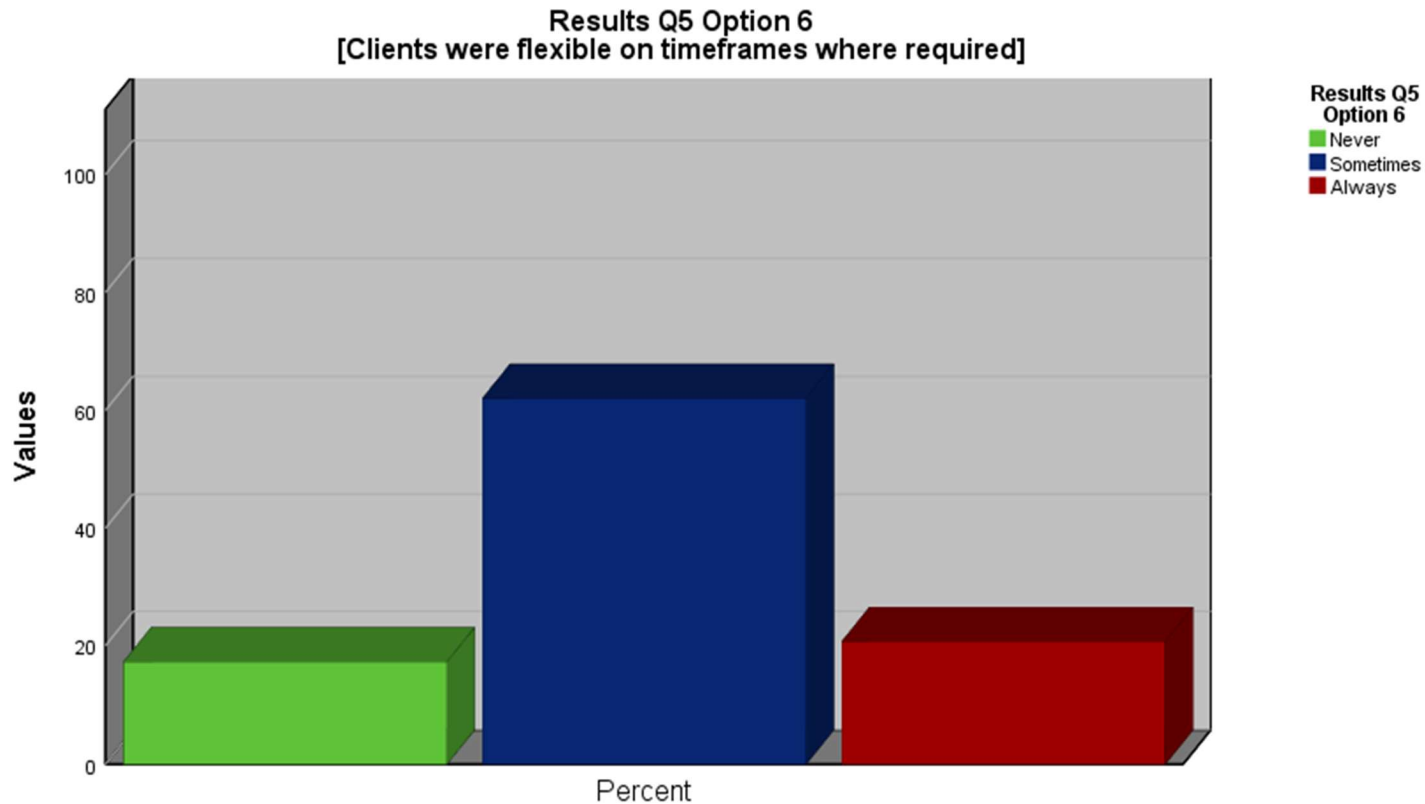


Figure 4.21: Clients were flexible on time frames where required

Figure 4.21 shows the results about the flexibility of clients in terms of time frames. Most of the responses were “sometimes” with 62.1% recorded. The responses for “always” were 20.7%, and those for “never” were 17.2%. Being flexible when it comes to due date is about accepting delays from the team when necessary or accepting that expected time might change depending on the way things happened during project phases. The purpose here was to find out if clients are flexible

when it comes to time changes for a reason or another, time for completion. The figure above reveals that clients are hardly flexible when it comes to time changes or accepting delays. The team might work faster to complete a website with no flexible due date by prioritising tasks compare to a website with flexible completion time. In that case, the flexibility of the client may affect the rapidity of work. Lack of time flexibility may push the team to ensure the site goes live on the agreed date.

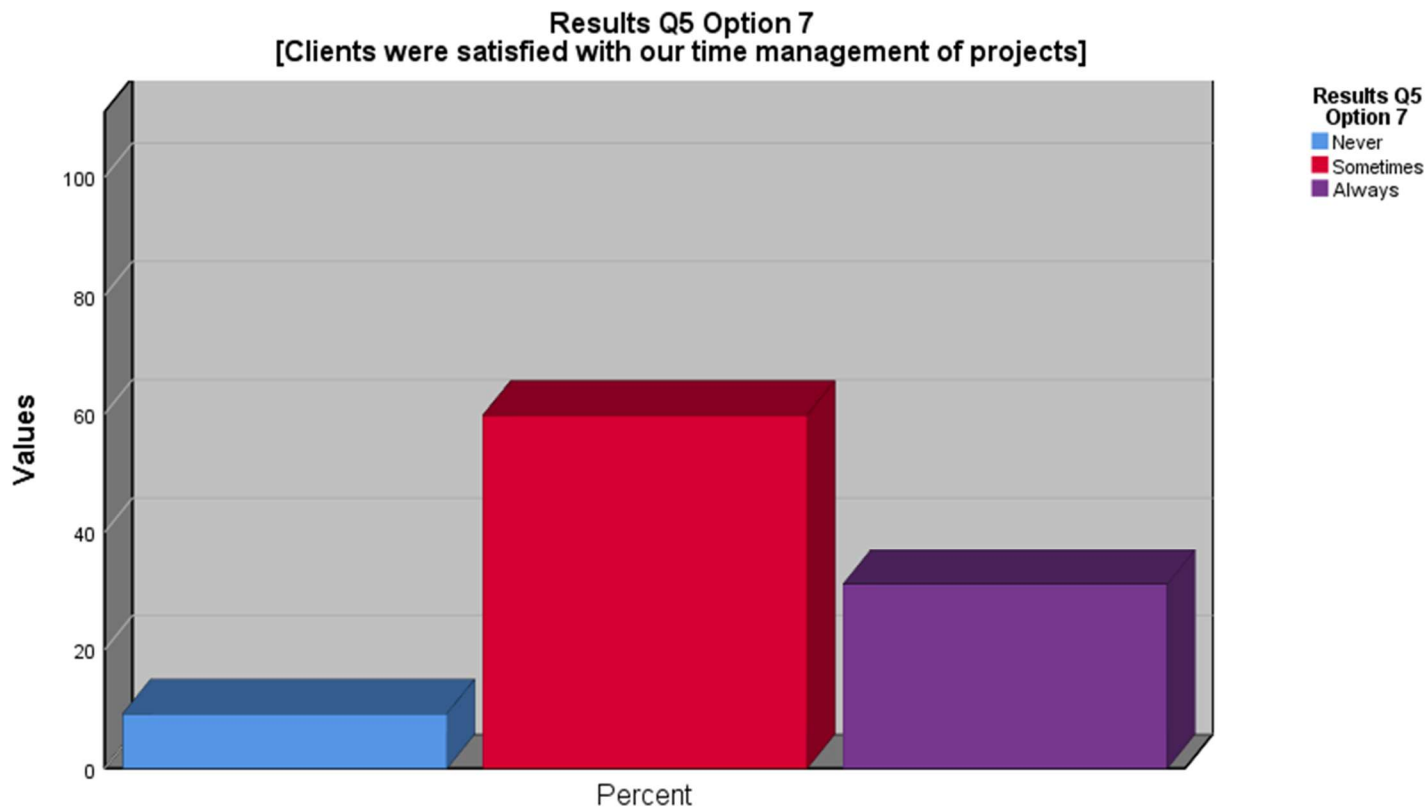


Figure 4.22: Clients were satisfied with our time management of projects

Project time management is the discipline of project management that looks at controlling how long it takes to do tasks and to complete the project (The Balance Careers, 2019). The question

was asked to determine if clients were happy with the way the team manage the time and how they respect deadlines. The way the team manage time may have a positive or negative effect on the client’s overall project experience. In figure 4.22 the higher percentage of interviewed people, around 59.8% mentioned that “sometimes” clients were satisfied with the project team’s time management during projects. In other words, clients are satisfied from time to time which means they are not often happy with time has been managed. Additionally, the interrogated responses were 9.2% for “never” and 31% for “always”.

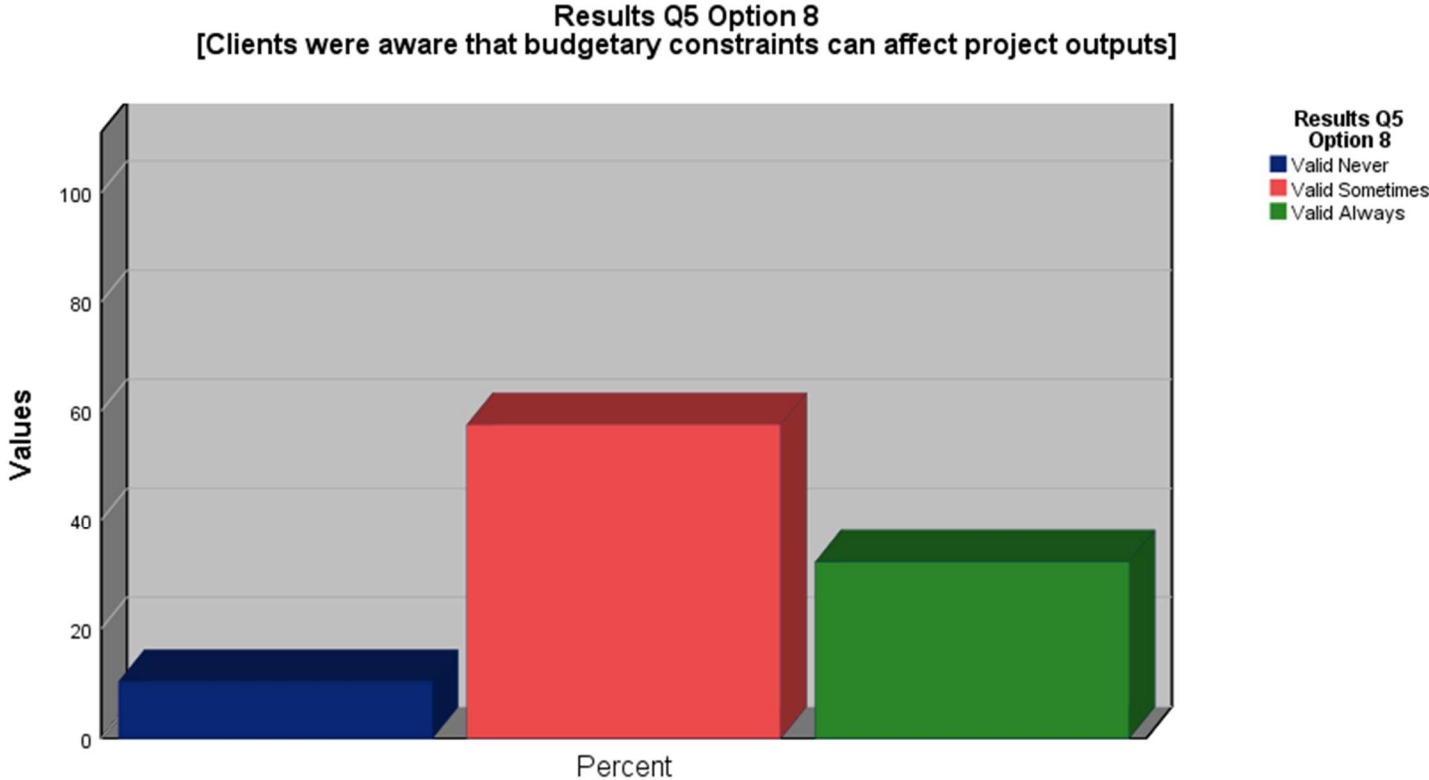


Figure 4.23: Clients were aware that budgetary constraints could affect project outputs

In terms of budget constraints, we wanted to know if clients are aware that the money, they are willing to pay enough to get what they want for their website. In figure 4.23, the responses about the awareness of clients on the impact that budgetary constraints have on final outputs. The

higher percentage is 57.5% which is representing the number of people who responded “sometimes” clients are aware that budgetary constraints can affect project outputs. In other words, clients, most of the time, are rarely conscious that money limitations affect website features. The more money available, the more characteristics the website can have. It can also be noticed that 32.2% of the time clients have “always” in their mind the idea that budget limitations have a merger impact on the expected final product delivered. Those who answer “never” to the above question represent 1.3%, meaning that very few clients do not have any idea of the impact of budgetary constraints on the final website. Budget constraints can affect website specifications as some features can be delivered if a certain amount of money is spent to be able to get those specifications. Let us say a client wants to sell and receive money through their website. There are several ways to get money through a website. First, company banking details can be put on their website at no extra cost but might not be the most comfortable option for their users. Second, they can make use of an “eChecks” through ACH Processing. Third, use “click-to-pay email invoicing”. Fourth, use an e-commerce service at an extra cost. Last option, to get secure digital banking from their bank. Each option has a different cost and has certain advantages and disadvantages.

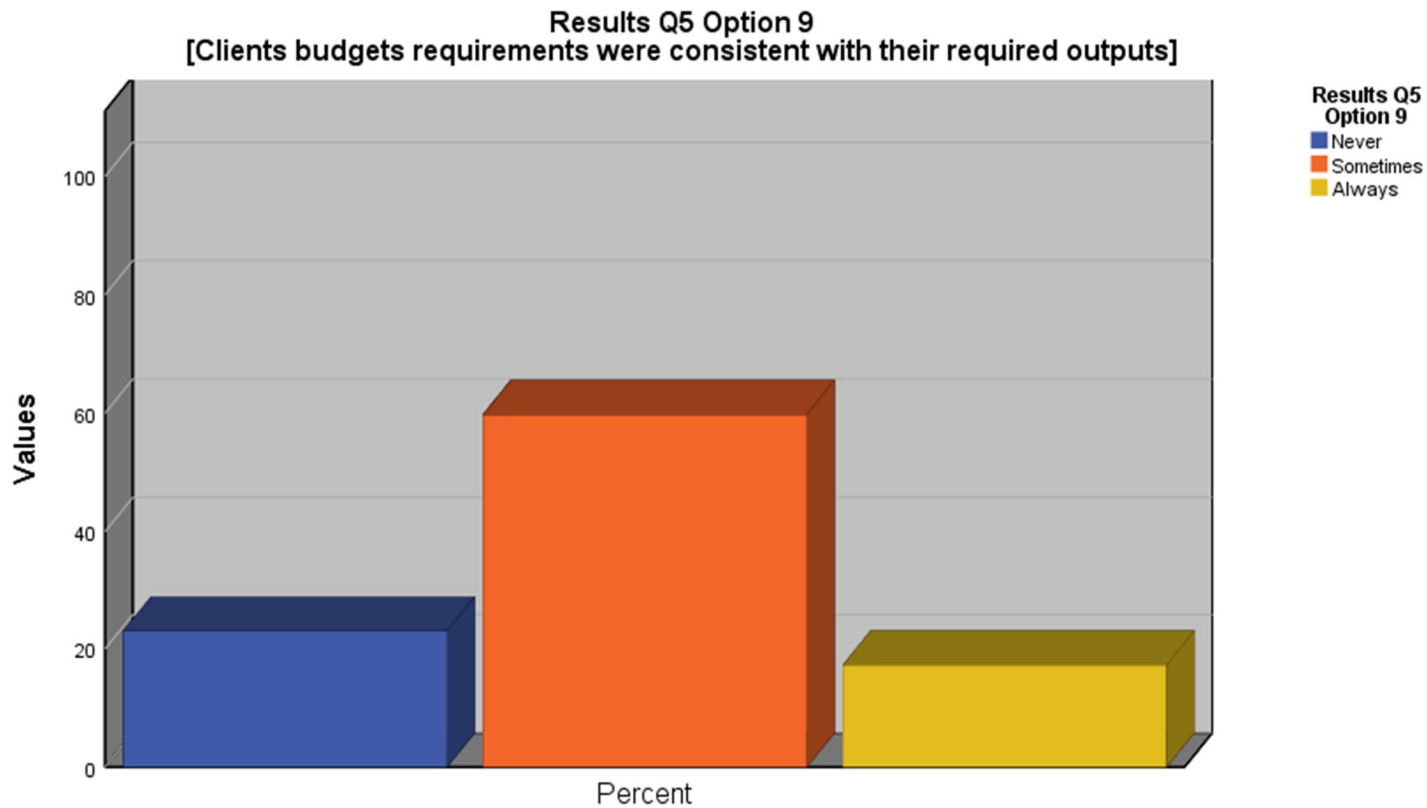


Figure 4.24: Clients budgets requirements were consistent with their required outputs

The purpose here was to determine if clients' expectations were achievable within their budget. The figure 4.24 indicates us that "occasionally" the budget given by clients was sufficient to deliver what they want as it can be seen 58.8% is the higher percentage and it is representing the responses for "sometimes". This 58.8% tells us that in most of the cases, the client rarely asked a website which asks more money than they are willing to spend. Moreover, 23% of the respondents answered "never"; meaning the budget that the client has in mind were consistent or enough to deliver what they expected as a website. Finally, 17.2% told us that what the clients required budget was "always" enough for the type of website they desired.

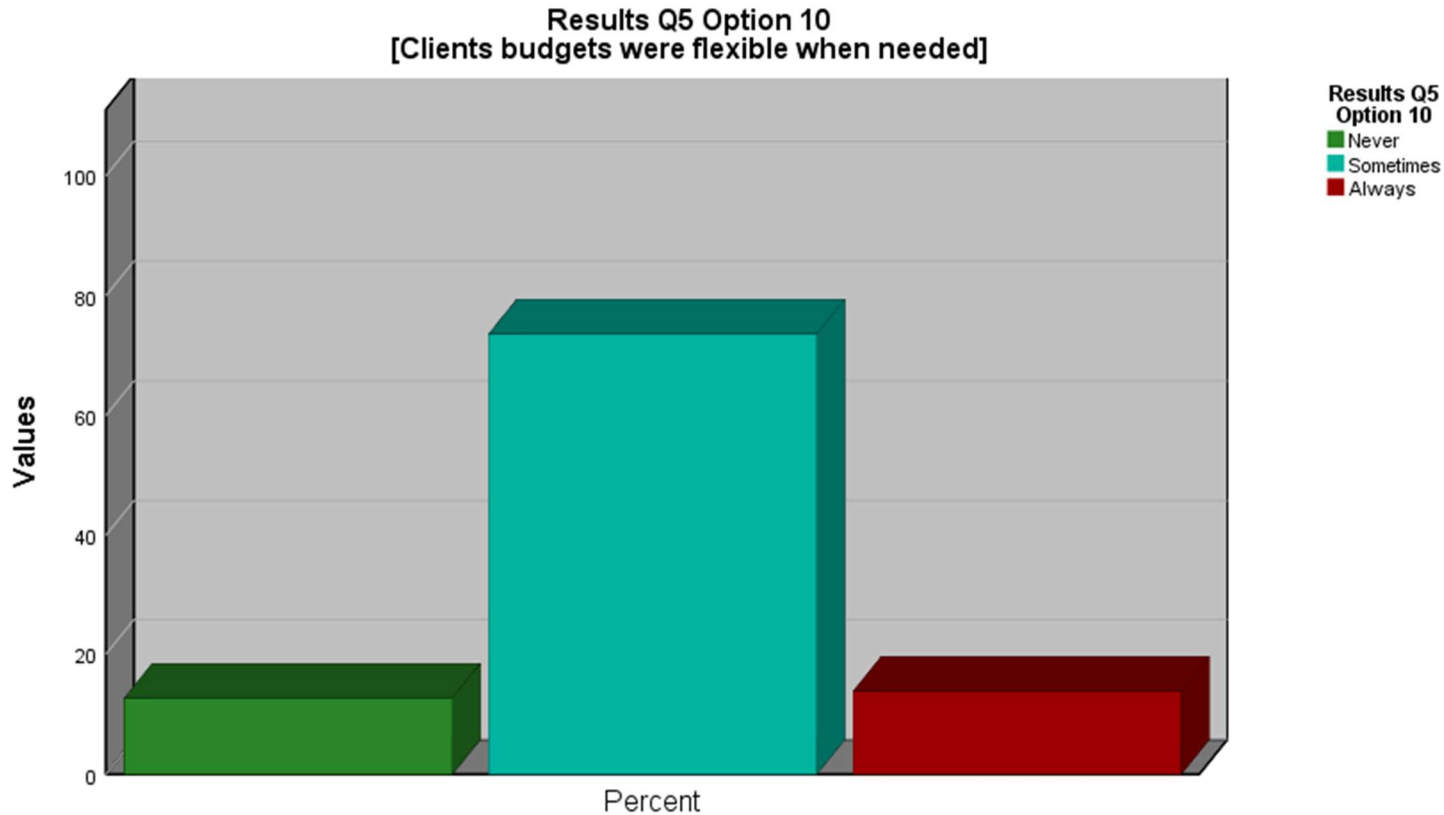


Figure 4.25: Clients budgets were flexible when needed

“Sometimes” clients’ budget was flexible when needed is the response with a higher percentage (73.6) in figure 4.25. The responses for “always’ and “never” were 13.8% and 12.6% respectively.; which are quite low compared to the 73.6% recorded for the “sometimes” responses. The purpose was to determine to what extent clients were flexible with their initial budget; flexibility when it comes to budget refers to the capacity of a client to agree on budget changes (usually increase of budget) during the project. The flexibility of budget allows the project team to suggest an additional feature for clients’ website at an extra cost giving them a range of option for the website if needed.

Results Q5 Option 11
[Clients were satisfied with our completion of projects within budget]

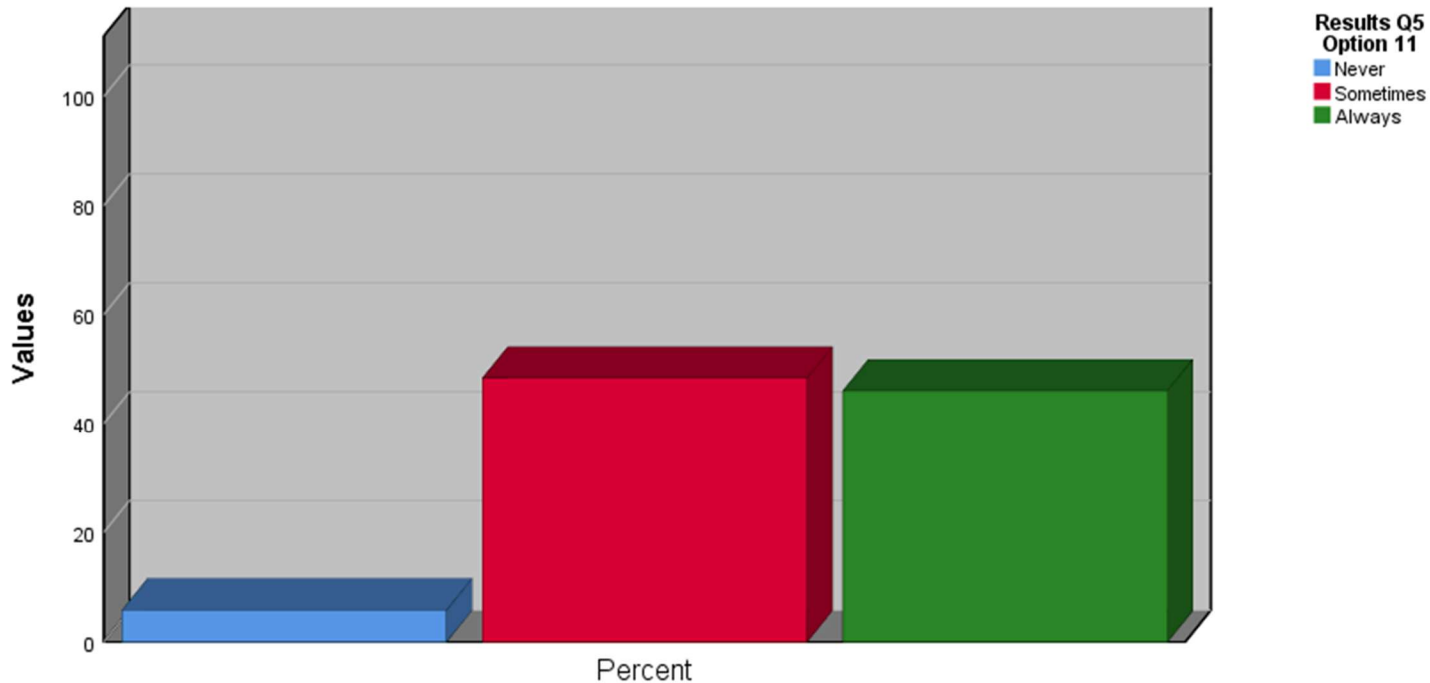


Figure 4.26: Satisfaction of Clients with completion of project within budget

Clients' should feel like their money is spent correctly and that money is spent within the agreed budget or even less if possible. In the above figure, the answers "always" and "sometimes" have almost the same percentage, the difference in percentages between the two responses is quite small: 48.3% for "sometimes" and 46% for "always". The figure shows that clients were "always" happy 46% of the time with the fact that projects were completed with the initial budget or budget agreed on meaning the team completed the website based on the money which was available for this specific website. The percentage for "never" is 5.7% which is quite low compared to the other two percentages mentioned above, this shows us that only in few occasions that client was not happy at all with the way budget use at the end of the project. If clients are confident that right decisions are made when it comes to spending money on their website, they will behave in such

a way that the team will feel to have total control and freedom as clients trust them to make decisions for the good of the project.

4.2.4. Section D

“Please select a response that, in your own opinion, best describes the Impact that client behaviour has had on your performance on web projects.”

The following diagrams were designed using tables (Appendices) extract on SPSS for section D in the questionnaire.

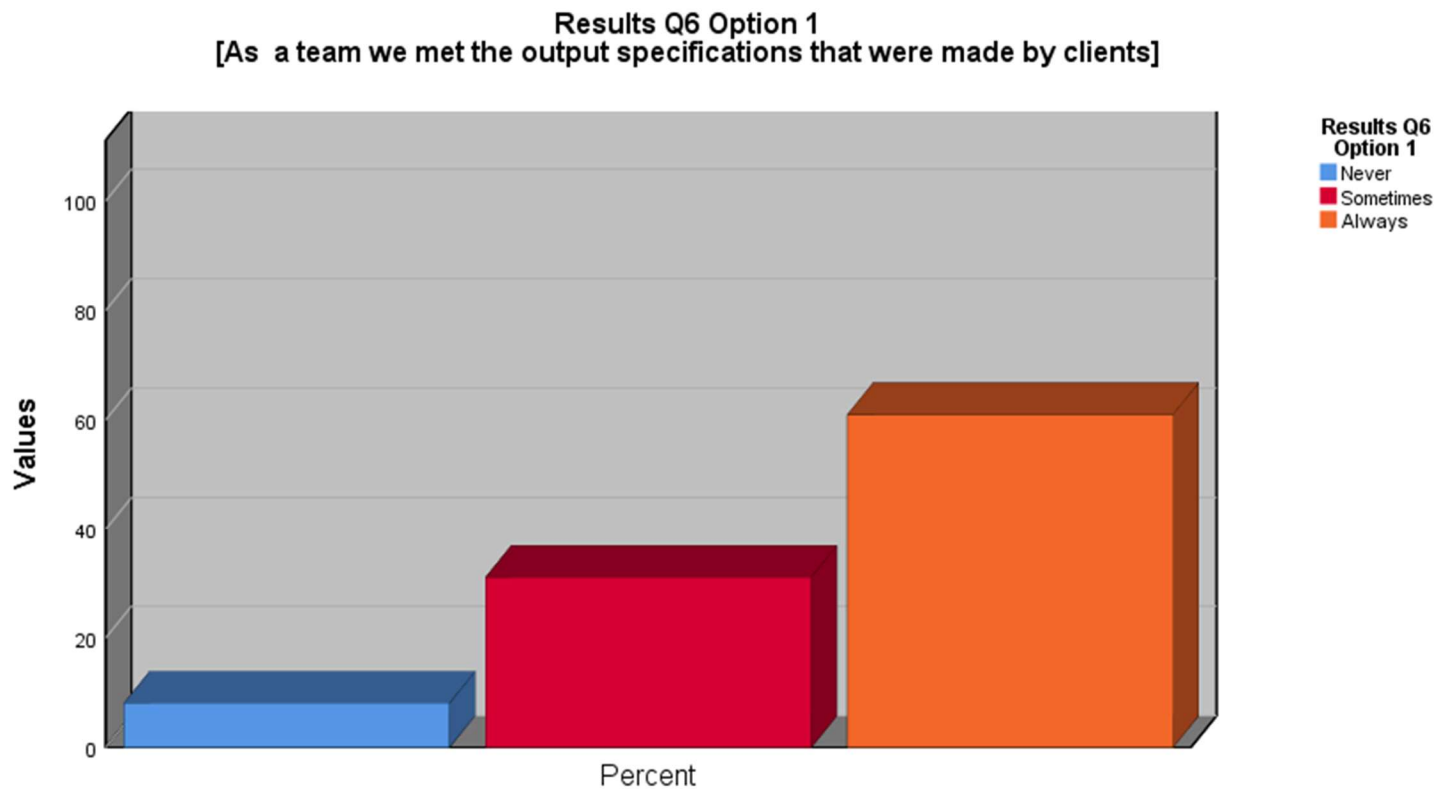


Figure 4.27: As a team, we met the output specifications that were made by clients

All decisions taken must be made to ensure that clients are happy with the final website handover to them at the end of the project. Figure 4.27 reveals to us that according to the project management team responses, 60.9% of the time they “always” met the specifications of the output that were made by clients which are represented by the highest bar amount the three bar charts in the above figure. The middle bar is the second highest one representing the “sometimes” responses from the team, which is equal to 31%. The middle bar is telling us that in some instances, the project team did not meet clients' output specifications but did meet them in other cases. In other words, it means at the end of the project, clients can be happy to get exactly what they asked, or it might happen that they are not satisfied. The smallest bar represents eight percentage (8%) for those who answer “never” to the following statement: “as a team, we met the specifications of the output that were made by clients”. The 8% is telling us that the chances for the team to not meet client’s outcomes specifications were meagre, meaning the project team does it best to give clients what they expected.

Results Q6 Option 2
[As a team we met the budgets that were agreed with clients]

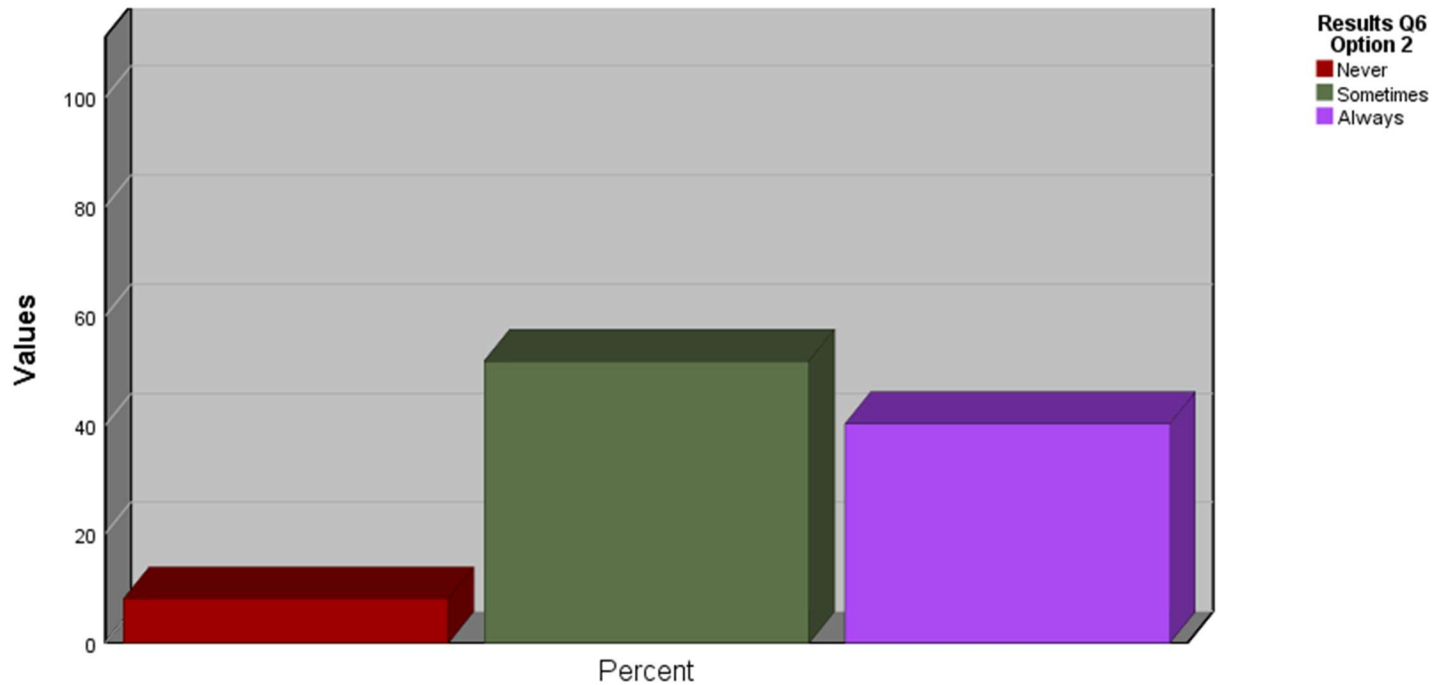


Figure 4.28: As a team, we met the budgets that were agreed with clients

Clients need to know if the team deliver the website within the agreed budget. Looking at figure 4.28, the middle bar is the longest one amount the three bars with 51.7%. The middle bar represents answers for “sometimes”; it is indicating to us that the project management team “sometimes” complete the project within the agreed budget and some other time they do not depend on a project to another. Moreover, 40.2% of the times the project team “always” met the budget that was agreed with clients. 40.2% is reflecting the fact that the team is working and is completing the project with the initial budget. The last percentage is 8% (the smallest bar in figure 4.28) representing the answer “never” from the team. 8% is a low percentage for each time the team did not use the initial budget probably go over budget.

Results Q6 Option 3
[As a team we met the time frames that were agreed with clients]

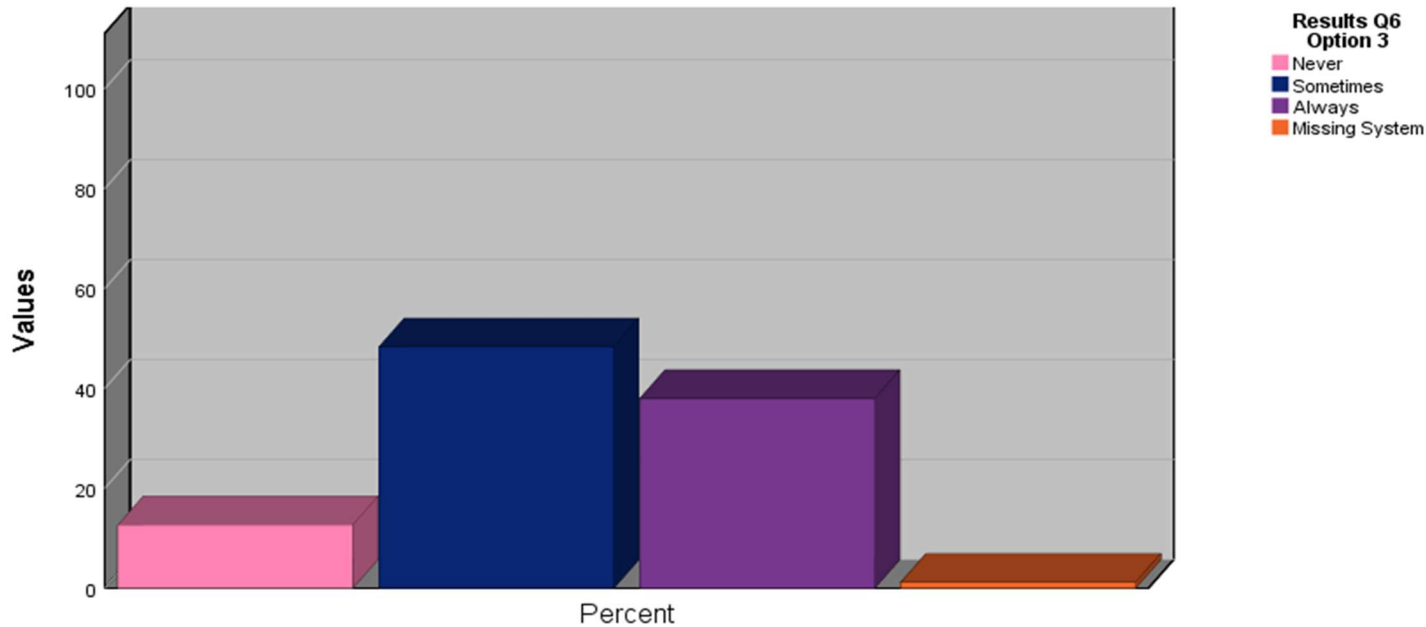


Figure 4.29: As a team, we met the time frames that were agreed with clients

The agreed time must be met to deliver the final project and allow the website to be live for users. Figure 4.29 is showing us percentages about how well the team met the time frame agreed with clients. The following response was the most popular one with 48.3%: “Sometimes as a team, we met the time frame that was agreed with clients”. The above statement is telling us that some clients were happy the fact that the team did complete the project on time, but sometimes it happens that the job was not done on time. The second most frequent response with 37.9% was: as a team, we “always” completed the website project within the time agreed with the client. “Always” here always means that (37.9%) the team did the job on time. The percentages recorded for “never” as responses were 12.6%. Finally, one response is missing representing 1.1%.

4.2.5. Section E

According to Miles, Huberman and Saldaña (2014:12) qualitative data analysis can be divided into the three following activities: data condensation, data display and conclusion drawing/verification. The purpose is to categorise and reduce the large quantity of data collected into meaningful units to be able to interpret them.

The research used Marshall and Rossman (2011b:209-210) procedures to inspire and guide the analysis of qualitative data which are: “organising the data”; “immersion in the data”; “generating categories, themes and patterns”; “coding the data”; “interpretations”; “searching for alternative understanding” and finally, “report the results”. To be able to analyse the open-ended as well as the interview responses recorded, the researcher undertakes the following steps:

Step 1: Open-ended question responses were extracted from google sheet as an excel worksheet. The transcribed data from the interview were repetitively read through for the researcher to be familiar with the data.

Step 2: Quantitative data can be used directly or coded into categories or labelled using easy-to-remember abbreviations (Blessing and Chakrabarti, 2014:117). The researcher went through the data to group answers in terms of common subject or in terms of constraints (budget, cost, time, quality). Some answers were grouped in terms of Positive, Negative as well as Neutral impact on team performance or impact on project progress. Unclear or confused responses were removed. The researcher then identified important themes, recurring ideas, and patterns of belief to assist him/her the integration of the results. The process of category generation involved noting patterns in the research participants. As categories of meaning emerged, the researcher searched for those that were internally consistent but distinct from each other. The researcher uploaded all responses on "codit. Co" platform, which is a data analysis tool helping researchers to code and to analyse text data online as quick as possible. The texts must be coded into manageable content categories; after uploaded data on codit. Co platform, the researcher, use codit.co to code the survey responses; to categorize short texts; to evaluate feedbacks in an easiest and fastest way.

Step 4: When categories and patterns between them became apparent in the data, the researcher then evaluated the credibility of these developing hypotheses and testing them against the data. It involved evaluating the data for their informational adequacy, credibility, usefulness, and centrality.

Step 5: As the categories and patterns between them emerged in the data, the researcher engaged in challenging the patterns that seemed apparent. Alternative explanations were looked and described until the researcher reached the explanations that are most reasonable of all.

Step 6: After completed coding of data on codit.co; the researcher extracted that information to a spreadsheet and uploaded this spreadsheet to SPSS to be able to perform statistical analysis, generate frequency tables and graphs. The graphs were analyses and discuss to produce an interpretation of data. By reporting the results report, the researcher gives shape and interpretation and meaning to the enormous amounts of raw data.

Table 4. 1: Descriptive statistic – Frequency tables for Section E

Statistics

Number of answers this code appears in

| | | |
|---------|---------|-------|
| N | Valid | 96 |
| | Missing | 10 |
| Mode | | 1.00 |
| Range | | 71.00 |
| Minimum | | .00 |
| Maximum | | 71.00 |

| Question | | | |
|----------|-----------|---------------|--------------------|
| | Frequency | Percent | Cumulative Percent |
| | | Valid Percent | |

| | | | | | |
|-------|-----------------------------------|-----|-------|-------|-------|
| Valid | behaviours expected from a client | 20 | 18.9 | 18.9 | 18.9 |
| | Impact Negatively on performance | 28 | 26.4 | 26.4 | 45.3 |
| | Impact positive on performance | 20 | 18.9 | 18.9 | 64.2 |
| | keep customers happy | 10 | 9.4 | 9.4 | 73.6 |
| | nan | 10 | 9.4 | 9.4 | 83.0 |
| | things expected when delays occur | 18 | 17.0 | 17.0 | 100.0 |
| | Total | 106 | 100.0 | 100.0 | |

Code Name

| | | Frequency | Percent |
|-------|----------------------------|-----------|---------|
| Valid | Attitude and Behaviours | 11 | 20.8 |
| | Budget | 9 | 17.0 |
| | Communication and Feedback | 6 | 11.3 |
| | Expectations | 3 | 5.7 |
| | unvalide | 5 | 9.4 |
| | Quality | 1 | 1.9 |
| | Scope and Requirements | 10 | 18.9 |
| | Time | 8 | 15.1 |
| | Total | 53 | 100.0 |

Code Category

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|----------|-----------|---------|---------------|--------------------|
| Valid | nan | 10 | 9.4 | 9.4 | 9.4 |
| | NEGATIVE | 32 | 30.2 | 30.2 | 39.6 |

| | | | | |
|----------|-----|-------|-------|-------|
| NEUTRAL | 26 | 24.5 | 24.5 | 64.2 |
| POSITIVE | 38 | 35.8 | 35.8 | 100.0 |
| Total | 106 | 100.0 | 100.0 | |

Report

Number of answers this code appears in

| Code Category | Mean | N | Std. Deviation |
|---------------|---------|----|----------------|
| NEGATIVE | 16.2500 | 32 | 20.11467 |
| NEUTRAL | 2.8462 | 26 | 2.54448 |
| POSITIVE | 16.7895 | 38 | 16.61184 |
| Total | 12.8333 | 96 | 16.56365 |

Number of answers this code appears in

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|-------|-----------|---------|---------------|--------------------|
| Valid | .00 | 4 | 3.8 | 4.2 | 4.2 |
| | 1.00 | 16 | 15.1 | 16.7 | 20.8 |
| | 2.00 | 10 | 9.4 | 10.4 | 31.3 |
| | 3.00 | 4 | 3.8 | 4.2 | 35.4 |
| | 4.00 | 8 | 7.5 | 8.3 | 43.8 |
| | 5.00 | 4 | 3.8 | 4.2 | 47.9 |
| | 6.00 | 6 | 5.7 | 6.3 | 54.2 |
| | 9.00 | 6 | 5.7 | 6.3 | 60.4 |
| | 10.00 | 4 | 3.8 | 4.2 | 64.6 |
| | 12.00 | 4 | 3.8 | 4.2 | 68.8 |
| | 13.00 | 4 | 3.8 | 4.2 | 72.9 |
| | 14.00 | 4 | 3.8 | 4.2 | 77.1 |
| | 17.00 | 2 | 1.9 | 2.1 | 79.2 |
| | 22.00 | 2 | 1.9 | 2.1 | 81.3 |

| | | | | | |
|---------|--------|-----|-------|-------|-------|
| | 25.00 | 2 | 1.9 | 2.1 | 83.3 |
| | 28.00 | 4 | 3.8 | 4.2 | 87.5 |
| | 36.00 | 2 | 1.9 | 2.1 | 89.6 |
| | 38.00 | 2 | 1.9 | 2.1 | 91.7 |
| | 52.00 | 4 | 3.8 | 4.2 | 95.8 |
| | 54.00 | 2 | 1.9 | 2.1 | 97.9 |
| | 71.00 | 2 | 1.9 | 2.1 | 100.0 |
| | Total | 96 | 90.6 | 100.0 | |
| Missing | System | 10 | 9.4 | | |
| Total | | 106 | 100.0 | | |

The following diagrams draw from the above tables for section E of the questionnaire.

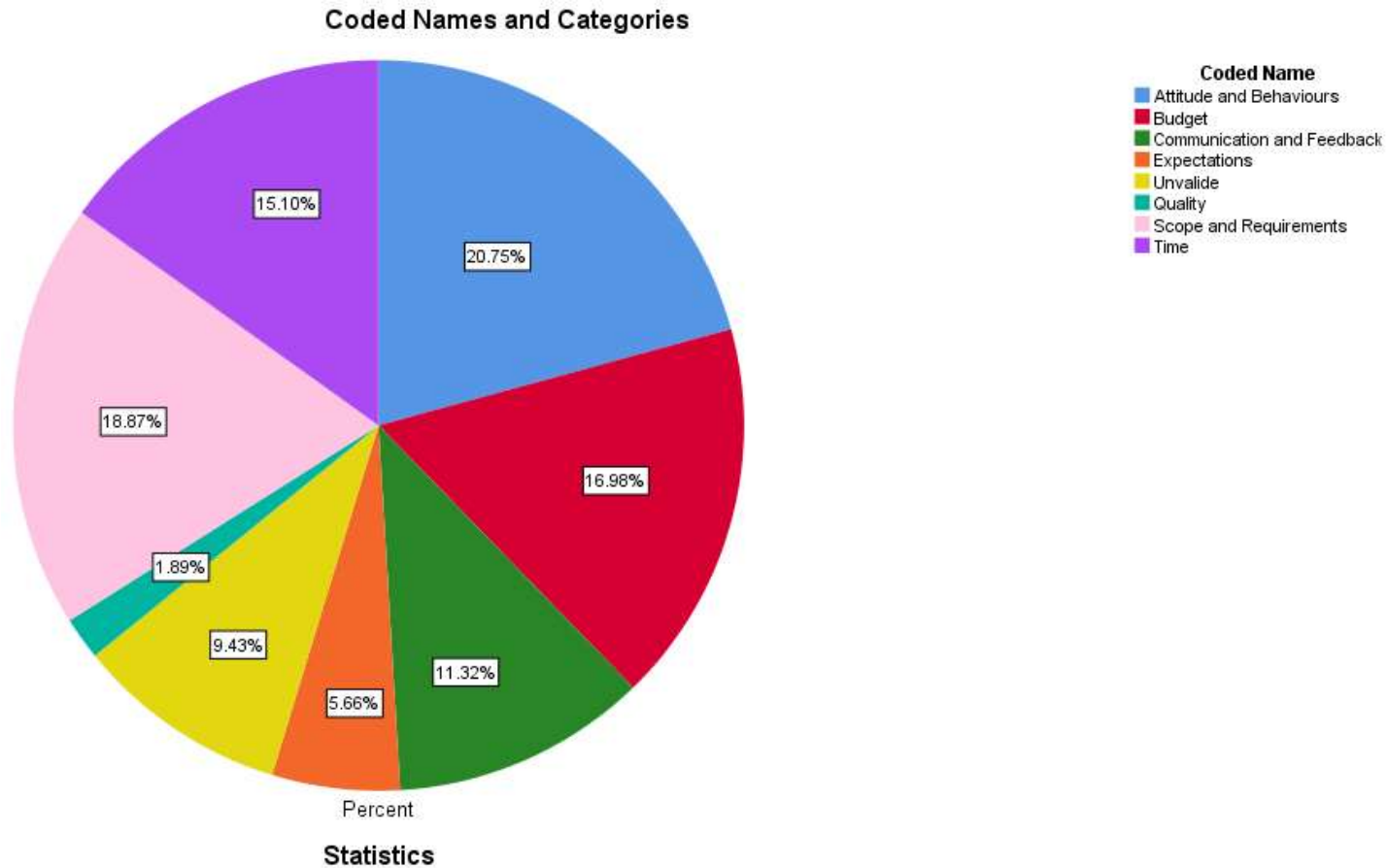


Figure 4.30: Coded names and Categories

The data collected for open-ended question responses were coded in terms of Attitudes and behaviours; Budget; Resources; Communication; Feedback; expectations; Quality; Scope and Requirements; Time. In total, 53 responses were recorded with 5 missing (9.4 %) or not well written, stopping the researcher from coding them. The percentages were as follow Attitude and behaviours 20.8%; Budget 17%; Communication and feedback 11.3%; expectations 5.7%; Quality 1.9%; Scope and requirements 18.9% and Time with 15.1%. Attitudes and behaviour category had the highest per cent follow by Scope and Requirements. Figure 4.30 revealing to us what client do or do not do which is having an impact on project success, an impact on team performance and an impact on project constraints. The impact can be positive or negative.

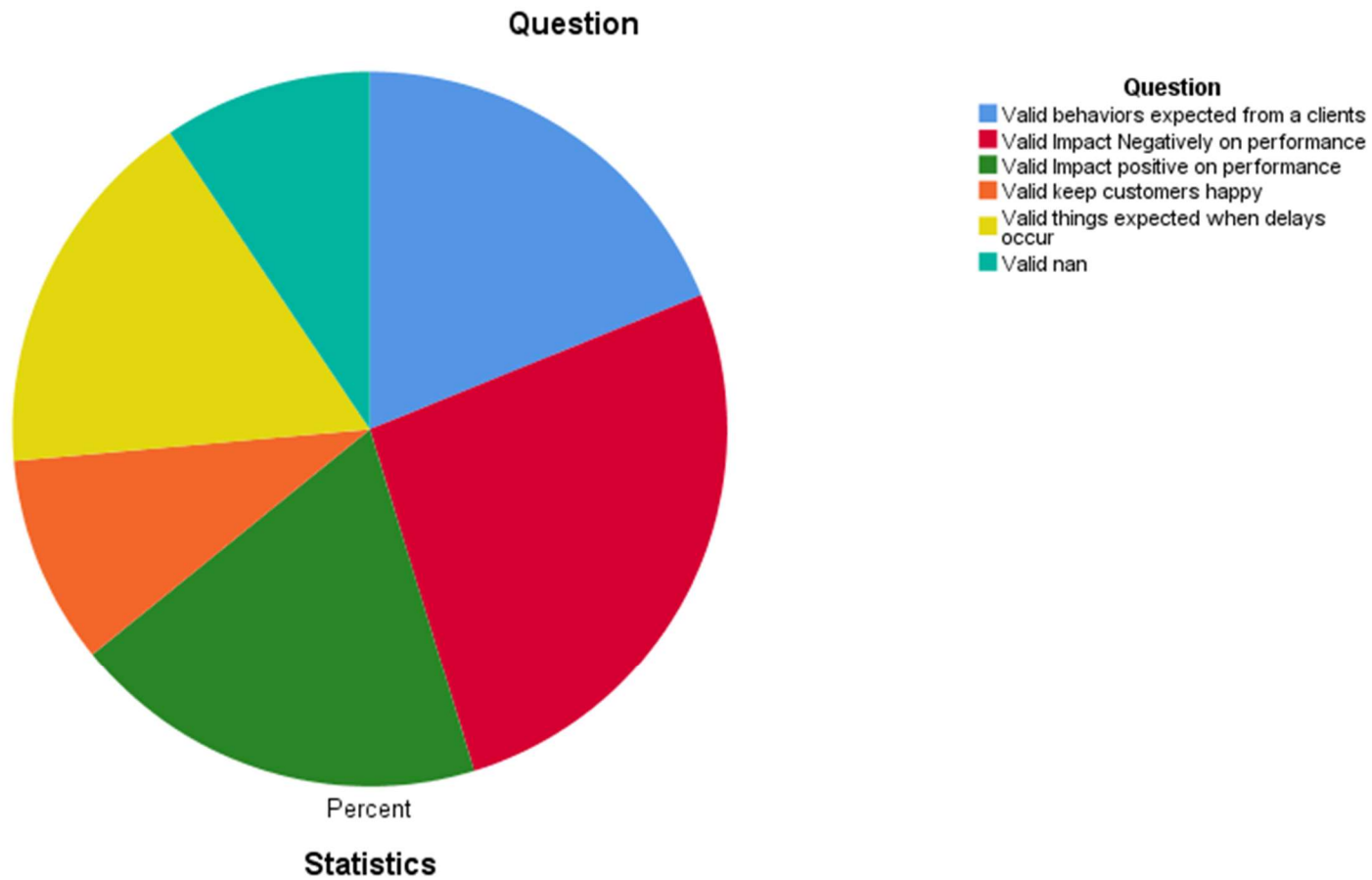


Figure 4.31: Open-end question results

Figure 4.31 represents the results obtained for each open-ended question. The researcher needed to determine what behaviours the team members expect from the clients before, during and after project; what is that client should and should not do according to the people working on the project. Secondly, it was asked to the team members to tell us what clients' behaviours from their experiences have a positive or negative impact on their work performance as well as the overall project progress. Keeping the customer happy is one of the primary responsibilities of the project team. The team must make sure clients receive expected outcomes requested therefore it was asked to the team to tell us what they must do to keep them happy as well as tell us what

they do not like to do. Finally, the last question was about attitudes, actions, or reactions when delays occur. All the answers were coded and grouped and combined with the interview question results.

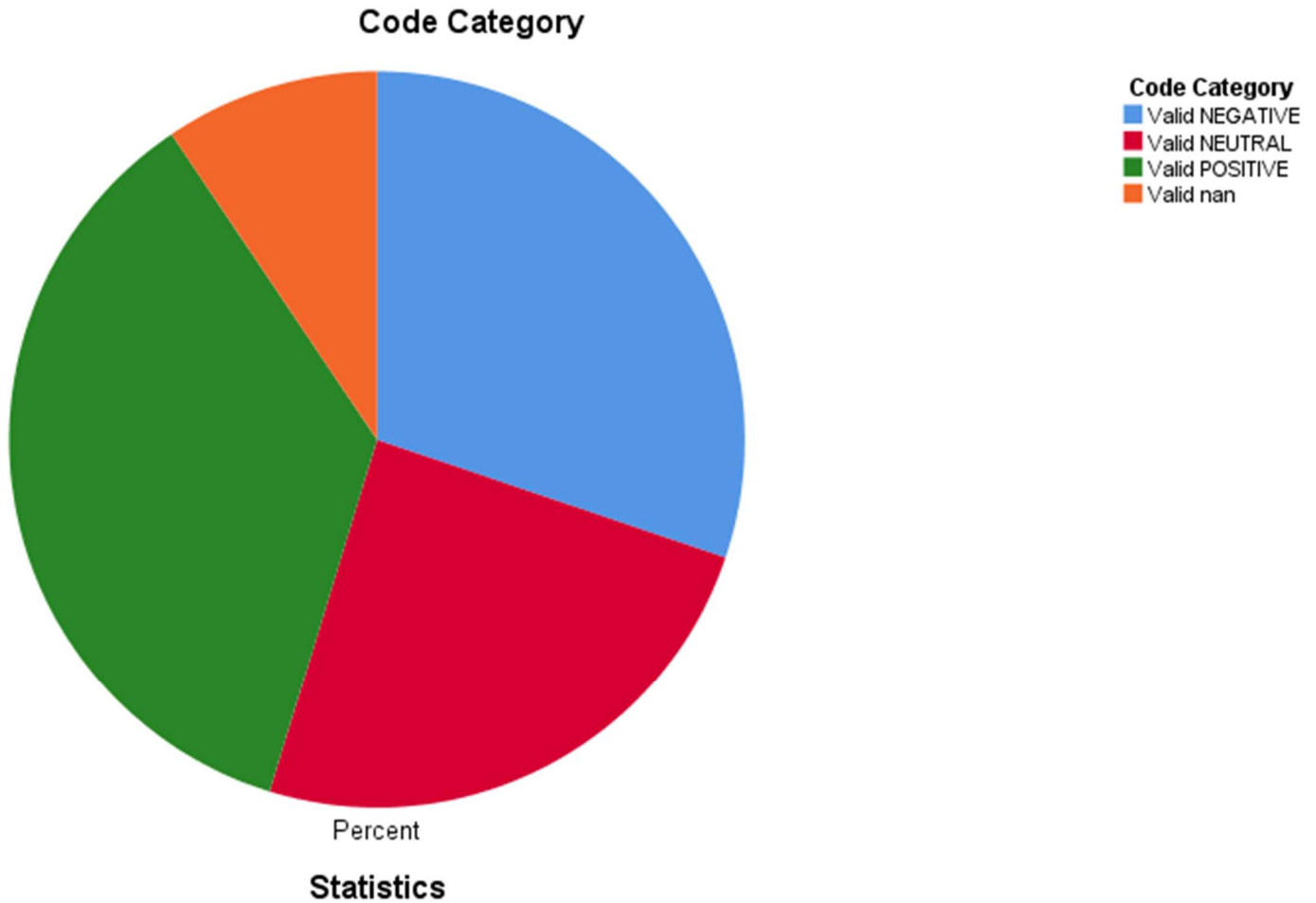


Figure 4.32: Open-ended questions categories

The results from figure 4.32 were grouped into three parts named “negative”, “positive” and “neutral”. Some answers were not ever making sense or out of context, therefore, grouped as invalid (nan). The purpose for grouping them in those categories (negative, positive, neutral) was to enable us to determine what does client do or do not have a positive effect or negative effect

on overall project process from the team point of view. Neutral were mostly those answers which do not tell us after reading them if it was a good thing or bad thing. The results were combined with interview questions responses and display in the summary of the results section.

The staff mentioned the following as an answer which can have a negative impact on the project's performance:

Table 4. 2: Summary of open-ended question responses

| Unknown requirements: | Inconsistency in requirement: | Unclear and unrealistic requirements: |
|--|---|--|
| <ul style="list-style-type: none"> • not sure what they want. • Ignorance about he/she want has a website or web application. • lake of confident of what they want. • Client not fully aware of what they want. • Lack of accurately defined requirements. | <ul style="list-style-type: none"> • when they are not consistent with what they want for their website. • additional requirements from clients. • Changing their mind on things. • Changing requirements middle of development. • scope creep. • no respect for the initiation/beginning outcomes agree on • update on project scope • Regular modification of the specifications • change of requirements all the time. • The client is changing requirements • Modification of the project's information needs during the development of the product. | <ul style="list-style-type: none"> • Unclear brief. • unrealistic expectations. • irrational expectations. • Client's non-accurate expectations. • vaguely defined requirements • Unclear definitions • Indecisiveness • Undecided clients |

Source: Data Extract from Responses Received

| Content issues | Communication | Flexibility |
|---|--|---|
| <ul style="list-style-type: none"> • no content. • Delay in providing content. • Delaying content files delivery. • time wasted waiting for content. • content delivery. • low-quality content or graphic design. • lack of content material. • lake of datum availability to pu.t inside the web site. | <ul style="list-style-type: none"> • lack of communication. • bad or lack of communication. • poor communication with clients. • rude/disrespectful flow of communication. • not enough communication. • lack of communication with the dev team. • miscommunication. • delayed communication. • language barrier. • delay in communication. | <ul style="list-style-type: none"> • not allowed modifications where required. • not willing to be flexible. • Not willing to go beyond their specifications. • Not open mind. |
| Feedback | Changes | Understanding |
| <ul style="list-style-type: none"> • The client does not reply to question which prevent the progress of the project. • Delay in feedback. • Client's availability for discussion during the development of the product. • the nonparticipation. • taking the time to give feedback to allow us to progress. • when they do not give us quick feedback after the website has been release. • Poor feedback of Clients. • Apply themselves only after the concept. • Clients not available for queries. • less feedback. | <ul style="list-style-type: none"> • Change of scope. • inconsistent changes. • Timeframe changes. • Budget changes. • Continuous changes. • change of framework. • scope screed from client. | <ul style="list-style-type: none"> • Lack of understanding regarding own requirements. • Lack of understanding. • not understanding the complexity of doing certain things and undervaluing the work done. • lack of understanding about the technology used by the web design team. • Limited Understanding. • Misunderstanding. • Lack of knowledge regarding the process. |

Source: Data Extract from Responses Received

In project management scope is the skeleton of the project; the scope is giving the web development team an idea of what the client is expecting at the end of the project as outcomes. The project plan derived from the scope or requirements criteria received by the client. Project requirements or scope is the first issue to have an impact when it comes to project performance. Based on staff responses, we find the three following as main requirements concerns: unknown requirements; inconsistency in requirements; unclear and unrealistic requirements.

Unknown requirements: the unknown also unidentified or mysterious should not be a characteristic when it comes to website project requirements. Some clients need a website for business purpose, but unfortunately, some of them do not know what type of website they want, do not know what they want as features, what they want to use it for which make it a bit difficult for the project team. It is the project web development team responsibility to produce a draft from the client's brief. However, if there is no proper or clear brief, it will make thing a bit complicated and delay the project initiation phase, which will delay all project. In fact, well clarify requirements of the project help the team to have an idea of what client desired; to design a proper plan a kind of road map before starting the project journey as it determines critical functionalities of the web development project.

Unknown may lead to time delays; it is also having an impact on the scope of work as the team cannot have a complete scope if they do not have an idea of what the client wants. For some web developer unknown help them to be more creative and give them the chance to show a client what they are capable of; they have the freedom to be open minded. Some developers prefer working with people who know exactly what they want; while, others use the fact that clients have a vague idea as an advantage and an opportunity to come up with innovative ideas. Consequently, the initiation phases will take more time if there are no bright ideas from the customer to start. When clients do not come with ideas in mind, everything must be done to ensure the team understand clearly and visualize what is needed. The project embryo takes form as the team meet with the client. If the client's needs are unclear at the beginning, the team will spend more time with the client to come up with the project concept. When beginning a project, uncertainty makes time, effort, and cost estimation a bit difficult as they depend on the clarity of what must be done.

On the other hand, if clients have their final look in mind and know exactly how they want the website to look like; clients tend to be less open to suggestions because they picture in their mind what they want. Some clients do not understand the technical skills; efforts and cost needed to achieve what they pictured. The web designers and developer must be able to explain to clients what can be achieved with the budget while considering the deadline for the final product to go live.

Inconsistency and changes in requirement: inconsistency is a synonym to unpredictability and instability. “Indecision” is the inability of the client to take final decisions about their website requirements. Indecisions delay project activities. It does not matter the type of industry people are working in; no one wants to work in an unstable or unpredictable environment. Inconsistency when it comes to project requirement refers to the fact that clients are not sure of what they want for the website; they want specific characteristics today, and in a week, they want something different. Web project requirements must not change regularly during the project, mostly during the implementation phase. Regular changes will result in modifications on the work already completed which will have an impact on the time (assigning more time to add or new features) and on the budget; depending on the new adjustments the cost can increase.

The scope helps the team to draft the project plan. The team use the project plan during the implementation phase. The implementation happens according to the plan; therefore, if the scope changes during the project implementation, the process will be unstable. When changes occur after some tasks are already complete, it means the team wasted time and money completing tasks in vain, which can also result in frustration from team members. Inconsistency leads to uncertainty; it is hard to determine the total cost and total duration of the project. It is vital from the beginning to have an idea of project duration, project requirements; to know what resources and skills are needed to complete the project. Inconsistency refers to the inability of the client to decide with confidence what they want; they are not sure, which is stopping them from taking the final decision about what they want for their website. If clients change their requirements at the beginning of the project is better than to change at a later stage. It is easy to make changes during the initiation and planning phases as adjustment can be made at no cost depending on the type of website. Issues happen when changes occur at a later stage of the project like execution and

closure phases when people already spent time, effort and money working on the project. Small changes can be made at no cost and almost no effort, but some change may require extra time than the original one; additionally, changes may lead to extra cost beyond the agreed budget. In terms of quality, usually, changes are made to improve the quality of the website.

Unclear and unrealistic requirements: “A lack of clarity could put the brakes on any journey to success.” says Maraboli (2009). Clarity is needed from the beginning of the project to ensure success. Some information should be clear from the beginning such as the type of website, the end-users, the date it must be live, the number of content pages, the amount client is willing to spend, the type of design. Some questions should be asked, such as, is the project a web application where the different features and use are not thoroughly thought out? Alternatively, is it a large project where the final deliverables are not decided yet?

Clarity from clients about what they want and expect from is an essential aspect in a web development project; if client's requirements are precise, it should help the team to provide a consistent final product which will meet client's needs. However, if clients are unable to clarify what they want from the beginning, it should affect the flow of the project process. Uncertainty may confuse the mind of the project team; the team may be unsure about what needs to be done. When objectives, features, milestones, and website criteria are unclear, there is no checkpoint or proper time frame; a project cannot be successful under those conditions.

The Cambridge Dictionary defines unrealistic as follow: “having a wrong idea of what is likely to happen or of what you can do; not based on facts” (Dictionary, 2018). Unrealistic requirements were mentioned as one of the issues leading to project failures. An unrealistic person is someone who does not accept the truth regarding a situation, especially concerning the challenges involved to accomplish what he or she wants. Sometimes clients ask web developers to deliver unrealistic outcomes. Coding a website required knowledge and skill to produce an excellent website. The coding process must be done with care to avoid mistake and coding errors. Developers program the computer how to react to specific inputs. Coding is a language system that only a computer system can understand; It is used to write software and develop websites.

Communication, Understanding and Feedback:

A common saying states that “communication is the key in any relationship”; it does not matter if it is in a social environment or working environment, communication plays an essential role in the course of the project life cycle. One of the ten project management knowledge areas is project communication management. The purpose is to provide critical links between people, ideas, and information that are essential for project success. It focuses on the procedures required to ensure timely and appropriate generation, collection, dissemination, storage, and ultimate disposition of project information. Based on the responses, communication plays its part in the overall project process; excellent communication leads to less mistake and fewer miscommunication issues.

Understanding derives from good communication; if the communication is correctly done, there is more chance to have a better understanding between team members as well as between clients and team. However, a poor communication might lead to misunderstanding. According to staff responses, lack of communication, poor communication, the disrespectful flow of communication, delay in communication, not enough communication are the main issues affecting the way things are done during a web development project.

If communication is not done often or meetings often delay, client and team cannot agree on project milestones. Decisions are not taken, and many assumptions might arise, which eventually lead the team toward failure to deliver client vision.

Responses reveal that lack of communication between the project team and the client can cause project delays. The client needs to tell developers and designers what he/she wants to allow them to understand the project scope. The team determines the scope of work based on client needs; therefore, the needs must be adequately communicated and understood. Additionally, communication can also refer to the rapidity of feedback from clients. For some projects the response time between the client and the team must be quicker to allow the team to fix issues, help the client as quickly as possible to avoid any delays; in this case, the client must make him/herself available.

Feedback from clients based on responses seems to play a role in the project progress as feedback allow the team to have an idea of what the client thinks about work already completed and help them to determine if they are on the right path based on client expectations requirements. Early and quick feedback is helpful; it allows the team to fix any issues arise by clients as soon as possible to avoid delays; it also stops them from spending time, money and effort completing unnecessary tasks. Feedback allows them to focus on what the client wants; to be able to give them the desired output. Issues come when there is no proper feedback on work completed or when there is a delay from the client to give feedback delaying the progress of the overall project.

Content Issues:

According to Techopedia, when it comes to website design, the textual, aural, or visual content published on a website represent the “Web content”. It is any creative element such as audio, images, video files, applications, text, archived e-mail messages, data, e-services, and so on. According to the definition above, the quality of content plays an essential role in the final website look. Therefore, the team must make sure they get good quality content for the website.

In some cases, clients themselves provide contents, and in other cases, a marketing team will be working on making the contents for the website. The first issue in terms of content is when content from the client are not good quality (unclear pictures, for example), it will affect the final look making the website looks unprofessional. Depending on the client budget, it might be not enough to afford to spend money on quality content, mostly small businesses, or start-ups. The second issue recorded was the fact that clients were sending content late delaying the project from starting; contents are needed to start designing the website. If clients do not send content on time, they are slowing down the progress of the project.

For a successful website, it is crucial to create engaging content and to organize it into various categories for easy navigation. The key behind traffic generation to websites is "web content". Additionally, it is crucial to optimize the web content for search engines so that it responds to the keywords used for searching (Techopedia.com, 2018).

Flexibility:

Flexibility happens to be a good thing in web project design as it is giving the project team the possibility to give client options; can allow them to deviate from the original plan with no fear. In this case, the client is usually open-minded and give the team the responsibility to impress them. Therefore, the project team have that sense of freedom while working.

The downside of flexibility is that the team might not prioritize a client website. Flexibility concerning the due date may cause delays if the team tend to neglect or postpone tasks. The team could find themselves relaxing because of too much flexibility; they do not have pressure from clients. Pressure from clients pushes the team to work as fast as possible.

4.2.6. Interviews

The interviews responses were grouped in two big categories named: behaviours and expectations; then categorized in terms of constraints: Cost, Scope, Time and Quality. The purpose was to determine which behaviour from clients impact the named constraint above; as well as what clients' expectations have an impact on constraints named. In the table below, we categorized the interview responses collected; and grouped them in terms of similarities to allow the researcher to summarise them adequately:

Table 4. 3: Some of the interview questions responses

| | | |
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| Behaviours | Scope | <ul style="list-style-type: none"> • Clients who give proper and quick feedback help us to reproduce what they requested while those who do not give proper guidance about what they want are stopping us from giving what they want. • Clients inconsistency affects the scope of the work as it not fixe and change over and over. When clients do not know with precision what they want or not sure of what type of features are needed for their website it confuses the team there the scope seems to have no boundaries or no reference points. If the scope is not consistent, it is difficult for the team to determine how long the project will be (time) as well as much it will be (cost). • A client who knows what he or she wants makes it easier for the team to estimate time and cost as well as quality requirements. • Scope change happened, and it is reasonable; the issue comes when the client changes the original project idea entirely into something different after the team already spent time working on the project. • Some clients do not react well to change. For example, the designer explains to a client that changes cannot be implemented for various reasons. The client does not accept and ask the designer to make it happens. • A well-detailed scope from the client has always been the ideal one. It helps the service provider to allocate the required resources accurately. The detailed scope will help the team to estimate cost and time required. • It is a bad experience when the scope changes from the initial one. The team can easily get demotivated and annoyed by the thought of returning to the same site and perform a work which was not expected to get done in the first place. • Clients change the scope and lead to scope creep, which will then subsequently negatively impact the time and cost. • Clients who are understanding and trust the team to do their work are usually open-minded. They let the team works and wait for the first draft before making comments. • We always assess the client's needs before we assign a team to work on their web project; to make sure that the agreed scope satisfies their needs. • At times we get a client who might understand the web development system. They might feel that because they have the knowledge, they know everything. These kinds of clients usually insist on getting what they ask without taking into consideration suggestions. • Clients who trust in designer ability and experience make it easy for us. We do not have to play around with the scope as the initial assessment indicates which features, they need. |
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| | Time | <ul style="list-style-type: none"> • Late feedback from client delay the project and sometimes oblige us to extend or to postpone the project completion date as previously agreed at the beginning of the project. The quicker we can feedback, the better as it helps us to move forward to the next stage of the project. Delay on feedback stops us from moving to the next step as client agreement can be required to allow us to move to the next level. • It happened that client conduct or attitude toward team members can make things happen faster because we do not want to deal with them anymore; we are making sure their job website is complete faster. Depending on one team member to another, lousy conduct can lead to demotivation. It can slow down everything because team members are avoiding working with such clients. • "We cannot start designing a website without contents". It is essential for the design process. Clients have the responsibility to provide all the necessary content to allow the team to start working on their website. The more time they are taking to do it, the more it will take to start working on the project even though they already paid us to do the job. • "Clients who are cooperative allow me to stay within stipulated due date. Difficult clients could lead to extra time; if we have to allocate more time on a project, it will increase the original budget." |
| | Cost | <ul style="list-style-type: none"> • After drafting the website, the team give clients a time frame to evaluate the website. Clients then can give their feedback to allow the team to adjust or changes. The quicker the feedback, the better; some changes may require additional cost but also require additional time allocation. When it comes to outsourcing labour in web development, some developer charge hourly. For this type of agreement, the more time they are working on a specific project, the more money they are requesting because they do not have a fixed salary. • Good reputation when it comes to business is crucial. Good reputation might not cost a lot of money, but a bad one will cost a lot. Therefore, it is essential to ensure clients satisfaction because a happy client could be the door to get more clients. The way we treat clients, no matter how hard they are will affect our reputation. An unsatisfied client will not advise some else to work with based on his/her experience, which means companies may lose potential future clients every time a current client is not happy. • Once a project has been costed, it becomes imperative that the client cooperates with the team performing the work to deliver the website. Otherwise, the time frame will be extended, and more labour hours spent on website design, resulting in the company losing more cost, which was not considered during the initial project costing. A lousy client behaviour can also lead to technician deciding to do a quick job just so that they can leave the site asap, which will also result in call-backs due to shoddy work done. • I do not generally deal with cost as I am not a project manager. However, I can safely assume that there is some correlation here in terms of negative client conduct affect time and scope, which will lead to a negative impact on the cost. For positive client conduct; there is more chance that one will stick to the original costs agreed, upon in the event of a positive client conduct as clients generally tend to be understanding, have some knowledge of the technical work and trusts the professional to do the work which leads to positive effects on the time and scope of the work. • For clients that we charge at an hourly rate, bad behaviour on their part usually results in them needing more time; hence, it results in a higher cost for the client. |

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| | Quality | <ul style="list-style-type: none"> • It is the client responsibility to provide good quality content (logo, pictures, information). Sometimes content received are not good enough and do not appears nicely on the final website leading to a client complain. Bad quality content will affect the overall website design. • Clients behaviours is not a determining factor in the quality of the work I deliver. It usually affects the mood but not the quality of work. • Quick reaction or feedback about the project help the team to improve or adapt their work based on client feedback. Certain aspects of quality as measured according to the client point of view; therefore, they guide the team into what is "quality". • The manner the client conduct him/herself play a role in the overall project environment leading to team motivation or demotivation while working on a specific web project. Some client's rudeness does not give team members the motivation to work or to be in contact with such person as they are creating a bad working environment when they are around which may affect the quality of the work produced such as creativity. A rude client customer can stop team members to be sincere or stop them from giving suggestions as the team member want to get rid of them. Usually, the right attitude encourages certain people to work that extra mile to please a client who treats them with respect. • A good conducive response from a client can easily result in a smooth and successful project. It can also result in encouraging the team to work on the client project and build a strong working relationship. • Once a project has been costed, it becomes imperative that the client cooperates with the team performing the work. Good cooperation, as well as excellent communication skills, reduce misunderstanding between the client and the project team, which usually lead to less conflict during the project. Clear instructions from the client reduce the chance of designing a website that the client does not require; it reduces mistakes and ensure the client satisfaction of the final product. • When we work with clients who have a bit of knowledge of website design, they can make our work difficult. They act like they know everything stopping the team from using all their knowledge. They are limiting our creativity and make us feel like we do not have total freedom. • Working with people who have little or no knowledge is working with some developers it allows them to fully express their creativity and apply their knowledge and expertise into that specific project. It helps when clients let the team works and come back with a website proposal before giving their feedback. • "Client behaviour is not a determining factor in the quality of the work I deliver. A direct correlation is found in the relationship with the client, where negative client behaviour can negatively affect the relationship with the client and the same is true for positive client behaviour affecting the relationship with the client in a positive way. In our experience, we have always delivered the best quality work I can, regardless of the client behaviour. Client behaviour, therefore, does not affect the quality of our workwork." |
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| Expectations | Scope | <ul style="list-style-type: none"> • Additional requests from the client will change the original scope. If a client's specifications change during the project, the scope of the project change. The early changes occur, the easy it is to add change, the better it is as change might occur before the team start spending time, effort and money for the project. • It becomes cumbersome when the client's expectation changes. It makes the team feel unappreciated and unwelcomed by the client. Then it becomes the case whereby we want to get the job done and go. • In our field of work, the client expectations will help us determine the amount of work or tasks required to complete the job. The number of pages they needed will increase the scope (for example, someone wants ten pages while someone wants five pages; the price will not be the same). • A website with no individual product listing and no online shopping features reduces the amount of work and time required for programming. An online shopping site requires more time to design and more features, which may lead to additional cost. The type of website will tell us the scope of work, the duration, the cost needed to deliver it. The quality will also be determined by the type of website but also by the purpose of the website. Additionally, the budget also determines the quality of the website as some website application cost more to implement. • Some company ask for extra services beside designing the website, which increases the scope of the project, such as Registration of a domain name or Hosting. • Some clients come with specific needs, and in such cases, we usually tailor the scope so that we can address their specific needs. We usually spend extra time tailoring the scope, but it eventually needs less time delivering. |
| | Time | <ul style="list-style-type: none"> • Extra requirement usually leads to extra time from the initially agreed duration; on the contrary, it is unusual to get a situation where clients reduce the number of features and project duration is reduced as well. • The client's additional requirements often lead to more time to be spent on website design/development. Nevertheless, this time was supposed to be spent on another job or project. It then results in a stretched working hour and sometimes forcing developers having to work overtime. • The work done can get easily affected by the client's conduct in various ways. Let us say a website must be designed, and clients do not grant access to the developers in order to get the necessary content. Consequently, developers must postpone the due date because the work could not be complete without the content. The delay from the client will cause a time delay for all project. • Clients who are understanding, know the technical work required and trust the professionals to do their work has a positive effect on the time taken to do the work • It has been our experience that clients exhibiting negative behaviour will negatively impact the time taken to do the work, this is more a case of more disruption and miscommunication being leading to a negative effect on the time. • Some clients have unrealistic expectations, but when push comes to shove, and they realize that they had set unattainable timelines for themselves they backtrack, it wastes more time which costs them more money. Time and cost are correlated; more time means a higher cost. |

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| | Cost | <ul style="list-style-type: none"> • Over 85% of the time, clients do not realize that additional features required extra time to be spent on their website design which implies additional costs. They are quite often unwilling to pay for this extra cost, leading to a situation whereby the actual work on the project is standing still just because of their reluctance. • Once a website project has been costed, it becomes crucial that the client cooperates with the team for them to deliver it on time. The time frame can be shortened, and fewer hours spent on different project' phases if clients do not add extra item in the scope because an additional request can lead to the extra time needed which may lead to an increase from the original budget. • "There is more of a direct correlation when it comes to client expectations and time. Clients with reasonable expectations again allow for more accurate estimates in the time provided to do the work. Those clients who are understanding and trusts the professional could generally lead to adhering of the time frames and does not affect the time. The opposite is true for clients with unreasonable expectations. They do not accept that some changes may not be feasible within the time frame. We have often found in the case where the client either does not know the business requirements and has little to no knowledge of the technical know-how required to implement something but still feels the need to direct us on how to do our job." • The cost of the website is determined by the type of website the client wants us to design. The more features he/she needs will increase the price while less feature might cost less depending on the type of design required. The quicker he/she want it to be live may lead to extra cost. • Some clients will ask us to design a website. However, as a company, we do not have the resources required to make it happen; therefore, we must outsource labour for extra skills costing us more depending on the rate per hour from the developer or designer. • Higher expectations and cost are correlated, the higher the expectations, the more costly it becomes for the client. Some websites need more resources, more people to work for that specific project which will cost more as some outsource charge their rate per hour. |
| | Quality | <ul style="list-style-type: none"> • Most of the clients want to have a good quality website, but sometimes what they have in mind is ever not feasible or may ask more time and resources to make it possible. Some clients expect us to do some tasks of programming more quickly while it is technically impossible. • If a client wants a good quality website, they need to provide us with the necessary content, the details information to help us to give them exactly what they want. A client may expect us to do a job within one week, for example, while the required standard time to do this job is two weeks to be able to give them what they ask. • When a client expects us to design a website which is similar to a previous website we did, that client may expect us to deliver their website quicker based on our past projects. They expect great design and good quality from the first draft with no mistake because we did a similar project before. • Usually, the higher the expectation from clients, the better the quality they get. Although they get high quality, it also comes at a higher cost. |

Legend: Behaviours responses
 Expectations responses

4.3. Discussion of Findings

The research results are based on the project team members point of view and responses. The purpose of the research was to determine the impact that client behaviours and expectations have on project constraints such as time, cost, scope, and quality. Client refers to the person who asked for a website to be designed; the project team is working to satisfy his/her needs and expectations. Clients here should not be confused with end-user as certain people asked the website to be designed for their audience depending on the type of industry; they are operating.

Research objectives were as follow:

1. To investigate and understand how the client's expectations and behaviours affect project constraints in the web development industry.
2. To explore and understand the influence that clients' expectations and behaviours have on the management, the progress, and the success of web development projects.

Research main question was: Are project constraints and project progress influenced by clients' expectations and behaviours in the management of web development projects?

Research sub-questions were:

1. What are the effects of clients' expectations on web development project schedule, budget, scope, and quality?
2. How does the way clients act or conduct themselves during the project affect project constraints?
3. What influence do clients' behaviours and expectations have on the progress, completion, and success of web development projects?

4.3.1. Clients' Expectations and Project constraints

The client comes to the team with certain expectations; things he/she is expecting to get at the end when the website is completed. Expectations are what they hope to receive as outcomes.

Results show that clients have different expectations, such as pricing or features, which makes the work for the team ever easier or harder. Expectations vary from one website to another as clients use them for different purposes in a diverse type of industry. According to the team, if what clients want is something the team is familiarized with or similar to something they did in the past, it is easy for them to design the website quickly than if it is a totally different website with different characteristic and functionalities.

The amount of work can be less or more depending on the website features and functionalities. The more tasks need to do on a website, the more time it takes to complete and the fewer tasks, the quicker it can be completed. For example, a website with two webpages takes less time to develop than a website with six pages. Likewise, an e-commerce website takes more time to develop because each product must be coded to make sure the right click leads the client to the right product. A blog or a portfolio website needs less coding than an e-commerce one. In that sense, less coding may mean less time to develop.

Two factors are affecting the budget: the amount of time it takes to work on the website and the type of functionalities needed. The longer it takes to develop a website, the more money is spent on labour and resources mostly if they are outsourcing. The type of website (magazine website, online clothing shop, library site) determines the cost of the project as well. Different websites are used for different functions; the cost depends on those function as well.

Expectations are what clients want as a website; it is what specifications they need on their website; it is also about what kind of experience they want to give to their users while browsing on their site. The project scope should clearly state the clients' expectations. If expectations are clear, the deliverables of the project are evident in the scope. The scope of work allows the team to determine how much money is needed to deliver the website; to determine how long it takes to complete it; and finally, to determine the level of quality is required. Clients' expectations well the team to determine the scope of work. Therefore, if clients' expectations change, the project scope change as well. Too much scope creep results in lots of unnecessary work. Unnecessary work is time wasted; resources and money wasted.

Clients want excellent quality websites and expect the team to do what it takes to make it happen. In terms of quality, clients want different features for their websites. A good quality website depends on the website functions, on the budget available and the time needed to deliver the expected website. Clients determine quality standards for their website; they are telling the team what they need, and the team have the responsibility to develop the website they want. The issue comes when clients want a quality website but do not have enough money to allow the team to give them a quality website.

4.3.2. Clients' Behaviours and Project constraints

There are several examples of how a client's actions, reactions and attitudes may affect the duration of the project and its completion time. Every client is different, which make each project different. Clients behaviours play a role in the overall project schedule. According to the project team, the project can be completed faster or not depending on the client's actions, reactions, and attitudes. For example, some clients give feedback to the team quicker, which can allow them to adjust or fix features on their website. On another hand, those clients who take time to give feedback are stopping the team from moving forward. Another example of how clients' behaviours can affect time is the following: Some clients are always available for unplan meeting and those who are not. Their availability could also affect project progress. In fact, at each stage of the project life cycle, clients need to accept the current completed task before the team can move to the next step.

Additionally, some clients put pressure on the team, pushing them to work as fast as possible on their website. Rude clients tend ever to discourage the team from working on their project leading to some delays, or they can push the team to work faster to avoid having to deal with them anymore. A flexible client, a client who gives a completion time with an open bracket for completion time, allow the team to finish the website after the original date if possible.

The data analysis results showed that clients' behaviours do not influence budget constraints. Clients determine the project budget, or they are agreeing with the one giving by the team after the project plan is complete. Some clients are strict with their original budget and are not open for

any changes, mostly changes which increase the budget. If clients are flexible in terms of money, they allow the team to spend more money if necessary.

Quality criteria are made based on clients' needs and also based on standards made for website characteristics. Clients behaviours rarely affect the quality of the final website. Clients' behaviours can cause scope screeep, delays and budget increases. Additional when it comes to quality constraints, it may happen that the money client is willing to spend does not allow the team to produce and deliver the website clients want. Beside the budget, the timeframe given to complete the work can also stop the team to deliver a quality website if it is shorter than the average time necessary to do what is expected.

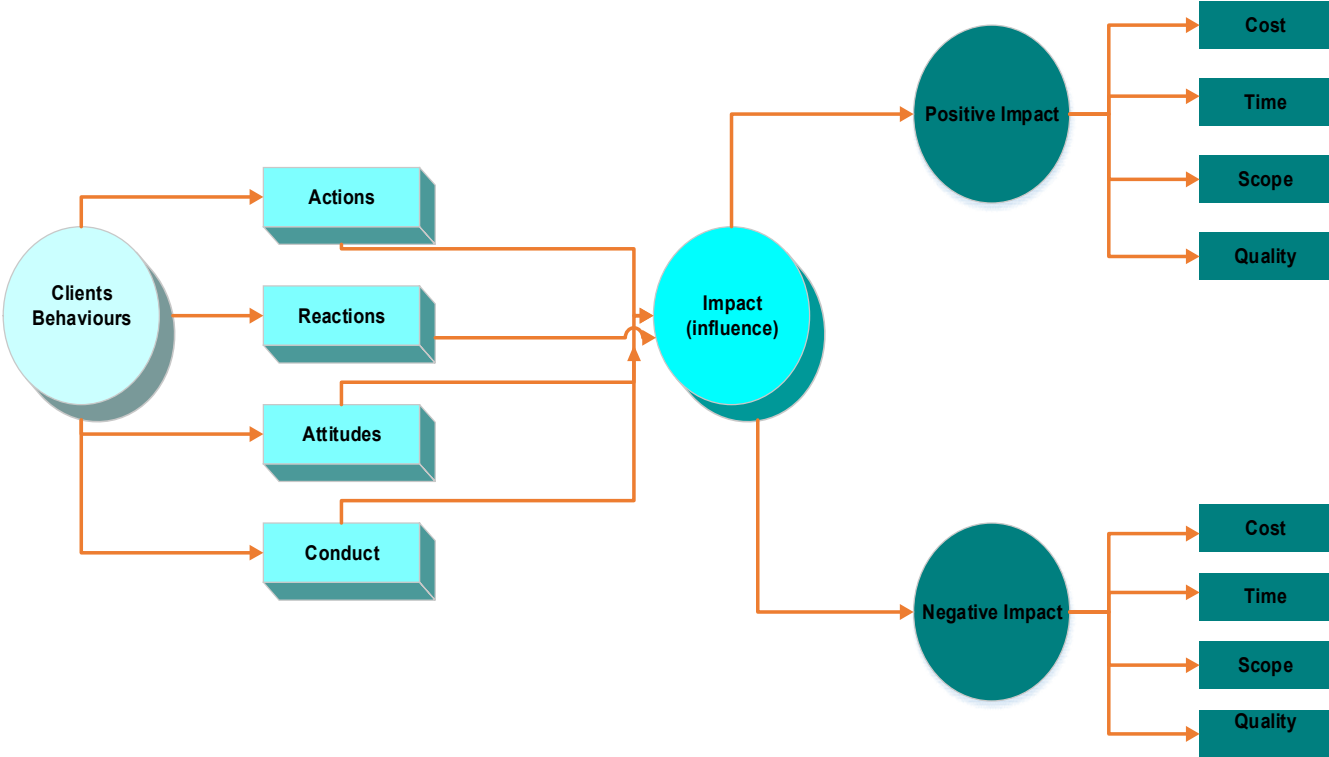


Figure 4.33: Client's behaviours impact on project constraints

Figure 4.33 shows us that clients have various behaviours which influence the constraints of the project ever positively or negatively. According to developers, a client with excellent communication skills will make their work more manageable than a client who does not. Some of them mention the fact that some clients are open-minded and open to suggestions will give them the freedom to give them suggestions and to express their imagination. Under communication, for example, “quick feedback” from client lead to time-saving as the quicker they come back with suggestions after the first draft was made, the quicker the team can work on that suggestion. Rudeness from clients was found to impact on the way people work on some project negatively. Rude clients usually do not motivate team member to do extra work to please them; most of the time, they want to get rid of them and move on to the next project as quick as possible.

Client inconsistency and unclearness about what they want was also a common issue leading to delays in the work and stopping the team from designing a proper budget and stopping them from setting a project calendar with milestones and deadlines. It was also found that the way clients act, react, behave, or conduct themselves during the project affect project constraints such as scope, budget and time in several ways. In terms of actions, some clients are open to suggestions which give developers and designer flexibility to add or remove tasks from the scope allowing the team to give their point of views and ideas without hesitations. Clients may be stubborn and are not ready to adjust anything from their initial idea no matter what therefore the team as to make sure they find a solution that ensures clients' satisfaction. Some clients do not respond (feedbacks) to the team queries (questions) quickly leading to delays because clients' approval is required before moving to the next step in some instances.

Additionally, indecisiveness and unclarity from client affect scope and time. The inability to decide quickly from clients stop the team from coming up with a final draft, and if there is no agreed draft the scope of work cannot be determined as well as the cost and time to complete the project. Rudeness and lack politeness are the kinds of attitude which can affect the quality of the overall project as does not give motivation to the team to work hard and to put more input on a project. In terms of communication, rude clients are creating an uncomfortable work atmosphere and frustrating employees working on their project. It also happens that clients do not understand the value of time and react wrongly when a developer tells them that they have other staff to prioritize

before their work as they want the team to be always available for them as long as they are paying. As we see from the team feedbacks, polite clients have to motivate them to do more and encourage excellent communication.

4.3.3. Clients' Expectations, Clients' Behaviours, Project Progress and Success.

Clients' behaviours can affect the project progress. For example, a designer will be happy to work with clients who are around from the beginning to the end. While another designer will prefer to work on his own and meet the client to discuss changes at a later stage, they need to work alone before allowing clients to give feedback. Some developers prefer having clients in their back during all project process to facilitate their work and progress. However, there are developer how prefer to work on their own with no interruption from client until they deliver the first draft.

During the project, there is an assessment which must take place called Project progress. Project progress contains details like resources used; problems encountered; goals and sub-goals accomplished; the project completion date; is the project on time and within budget. In fact, in project management progress reporting is a crucial document. It is the project manager role to issues on regular reports about progress against budget, schedule, and scope (Project Smart, 2019). Project success is defined by the level of efficiency the project achieved the project's goals; is about how effectively the project objectives are reached using available resources. Therefore, there is a strong relationship between progress and success; progress is the way things happen which will ensure the success of a project. Good progress guarantee success. Project constraints help us to determine if a project is successful or not; they help us to check the progress of the project. Consequently, the impact of clients' behaviour and clients' expectations on project constraints will influence the project progress and success.

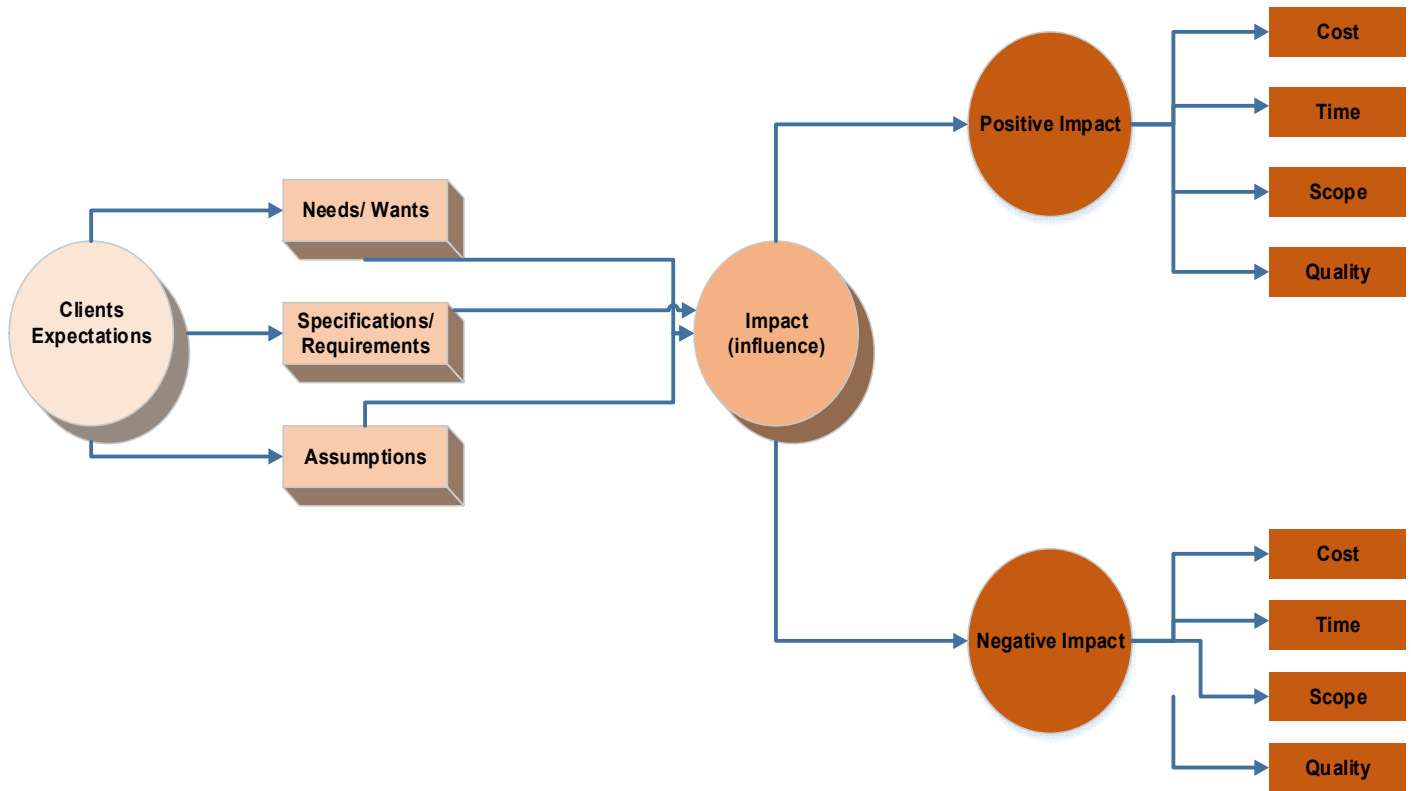


Figure 4.34: Client's expectations impact on project constraints

In the above figure 4.34, it shows that clients' expectations influence project constraints (cost, time, scope, and quality) positively or negatively. Each client comes with his/her idea of what will work as a website for their business; this idea creates expectations known as specifications for a specific website. Clients expectations help to determine the duration of the project as they reveal the specifications and features of the website. For example, some clients need basics website, which generally cost less and requires less time to be completed with basics or standards website features. However, the team encounter clients who want complicated websites which ask more effort, more time, and more resources to be completed.

Clients lead the way as the project belongs to them; they come with requirements as it is the project team to make sure they deliver them respecting the agreed time and agreed budget. After

investigation, it was found that expectations and behaviours both have a positive and negative effect on schedule, budget, and scope. In terms of quality, constraint expectations affect quality, but behaviours of the client do not affect the quality of the final website. Additionally, the completion of the project and its progress can be influenced by the client's expectations and by their behaviours as well.

Expectations from client determine how long the scope will be and the amount of work; based on client needs the team will determine the scope of the project (features, software, pages, images, style formatting, layout, design, contents). The client expectations tell the team what type of website is needed allowing them to design the project plan. Project plan answers questions: what, who, why and when about the project. The longer the scope the more time it will take to complete the website, which can also lead to more cost. Client expectations affect constraints positively or negatively depending on the type of website needed as well as the way team member work or perceived things:

- Client's expectations increase or decrease the amount of work (scope)
- Client's expectations determine how much money must be spent (budget) the more skills and software needed to complete the website the costlier it will be.
- Complicated website required more time and more money than an easy and straightforward (in terms of requirements, skills, features) one.
- In terms of quality, clients want better quality website (Relevance and context, Content length, Grammar and spelling, Readability, Formatting, Images and video, Expertise, Social media shares) sometimes quality features require more money which affects the budget.

4.4. Conclusion

In this chapter, we presented the data collected; we discuss them and interpret them in order to find answers to our research questions. Data were collected from different web designers and developer around Cape Town; some of them work alone while others work as a team in specific companies. The questionnaires and interviews questions results were presented and discussed in this Chapter.

The development of the website project can be done faster or slower, depending on clients' expectations and behaviours. A web project can be considerate a success of failure for different reasons; some of them could be clients' expectations or behaviours during the project lifecycle. In some cases, clients' behaviours work for the good and success of the project while in other cases, clients' behaviours may contribute to the failure of the project. In some cases, clients' expectations can lead to success mostly if what is required was done in past project as past projects experience help the team to do things better. However, when clients' expectations are unknown, unclear, or unrealistic, the project progress and success is affected.

CHAPTER 5: SUMMARY, RECOMMENDATIONS AND CONCLUSION

5.1. Introduction

The previous chapter was about analysing, discussing, and interpreting the research findings. The primary goal of this investigation was to determine the impact of clients' expectations and behaviours on project constraints, project progress and project success in the development of web design and web development project.

In this chapter, we are giving a summary of our data analysis and making conclusions based on our findings. After the summary we will give recommendations. Finally, we will have our conclusion.

5.2. Summary of Findings

The results from questionnaires, interview question and discussion reveal that the way clients behave or act impact (negatively and positively) on the way web development projects are executed and on overall project success. In this research, client behaviours referred to clients' actions, reactions, attitudes and conduct during the project life cycle. Clients' behaviours affect progress and success of the project in a positive as well as negative way depending on the type of website, the type of client and the project team point of view. Clients' expectations, on the other hand, referred to client's needs, wants, requirements, specifications, and assumptions which usually listed at the beginning of the project but also happened to be clarified as the project moves forward in some instances. It was also found that client's expectations influence the scope, the cost, the duration, and the quality of the final website project.

Figure 4.33 and Figure 4.34 above, were designed to illustrate the research study focus area. Both figures show a roadmap of the influence of expectations and behaviours on project constraints. In summarize we can say that there are positive and negative effects based on different research participants responses. It was essential to find out what type of behaviours and

the type of expectations influence constraints before looking at the actual impact on cost, time, scope, and quality. For example, which clients' actions or reactions have a positive impact on the cost of the project; the purpose here was to find out what clients do or do not do according to the project team which has a positive or negative influence on the project duration, cost, scope and quality. Additionally, we can see from the results, the relationship between the clients' behaviours, clients' expectations, and project success as well as project progress.

There are actions, reactions, attitudes done by clients which influence the scope, time, budget, and quality of the project, therefore, influencing project progress and success. The impact can be positive or negative. In term of time, some client can motivate the team to work faster on their project when they give them their space to design and work with no distractions. However, clients may cause time delays when sending content needed to start working on the project with delays. The scope of work describes the workload meaning any change in the scope will change the work to be done. Some clients are not clear while describing what they want which make it a challenge to produce a proper project scope containing milestones, deliverables, activities completion time and products features that are expected to be provided by the project team. The quicker the client informs the team about changes they want, the better it is to avoid spending time and money unnecessarily. Changes in project management are known as "scope creep"; it happens that clients add requirements which constitute continuous or uncontrolled growth in a project's scope, at any point after the beginning of the project. Scope creep refers to changes in the original scope; it is the uncontrolled expansion of the scope and can result in delays and extra costs (Guru, 2008). The issue arises when the project's scope is not defined correctly affecting the budget; if the scope is not stable, it is difficult to set a final budget. However, if the budget is set and the client changes his/her mind, the official budget will change, and cost can increase, causing overbudget. Some clients are not opening minded, for example, and do not accept suggestions for project team making their job difficult sometimes. Quality of the work done usually is not affected based on client behaviour as the project team member must do their best to give clients quality website which satisfies their needs. From what was said by website designers, depending on the type of clients and how they behave their behaviour can impact the progress of the project by causing

delays sometimes or overbudget other times. A rude client demotivates and does not encourage people to work with them with pleasure; the designer may work faster just to get rid of the client.

Expectations are what the client wants at the end of the project. Some want a simple website when others want the most complicated one. The type of website they want will determine the project scope; will determine the amount of work that will be needed to deliver what that want. The length of the scope is influenced by what clients want. The fewer features or, the fewer pages requested reduce the amount of work, reduce the amount of time spend on the project also, the total cost of the project. The scope of the project is the full amount of work that needs to be performed under the given conditions to achieve the desired outcome (Guru, 2008). The more requirements or features usually imply more time, more expenses and more resources needed. However, it happened that clients change their mind and reduce the scope of the work, which will reduce the initial cost. The type of website is required does not matter; giving clients a good quality website is a priority. The quality of the site can be influenced by budget limitation; A client wants a website which cost, for example, R10000 at R7000; clients want the same amount of work to be done for less money. It has also happened that the client expects the team to complete the website in less time than needed. The average duration, for example, is four weeks to be live but the client wants it in two weeks it means extra work will be needed at extra cost; extra resources may be needed impacting the project budget.

Project progress goes hand in hand with project completion; in fact, the progression of the project determines the project completion time. The quicker the project is progressing, the quicker it will be completed. However, it does not ensure success as in project management. A successful project meets its objectives within time and budget by meeting the client's expectations. The evolution of the project can be delayed or fasted based on client 's expectations and client's behaviours. An example of client's behaviour affection project progress and completion will be unclear requirements as it prevents the team from setting up a final scope of work which leads to delays on project progress which delay completion time. If the scope of the work is not stated clearly, the team cannot estimate completion time and budget.

5.3. Recommendations

Clients' behaviours and attitude thus have can positively or negatively influence project delivery; therefore, clients should be aware of that fact. It will be a good thing to explain to clients, for example, that the quicker they respond to our questions, the quicker we can move forward with the current work. It is crucial to create a guideline to help the team determine the type of client they are facing (confuse, rude, confident, positive, open-minded, flexible). If they determine the type of client from the beginning of the project, it will help them to determine how to approach and to work with x or y type of clients. The guideline should content several questions and scenarios given to the clients. Their responses could help the team to determine the type of clients they are dealing with and what attitude they must-have for each type to avoid mistakes, delays, miscommunication. A guideline to help the team act or react according to the type of clients they have. It means the team will act and work differently with client A and B. Team members will have to adapt to each client behaviour during the project process to ensure project progress and success. Positive influence is welcome if it ensures project success and completion within time and budget.

The challenges established from the investigation will help organisations to improve their working relationship with clients. Use the research outcomes to ensure that the project team and clients work well together for the success of the project by delivery it on time, within budget and the expected outcomes. The research outcomes could help the project team to take into consideration these client's factors while estimating the project duration. The team could also use the research outcomes to design a project details form, to allow them to get as many as information and details from clients such as colour, content, specifications, size. The form should be used to help clients to translate their vision into writing as clear as possible which will be use by the graphic and content design to make sure client get what they want. The purpose is to of the form is to reduce the amount of changes from clients after the execution phases has started because changes happening after the planning cost time and money leading to delays and increase of budget (e.g. Make sure client understand that changes increase cost (design a form when you can collect as

many as possible information from client to allow them to give details of what they want about the website) make sure that each changes after the draft approval will cost them extra money).

The definition of scope in project management is the process of getting the necessary information required to start a project; it refers to the features that the product would have to meet stakeholders' requirements. For the scope issue, it is essential that the project team design template or design a set of interview questions to help them to get clients ideas as clear as possible from the beginning to start working on a draft website.

5.4. Conclusion

We are all clients or customers in a way or another. The main objective of our service providers is to keep clients happy by giving them what they want or give them beyond their expectations if possible. Happy clients ensure a good reputation as well as profit. In today's business environment client's needs and expectations guide and inspired project team to design concept and to produce innovative ideas.

The purpose of a project is to satisfy clients' needs. It can be done faster and efficiently if the team can understand the impact that clients may have on web development projects execution and overall project success; it will help organisations to see things differently. Even though the success of a project is the project manager and his/her team responsibility; the literature does not address the role as well as the impact that clients' behaviours and expectations might have on project constraints. Constraints are success criteria indicator; it means constraints help to determine project success. It was necessary as researcher firstly to find out through investigation what types of clients' behaviours affect the project constraints, which is affecting the project overall success and progress. Secondly, to find out how clients' expectations affect those same project constraints.

The research aimed to explore and understand the factors that influence project constraints based on clients' expectations and behaviours on the management of a web development project in

Cape Town South Africa. How client expectations and behaviours influence project progress and affect project success was the objective of the overall research. To be able to get results and to pursue an investigation, a mixed-method was used using qualitative and quantitative methods; Questionnaires and Interviews questions were given to several web design and web development companies.

The research question was as follow: are project constraint and project progress influenced by clients' expectations and behaviours in the management of web development projects? The result demonstrates to us that clients act, react, or behave in different ways during the project. Under the same circumstances, two clients will have different responses which can have a positive or negative influence on the different constraints such as time, cost, scope, and quality, which impact project progress and success. Lack of client consistency concerning project specifications was the main issue leading to scope creep resulting in delays and cost overruns.

The behaviour and the way clients perceive situations have an influence or determine the success or failure of a project, specifically in web development projects. The hope is that organisations will understand what effects clients' expectations and behaviours have on projects. If a company can understand the impact that clients have on time, cost, scope and quality, the company will be able to prevent, justify or understand some failures related to clients' expectations and behaviours. In the field of project management, specifically within the web industry, it is crucial to know under what circumstances clients may influence project completion or success besides the fact that a project manager can have skill/expertise. For future research, we can investigate how team performance might be affected by client behaviour and expectation.

6. REFERENCES

- Aadamsoo, A., 2010. Web Based Project Management System. Degree Program. Vaasan ammattikorkeakoulu university of applied sciences.
- Achour, H., Bensedrine, N. 2005. An evaluation of internet banking and online brokerage in Tunisia. In: Proceedings of the First International Conference on E-Business and E-learning (EBEL), Amman, Jordan: 147–158.
- Ader, H.J., Mellenbergh, G.J. and Hand, D.J. 2008. *Advising on research methods: A consultant companion*. Huizen, Netherlands: Johannes van Kessel.
- Afthanorhan, A., Awang, Z., Rashid, N., Foziah, H. and Ghazali. 2019. *Assessing the effects of service quality on customer satisfaction*. Management Science Letters: 14.
- Agarwal, N. and Rathod, U., 2006. *Defining 'success' for software projects: An exploratory revelation*. *International Journal of Project Management*, 24(4): 358-370.
- Ahmed, A. 2016. *Software project management: A process-driven approach*. United Kingdom: CRC Press.
- Al-Qeisiet, K., Dennis, C., Alamanos, E. and Jayawardhena, C. 2014. *Website design quality and usage behavior: Unified theory of acceptance and use of technology*. *Journal of Business Research*, 67(11): 2282–2290.
- Andersen, E., Grude, K. and Haug, T. 2009. *Goal Directed Project Management: Effective Techniques and Strategies*. 3rd ed. London: Kogan Page.
- Annie Brink, Adele Berndt. 2007. *Customer relationship management and customer service*. Landsdowne, South Africa: Juta Legal and Academic Publishers.
- Antonius, R. 2003. *Interpreting quantitative data with SPSS*. London: Sage Publications.
- Apposite Technologies, n.d. Metropolitan Area Network, Wide Area Network, Local Area Network. [online] Apposite Technologies. Available at: <<https://www.apposite-tech.com/blog/whats-difference-metropolitan-area-network-man-wide-area-network-wan/>> [4 June 2020]
- Arabi, A., Edum-Fotwe, F.T. and McCaffer, R. 2007. Does Client Behaviour Actively Induce Risk In Construction Projects? Boyd, D (Ed) Procs 23rd Annual ARCOM Conference, 3-5 September 2007, Belfast, NI, Association of Researchers in Construction Management: 745–754.

Ary, D., Jacobs, L.C., Razavieh, A. and Sorensen, C.K. 2002. *Introduction to research in education*. 6th ed. Belmont: Wadsworth Publishing Co.

Astle, M. (2015) *The Project Management Triangle: How to Manage Constraints and Ship on Time*. <https://clearbridgemoible.com/the-project-management-triangle-how-to-manage-constraints-and-ship-on-time>.

Babbie, E., 2008. *The Basics of Social Research*. 4th ed. Belmont: Thomson Higher Education: 211.

Bannerman: 2008. Defining project success: a multilevel framework. In PMI® Research Conference: Defining the Future of Project Management. Newtown Square: Project Management Institute.

Bannerman. 2008. *Defining Project Success: A Multi-Level Framework*. In: *Defining the Future of Project Management*. Warsaw: Project Management Institute: 2.

Barnes, S. and Vidgen, R., 2001. *An Evaluation of Cyber-Bookshops: The WebQual Method*. *International Journal of Electronic Commerce*, 6(1):11-30.

Barret, and Stanley, C. 1999. *Better Construction Briefing*. 1st ed. London: Blackwell Science.

Benz, M. 2019. 10 Project Constraints That Endanger Your Project's Success. ProjectManager.com. <https://www.projectmanager.com/blog/10-project-constraints-that-endanger-your-projects-success> [13 March 2019].

Bhatti, N., Bouch, A. and Kuchinsky, A., 2000. *Integrating user-perceived quality into Web server design*. *Computer Networks*, 33(1-6): 1-16.

Blessing, L. and Chakrabarti, A., 2014. *DRM, A Design Research Methodology*. Heidelberg: Springer: 117.

Brick Marketing, LLC (2019). What is Search Engine Ranking? - Define Search Engine Ranking. [online] Brick Marketing - SEO Marketing Solutions Company. Available at: <https://www.brickmarketing.com/define-search-engine-ranking.htm> [27 Aug. 2019]

Buckley, J., Buckley, M. and Chiang, H. (1976). *Research methodology and business decisions* / prepared for the National Association of Accountants and the Society of Industrial Accountants of Canada. New York: National Association of Accountants: 1.

Burke, R. 2010. *Fundamentals of Project Management*. 1st ed. Ringwood: Burke Publishing: 34.

Cambridge University Press (2019). Website | meaning in the Cambridge English Dictionary. [online] Dictionary.cambridge.org. Available at: <https://dictionary.cambridge.org/dictionary/english/website> [5 Mar. 2019]

Cambridge University Press. 2016. Constraint meaning in the Cambridge English dictionary. Cambridge Dictionaries Online. <http://dictionary.cambridge.org/dictionary/english/constraint> [29 April 2016].

Cao, M., Zhang, Q. and Seydel, J. 2005. *B2C e-commerce web site quality: an empirical examination*. *Industrial Management & Data Systems*, 105(5): 645-661.

Caplena GmbH. 2019. codit.co | Qualitative text analytics with the help of AI. [codit.co](https://codit.co/en/). <https://codit.co/en/> [13 March 2019].

Carayannis, Kwak, and Anbari. 2003. *The Story of Managing Projects by* (editors) Quorum Books,

Cebi, S. 2013. *Determining importance degrees of website design parameters based on interactions and types of websites*. *Decision Support Systems*, 54(2): 1030–1043.

Čeke, D. and Milašinović, B. 2015. *Early effort estimation in web application development*. *Journal of Systems and Software*, 103: 219–237.

Chaffey, D. 2009. *E-Business and E-Commerce Management*. 4th ed. Harlow, England: Pearson/Financial Times Prentice Hall.

Christensson: 2013. Web design definition. TechTerms. http://techterms.com/definition/web_design 26 July 2016

Cohen, L., Manion, L. and Morrison, K. 2011. *Research Methods in Education*, 7th ed. London: Routledge: 4

Collins, J. 2015. A brief history of Project Management. <https://www.ims-web.com/blog/a-brief-history-of-project-management>

Columbia University Mailman School of Public Health. 2019. Content Analysis | Columbia University Mailman School of Public Health. [Mailman.columbia.edu](http://mailman.columbia.edu). <https://www.mailman.columbia.edu/research/population-health-methods/content-analysis> 9 March 2019

Comer, D. 2018. *The Internet Book: Everything You Need to Know About Computer Networking and How The Internet Works*. 5th ed. Boca Raton: CRC Press.

Cook, D.P., Goh, C.-H. and Chung, C.H. 1999. Service Typologies: A State-of-The-Art Survey. *Production and Operations Management*, 8(3): 318–338.

Creswell, J. and Poth, C. 2018. *Qualitative Inquiry and Research Design: Choosing Among Five Approaches*. 4th ed. Thousand Oaks: SAGE Publications.

- Creswell, J. 2014. *Research Design: Qualitative, Quantitative, And Mixed Methods Approaches*. 4th ed. Thousand Oaks: SAGE Publications Ltd.
- Creswell, J.W. 2003. *Research Design, Qualitative, Quantitative and Mixed Method Approach*, 2nd ed. London, New Delhi: SAGE.
- Darnall, R. and Preston, J. 2012. *Beginning Project Management*. [Place of publication not identified]: [publisher not identified].
- De Wit, A. 1988. *Measurement of project success*. *International Journal of Project Management*, 6(3): 164-170.
- DeGeyter, S. 2019. 6 Easy Ways to Improve Your Site's Navigation - Search Engine Land. [online] Search Engine Land. Available at: <https://searchengineland.com/6-easy-way-to-improve-your-sites-navigation-132138> [20 Aug. 2019]
- Dictionary, U. 2018. Unrealistic | meaning in the Cambridge English Dictionary. [online] Dictionary.cambridge.org. Available at: <https://dictionary.cambridge.org/dictionary/english/unrealistic> [29 Oct. 2018]
- Dictionary.com. 2019. Definition of progress | Dictionary.com. www.dictionary.com. <https://www.dictionary.com/browse/progress> [11 September 2019].
- Divakaran Achari, D. 2014. *Research Methodology: A Guide to Ongoing Research Scholars in Management*. Horizon Books.
- Dobson, M. 2004. *Triple Constraints in Project Management*. Vienna: Management Concepts
- Emond, J. and Steins, C. 2011. *Pro web project management*. Berkeley, CA: Apress.
- Errihani, S., Elfezazi, S. and Benhida, K. 2015. *Adaptation and Application of Project Management According to The PMBOK To A Set of It Projects in A Public Body*. *Journal of Theoretical and Applied Information Technology*, 79(2): 191.
- Faculty Development and Instructional Design Center. 2019. Data Collection. Ori.hhs.gov. https://ori.hhs.gov/education/products/n_illinois_u/datamanagement/dctopic.html 8 March 2019
- Farkas, E.B. 2009. *Managing Web Projects*. 1st ed. Boca Raton: CRC Press.
- Fowler, F. 2013. *Survey research methods*. 5th ed. California: Sage Publications.
- Fowler, F.J. 1993. *Survey research methods*. 2nd ed. California: Sage Publications.
- Friedlein, A. 2001. *Web Project Management: Delivering Successful Commercial Web Sites*. San Francisco. Academic Press

- Fuller, M.A., Valacich, J.S. and George, J.F. 2008. *Information systems project management: A process and team approach*. United States: Pearson Prentice Hall.
- Gill, Stewart, K., Treasure, E. and Chadwick, B. (2008). *Methods of data collection in qualitative research: interviews and focus groups*. *British Dental Journal*, 204(6): 291-292.
- Goel, R. 2007. e-Commerce. New Age International
- Goldstein, S.M. 2003. Employee development: An examination of service strategy in a high-contact service environment. *Production and Operations Management*, 12(2): 186–203.
- Goto, K. 1999. Planning a Web Development Project. URL www.gotomedia.com/atlanta00/stage
- Graham M., W. 2010. *Managing Construction Projects*. 2nd ed. Oxford: Wiley-Blackwell: 207.
- Gratton, C. and Jones, D. 2010. *Research Methods for Sports Studies*. 2nd ed. New York: Routledge.
- Guru. 2008. *Scope creep in software development*. *Journal of Social Management*, 6: 45-59.
- Harr. R. 2013. Managing Client Expectations. https://seesparkbox.com/foundry/managing_client_expectations
- Haughn, M. 2015. What is constraint (project constraint)? - definition from WhatIs.com. WhatIs.com. <http://whatIs.techtarget.com/definition/constraint-project-constraint> [26 July 2016].
- Heldman, K. 2005. *PMP: Project Management Professional Study Guide*. 4th ed. Indianapolis: Wiley Publ.
- Hill, N. and Alexander, J. 2017. *The Handbook of Customer Satisfaction and Loyalty Measurement*. 2nd ed. New York. Routledge.
- Hirschheim, R. and Lyytinen, K. 1987. Information systems failures: A survey and classification of the empirical literature. *Oxford Surveys in Information Technology*, 4: 257-309.
- how2stats. 2019. What is Cronbach's Alpha? - Explained Simply (Part 2). <https://www.youtube.com/watch?v=kdjBSJmtepA> 30 April 2019.
- Huizingh, E. 2000. The content and design of web sites: an empirical study. *Information & Management*, 37(3): 123-134.
- Inspire Web Development. 2019. Top 12 Best Search Engines in The World. [online] Inspire.scot. Available at: <https://www.inspire.scot/blog/2016/11/11/top-12-best-search-engines-in-the-world238> [27 Aug. 2019]

- International Organization for Project Management. 2016. What is project management? IO4PMTM - International Organization for Project Management. http://www.io4pm.org/What_Is_Project_Management.php 4 May 2016.
- Investopedia. 2019. Understanding Perceived Value. [online] Investopedia. Available at: <https://www.investopedia.com/terms/p/perceived-value.asp> [23 Oct. 2019]
- Irwan. I. M. 2011. The influence of client practices during briefing process on project success. Unpublished Master's Degree Dissertation, Universiti Teknologi MARA, Shah Alam.
- Jackson, S. 2015. *Research Methods and Statistics: A Critical Thinking Approach*. 5th ed. Boston: Cengage Learning.
- Johnson, E., Bellman, S. and Lohse, G. 2003. *Cognitive Lock-In and the Power Law of Practice*. *Journal of Marketing*, 67(2): 62-75.
- Kappelman, L.A., McKeeman, R. and Zhang, L. 2006. Early warning signs of it project failure: The dominant Dozen. *Information Systems Management*, 23(4): 31–36.
- Keogh, J. 2001. *The Essential Guide To Networking*. Upper Saddle River, NJ: Prentice Hall PTR.
- Knowlton, B. 2012. *A Practical Guide to Managing Web Projects*. Penarth: Five Simple Steps.
- Korrapati, D. 2016. *Five Chapter Model for Research Thesis Writing: 108 Practical Lessons for MS/MBA/M.Tech/M.Phil/LLM/PhD Students*. New Delhi: Diamond Pocket Books (P) Ltd.
- Krauss, K. 2003. Testing an e-government website quality questionnaire: a pilot study. In: *Proceedings of the Fifth Annual Conference on World Wide Web Applications (WWW2003)*.
- Krippendorff, K. 2004. *Content Analysis: An Introduction to Its Methodology*. 2nd ed. Thousand Oaks: Sage Publications: 18
- Kulik: and Samuelsen, R. 2001. E-project management of the new e-reality. *PM Network*.
- Kumar, J. 2011. *Research Methodology: A Step-By-Step Guide for Beginners*. New Delhi: SA Sage Publications.
- Kumar, K. 2014. internet-Marketing (Online Marketing): A New Trend in Marketing in India- Scope and Development. In the *Proceedings of the International Conference on Information Engineering, Management and Security*. 2014. ICIEMS 2014. India: Association of Scientists, Developers and Faculties: 118.
- Kwon, W. and Lennon, S. 2009. *Reciprocal Effects Between Multichannel Retailers' Offline and Online Brand Images*. *Journal of Retailing*, 85(3): 377.

- Kyrnin, J. 2019. Why Should Your Site Use External or Outbound Links? [online] Lifewire. Available at: <https://www.lifewire.com/how-to-use-external-links-3466569> [27 Aug. 2019]
- Larson, E.W. and Gray, C.F. 2010. *Project management: The managerial process*. 5th ed. New York: McGraw Hill Higher Education.
- Latham, M. 1994. *Constructing the team (The Latham report)*. London, UK: HMSO.
- Lester, A. 2014. *Project management, planning and control: Managing engineering, construction and manufacturing projects to PMI, APM and BSI standards*. 5th ed. Amsterdam: Elsevier/Butterworth-Heinemann.
- Lewinson M. 2010. Project Constraints and Project Assumptions – A Planning Checklist. Project Constraints and Project Assumptions – A Planning Checklist <http://www.mymanagementguide.com/>
- Lim, E. H., and Ling, F. Y. Y. 2002. A Model for predicting client's contribution to project success. *Engineering, Construction and Architectural Management*, 7(5/6), 388-395.
- Liu, C. and Arnett, K. 2000. Exploring the factors associated with Web site success in the context of electronic commerce. *Information & Management*, 38(1): 23-33.
- Lowe, D. 2004. *Networking for Dummies*, 10th ed. 7th ed. Hoboken: Wiley Publishing, Inc.
- Lowe, D. 2016. *Networking for Dummies*. 11th ed. Hoboken: John Wiley and Sons, Inc.
- Malhotra, N.K. 2010. *Marketing Research: An Applied Orientation*. New Jersey: Pearson
- Maraboli, S. 2009. *Life, the Truth, and Being Free*. Port Washington, NY: Better Today Publishing.
- Marshall, C. and Rossman, G. 1999. *Designing qualitative research*. 3rd ed. Los Angeles: Sage Publications.
- Marshall, C. and Rossman, G. 2011. *Designing Qualitative Research*. 5th ed. Thousand Oaks: SAGE Publications, Inc: 209-210.
- McNamara, C. 1999. General Guidelines for Conducting Research Interviews. Managementhelp.org. <http://www.managementhelp.org/evaluatn/interview.htm> 6 March 2019
- Merriam-Webster. 2015. Definition of Behavior. Merriam-Webster Dictionary. <http://www.merriam-webster.com/dictionary/behavior> 5 May 2016.
- Miles, M., Huberman, A. and Saldaña, J. 2014. *Qualitative Data Analysis: A Methods Sourcebook*. 3rd ed. Thousands Oaks: SAGE Publications, Inc: 12.

- Munns, A. and Bjeirmi, B. 1996. *The role of project management in achieving project success*. *International Journal of Project Management*, 14(2): 81–87.
https://notendur.hi.is/vio1/The_role_of_project_management_in_achieving_project_success.pdf
 19 June 2016.
- Nagarajan, K. 2004. *Project Management*. New Delhi. New Age International
- Narayanan, S., Balasubramanian, S. and Swaminathan, J.M. 2011. Managing Outsourced software projects: An analysis of project performance and customer satisfaction. *Production and Operations Management*, 20(4): 508–521.
- Ntda 2013. Introduction to the
 Web.http://www.failteireland.ie/Failteireland/media/WebsiteStructure/Documents/2_Develop_Your_Business/6_Funding/Introduction-to-the-web.pdf
- O'Leary. 2004. *The Essential Guide to Doing Research*. 1st ed. London: Sage Publications.
- Padua, D. 2011. *Encyclopaedia of parallel computing*. New York: Springer: 528.
- Pandey, D. 2011. *Project management essentials: A quintessential guide to a successful project*. United States: Tate Publishing and Enterprises, L.L.C.
- Paul, J. 2004. *Introduction to the Philosophies of Research and Criticism in Education and the Social Sciences*. London: Prentice-Hall.
- PeñalverGarcía, J.A. 2012. Project constraints: From triple constraint to sextuple constraint. Promanagers and CE. <https://thewaytoeachouraims.wordpress.com/tag/triple-constraints/> 26 April 2016
- Pinto, J. and Morris. 2007. *The Wiley Guide to Project, Program, And Portfolio Management*. Hoboken, N.J.: Wiley: 227-228.
- Plano Clark, V. and Ivankova, N. 2015. *Mixed Methods Research: A Guide to the Field*. Thousand Oaks: SAGE Publications.
- PM4DEV, 2014. *Effective Project Management for Development Organizations*. 3rd ed. PM4DEV: 176.
- Porta, M. 2009. Eight Characteristics of a Good Website
<http://www.successdesigns.net/articles/entry/characteristics-of-a-good-website>
- Powell, T.A. 2001. *Web design: The complete reference*. Berkeley, CA: McGraw-Hill Osborne Media.

- Procaccino, J. and Verner, J. 2006. *Software project managers and project success: An exploratory study*. *Journal of Systems and Software*, 79(11):1541-1551.
- Project Management Institute. 2008. *A guide to the project management body of knowledge (PMBOK guide)*. 4th ed. United States: Project Management Institute.
- Project Management Institute. 2013. *A guide to the project management body of knowledge (PMBOK® Guide)*. 5th ed. Newtown Square: Project Management Institute.
- Project Smart. 2019. Progress Reporting. Project Smart.
<https://www.projects smart.co.uk/progress-reporting.php> 26 June 2019
- Pryke, S. and Smyth, H. 2006. *The management of complex projects: A relationship approach*. Malden, MA: Blackwell Publishing.
- Pullan: and Murray-Webster, R. 2011. *Short Guide to Facilitating Risk Management*. Surrey: Gower.
- Punch K. F. 2013. *Introduction to Social Research: Quantitative and Qualitative Approaches*. Sage.
- Quad, A. 2016. Research tools: interviews & questionnaires – Research Methodology In Education. [online] Lled500.trubox.ca. Available at: <<https://lled500.trubox.ca/2016/225>> [1 July 2020]
- Raddon, A. 2010. Early Stage Research Training: Epistemology & Ontology In Social Science Research.
- Rountree, D. 2013. *Windows 2012 Server Network Security: Securing Your Windows Network Systems and Infrastructure*. Waltham: Syngress.
- Saunders, M.N.K., Lewis, Thornhill, A. and Thorn, A. 2009. *Research methods for business students*. 5th ed. New York: Prentice-Hall.
- Schostak, J. and Schostak, J. 2008. *Radical Research: Designing, Developing and Writing Research to Make a Difference*. 1st ed. London: Routledge.
- Schwalbe, K. 2015. *Information Technology Project Management*. 8th ed. Boston, MA: Cengage Learning.
- Sesay, A. 2011. *Educational research: A Beginner's Guide*. 1st ed. [Place of publication not identified]: Xlibris Corp.
- Severance, C., 2015. *Introduction to Networking: How the Internet Works*. Michigan: CreateSpace Independent Publishing Platform.

- Sfetcu, N. 2014. *Web Design and Development*. Raleigh United States: Lulu Press Inc.
- Shapiro, D., 2013. Pest to pestle. [online] Training Industry. Available at: <<https://trainingindustry.com/blog/leadership/pest-to-pestle/>> [11 June 2020]
- Sheffield, R. 2009. *The web content strategist's bible: The complete guide to a new and lucrative career path for writers of all kinds*. Atlanta, USA: ClueFox Pub.
- Shelly, G.B. and Woods, D.M. 2008. *HTML: Introductory concepts and techniques*. 5th ed. Boston, MA: Course Technology, Cengage Learning.
- Shenhar AJ, Levy O. Mapping the dimensions of project success. *Project Manage J* 1997;28(2):8756–9728.
- Shinn. 2004. *Web Project Survival Guide: Real World Tips for Bringing Projects in On Time, On Budget*. RareClarity
- Siegelaub, J. M. 2007. Six (yes six!) constraints: an enhanced model for project control. Paper presented at PMI® Global Congress 2007—North America, Atlanta, GA. Newtown Square, PA: Project Management Institute.
- Signore, O. 2005. A comprehensive model for eb sites quality. In: *Proceedings of the Seventh IEEE International Symposium on Web Site Evolution (WSE'05)*
- Smith, B.A. and Merchant, E.J. 2001. Designing an attractive web site: variables of importance. In *Proceedings of the 32nd Annual Conference of the Decision Sciences Institute*, San Francisco, CA.
- Sreejesh, S., Mohapatra, S. and Anusree, M. 2014. *Business Research Methods: An Applied Orientation*. New York: Springer.
- Stewart, D.M. 2003. Piecing together service quality: a framework for robust service. *Production and Operations Management*, 12(2): 246–265.
- Strauss, A. 1987. *Qualitative analysis for social scientists*. Cambridge: Cambridge University Press.
- Strauss, R. and Hogan. 2013. *Developing effective websites*. Burlington, MA: Focal Press: 45-46.
- Strauss, R. and Hogan. 2001. *Developing Effective Websites: A project manager's guide*. 2nd ed. United States of America: Focal Press.

Tan, F., Tung, L. 2003. Exploring website evaluation criteria using the repertory grid technique: a web designers' perspective. In: Proceedings of the Second Annual Workshop on HCI Research in MIS, WA

Techopedia Inc. 2016. What is web development? - definition from Techopedia. Techopedia. <https://www.techopedia.com/definition/23889/web-development> 26 July 2016

Techopedia.com. 2018. What is Web Content? - Definition from Techopedia. [online] Available at: <https://www.techopedia.com/definition/23885/web-content> [1 Nov. 2018]

The Balance Careers. 2019. Here Is What the Project Time Management Process Plan Includes. [online] The Balance Careers. Available at: <https://www.thebalancecareers.com/what-is-project-time-management-3879177> [20 Jan. 2019]

The Chartered Institute of Building. 2014. *Code of Practice for Project Management for Construction and Development*. 5th ed. West Sussex: Wiley-Blackwell.

Tommy House Studios. 2019. Website Development: Tommy House Studios. Tommyhouse.com. <https://tommyhouse.com/create/website-development> 24 April 2019.

Turner, R.J. 2004. *Managing web projects: The management of large projects and programmes for web-space delivery*. Aldershot: Gower Publishing.

Usmani, F. 2013. Assumptions and Constraints In Project Management | PM Study Circle. [online] PM Study Circle. Available at: <https://pmstudycircle.com/2012/10/assumptions-and-constraints-in-project-management/> [4 June 2020]

Vasilachis de Gialdino, I. 2009. Ontological and Epistemological Foundations of Qualitative Research. *Forum Qualitative Sozialforschung / Forum: Qualitative Social Research*, 10(2).

Vila, N. and Kuster, I. 2011. Consumer feelings and behaviours towards well designed websites. *Information and Management*, 48(4-5): 166–177.

Vodnik, S. and Gosselin, D. 2014. *JavaScript: The web warrior series*. 6th ed. United States: Cengage Learning.

Walker, A. 2007. *Project management in construction*. 5th ed. Oxford: Wiley-Blackwell (an imprint of John Wiley and Sons Ltd).

Wallace. 1999. Project Structure and Organisation <http://www.epmbook.com/structure.htm>

Wateridge, J. How can IS/IT projects be measured for success. *Int J Project Manage* 1998;16(1):59–63.

- WE ACT Services. 2015. Triple constraint archives -. WE ACT Services.
<http://blog.weactservices.com/tag/triple-constraint/> [4 May 2016]
- WebFinance. 2016a. What is a project? Definition and meaning. BusinessDictionary.com.
<http://www.businessdictionary.com/definition/project.html> [20 June 2016]
- WebFinance. 2016b. What is project team? Definition and meaning. BusinessDictionary.com.
<http://www.businessdictionary.com/definition/project-team.html> [29 April 2016]
- WebFinance. 2016c. What is constraint? Definition and meaning. BusinessDictionary.com.
<http://www.businessdictionary.com/definition/constraint.html#ixzz47E2KCu4i> [29 April 2016]
- WebFX (2019). 5 Ways to Improve Your Search Engine Ranking on Google. [online]
Webfx.com. Available at: <https://www.webfx.com/improve-search-engine-ranking.html> [27 Aug. 2019]
- Weinberg, B. 2000. *Don't keep your Internet customers waiting too long at the (virtual) front door. Journal of Interactive Marketing*, 14(1): 30-39.
- WWW Gao, J. 1999. Introduction to Internet and
WWW.<http://www.engr.sjsu.edu/gaojerry/course/cmpe296u/slides/introduction.pdf>
- Yang, L., Rahman, A. and Connie, G., 2019. *Factor Influencing Trust in Internet Shopping. In: 1st International Digital Conference on Modern Business Management and Social Science. Negeri Sembilan: International Journal of Advanced Business and Management: 27.*
- Young, T.L. 2006. *Successful Project Management*. 1st ed. London: Kogan Publishers.
- Young, T.L. 2013. *Successful project management*. 4th ed. London: Kogan Publishers.

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9. APPENDICES

APPENDIX A: QUESTIONNAIRE

The impact of clients' expectations and behaviours on project constraints in the management of Web Development projects

The impact of clients' expectations and behaviours on project constraints in the management of Web Development projects

Dear Respondent, This is an academic exercise seeking to understand how clients' expectations and behaviours influence the management of web development projects. Please do not write your name or of your organisation, all the information collected is strictly confidential and your privacy is protected.

Thank you for participating.

* Required

SECTION A: GENERAL INFORMATION

Please select one option that best describes your web projects involvement/situation

1. In the past 24 months I was mostly involved in *

Mark only one oval.

- Web development
- Web designing
- Web maintenance and upgrading
- Web administration
- Other: _____

2. In the above projects I mostly worked as a *

Mark only one oval.

- Project manager
- Project team member
- Web administrators
- Web designer
- Web developer
- Content managers and writers
- Project managers and administrators

- Functional and divisional managers
- Web services client liaisons
- web security specialists
- Other: _____

The impact of clients' expectations and behaviours on project constraints in the management of Web Development projects

3. I was (am) involved in the following phases of the projects *

Check all that apply.

- Initiation or Definition
- Planning
- Design
- Site Development
- Testing and Delivery
- Maintenance

Start this form over.

SECTION B: CLIENT EXPECTATIONS ON WEB PROJECTS (Outputs)

4. For each of the below attributes please rank or score them according to how important they are to clients you have dealt with: (1 being the most important and 5 being the least) *

Check all that apply.

| | 1 | 2 | 3 | 4 | 5 |
|---|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| High quality, original, accurate and detailed content | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Easy to navigate through and use | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| A professional outlook (colour, images, fonts, structure) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Upload and download speed | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

| | | | | | |
|--|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| Well-ranked by search engines | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Adequate external links | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Interactive communication systems and feedback | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Error or bug free | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Secure from external threats | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Easy to upgrade and maintain | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Cost effectiveness | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

SECTION C: COST, TIME AND SPECIFICATION (3 CONSTRAINTS AND CLIENT BEHAVIOUR)

Please select a response that, in your own opinion, describes the behaviours of the Clients you dealt with

5. Clients discussed required outputs before the project commencement. *

Mark only one oval.

- Never
- Sometimes
- Always

6. Clients were consistent with what they wanted as outputs. *

Mark only one oval.

- Never
- Sometimes
- Always

s.google.com/forms/d/1XBBa1TIEIhxPEYFDdX7ed0Yv9XotgNpx6kZTWbmd1Vw/edit

2/6

The impact of clients' expectations and behaviours on project constraints in the management of Web Development projects

7. Clients were satisfied with what they had ordered once delivered. *

Mark only one oval.

- Never
- Sometimes
- Always

8. Clients were aware that time constraints can affect project outputs. *

Mark only one oval.

- Never
 Sometimes
 Always

9. Clients time requirements were consistent with their required outputs. *

Mark only one oval.

- Never
 Sometimes
 Always

10. Clients were flexible on time frames where required. *

Mark only one oval.

- Never
 Sometimes
 Always

11. Clients were satisfied with our time management of projects. *

Mark only one oval.

- Never
 Sometimes
 Always

12. Clients were aware that budgetary constraints can affect project outputs. *

Mark only one oval.

- Never
 Sometimes
 Always

13. Clients budgets requirements were consistent with their required outputs. *

Mark only one oval.

- Never
 Sometimes
 Always

14. Clients budgets were flexible when needed. *

Mark only one oval.

- Never
- Sometimes
- Always

15. Clients were satisfied with our completion of projects within budget. *

Mark only one oval.

- Never
- Sometimes
- Always

Section D: IMPACT ON PROJECT TEAM PERFORMANCE

Please select a response that, in your own opinion best describes the Impact that client behaviour have had on your performance on web projects

16. As a team, we met the output specifications made by clients. *

Mark only one oval.

- Never
- Sometimes
- Always

17. As a team, we met the budgets set with clients. *

Mark only one oval.

- Never
- Sometimes
- Always

18. As a team, we met the time frames agreed with clients. *

Mark only one oval.

- Never
- Sometimes
- Always

Section E

Open-ended questions

19. List below 4 things about clients/customers that could impact negatively on your performance on projects. 1,2,3,4 *

google.com/forms/d/1XBBa1TIEIhxPEYFDdX7ed0Yv9XotgNpx6kZTWbmd1Vw/edit

4/6

The impact of clients' expectations and behaviours on project constraints in the management of Web Development projects

20. List below 4 things about clients/customers that could impact positively on your performance on projects. 1,2,3,4 *

21. What kind of behaviours do you expect from a client/customer? 1,2,3,4 *

22. List 4 things that you don't like when it comes to making client/customer happy. 1,2,3,4 *

Thank You

Thank you for filling in this questionnaire. Your response will be held with high confidentiality. If you need to inquire on the results of the questionnaire please feel free to consult me.

“A goal without a plan is just a wish.” Antoine de Saint-Exupéry

APPENDIX B : INTERVIEW QUESTIONS (Part One)

The Impact of Clients' Expectations and Behaviours on Project Constraints in The Management Of Web Projects In Cape Town.

My name is Audrey, I am a register master student at Cape Peninsula University of Technology. This research interviews are part of my thesis work. You are invited to participate in a research study conducting by me. The purpose of this survey is to gain your views regarding the topic 'The impact of client's expectations and behaviours on project constraints in the management of web development projects in Cape Town.'

The interview will take 20 to 30 minutes, and your responses are completely anonymous. You are free to withdraw at any time during the interview. You are also free to ask for clarity if the question is not clear to you.

At the beginning of a project, you seat with the client to discuss specifications, time frame and cost. After agreeing on specification, completion time and cost:

- Does Client set website requirements? Do you also advise and suggest, or you stick to precisely what they ask?
- How often may a change of website requirements/specifications happen? Most of the time who request changes. Can you tell us how changes affect the overall project?
- Do you think the client should inform you immediately if anything changes in their scope/requirement during the web design process? Why?
- Can you describe the different type of clients you usually meet in your field of work? If `you had to choose a specific type of client to work with, based on the one you describe above which type you will prefer? Why?
- According to you, what type of behaviour from the client will be best for you to ensure the success of the final product?
- Could you tell us in what ways a client can affect team performance on the project?
- When it comes to scope, time, and cost, how does the client may influence on it based on your experiences?

APPENDIX C: INTERVIEW QUESTIONS (Part Two)

Instructions

1. For each of the statement below, circle the number that indicates the degree to which you agree or disagree.
2. Give your immediate impressions. There is no right or wrong answer.

| Statements | Strongly disagree | Disagree | Neutral | Agree | Strongly agree |
|---|-------------------|----------|---------|-------|----------------|
| Client needs to know exactly what they want at the beginning of the project. | 1 | 2 | 3 | 4 | 5 |
| The client must be a part of the decision-making process. | 1 | 2 | 3 | 4 | 5 |
| In complex situations, leaders should sit down with subordinates and clients and work problems out. | 1 | 2 | 3 | 4 | 5 |
| It is fair to say that clients have the last word and are always right. | 1 | 2 | 3 | 4 | 5 |
| Project managers should communicate with the client often. | 1 | 2 | 3 | 4 | 5 |
| The client should stay out of the way of team members as they do their work. | 1 | 2 | 3 | 4 | 5 |
| Clients have the right to change ideas anytime. | 1 | 2 | 3 | 4 | 5 |
| After the client accepts the website, no change should be accepted. | 1 | 2 | 3 | 4 | 5 |
| Direction or guidance should come from the client. | 1 | 2 | 3 | 4 | 5 |
| What client wants is not precisely what they get. | 1 | 2 | 3 | 4 | 5 |
| The budget of the client determines what they get as a website. | 1 | 2 | 3 | 4 | 5 |
| The scope of the project is based on what the client wants. | 1 | 2 | 3 | 4 | 5 |

APPENDIX D: ETHICAL CLEARANCE



P.O. Box 1906 • Bellville 7535 South Africa • Tel: +27 21 4603534 • Email: majamanin@cput.ac.za
Symphony Road Bellville 7535

| | |
|--|-------------------|
| Office of the Chairperson Research Ethics Committee | Faculty: BUSINESS |
|--|-------------------|

At a meeting of the Research Ethics Committee on 17 August 2016, Ethics Approval


was granted Audrey Nadyne Obone Obam Lomba for research activities

Related to the MTech/DTech: MTech Business Admin (Project Management) the Cape Peninsula
University of Technology

| | |
|-------------------------------|---|
| Title of dissertation/thesis: | THE IMPACT OF CLIENT'S EXPECTATIONS AND BEHAVIOURS ON PROJECT CONSTRAINTS IN THE MANAGEMENT OF WEB DEVELOPMENT PROJECTS IN CAPE TOWN. Supervisor: Mr S Fore |
|-------------------------------|---|

Comments:

Decision: APPROVED

| | |
|---|----------------|
|  | 17 AUGUST 2016 |
| Signed: Chairperson: Research Ethics Committee | Date |

Clearance Certificate No | 2016FBREC393

APPENDIX E: INVITATION TO PARTICIPATE



Cape Peninsula University of Technology
Faculty of Business and Management Sciences
Content to partake in an academic study

Research conducted by: Audrey Nadyne Obone Obam Lomba

Student Number: 211108278

Invitation to participate in an academic research study

Dear Sir/Madam,

You are kindly invite to partake in a research study. The title of the research is "The impact of clients' expectations and behaviours on project constraints in the management of web development projects in Cape Town". Mrs. Audrey Nadyne Obone Obam Lomba is conducting the research; she is register as a Master student at the Cape Peninsula University of Technology under the supervision of Mr. Stanley Survey. The purpose of the study is to help project managers to understand how clients' expectations and behaviours influence constraints; how does project progress and success are affected by the same constraints.

We want you to know, there are no risks associated with participating in this study. Your participation in this study is voluntary and you are free to withdraw from it at any time without an obligation. Please note that your views/responses will be dealt with respect, honesty, and confidentiality. Furthermore, you can withdraw at any time, should you feel so. Your responses and the name of your organization will be kept anonymous. The information captured would be used for academic purposes only.

I would like also to indicate that your views are important and would be a real contribution towards the better management of web development projects.

Your consent to participate in this study will be highly appreciated.

For Further inquiries, you may contact me on: 211108278@mycput.ac.za

APPENDIX F: REPORT, DESCRIPTIVES AND RELIABILITY TABLES

Descriptive statistic – Frequency tables for Section A

Please select one option that best describes your web projects involvement/situation.

| In the past 24 months I was mostly involved in: | | | |
|---|-------------------------------|-----------|---------|
| | | Frequency | Percent |
| Valid | Web Development | 43 | 49.4 |
| | Web Designing | 29 | 33.3 |
| | Web maintenance and Upgrading | 23 | 26.4 |
| | Web Administration | 17 | 19.5 |
| | Others | 9 | 10.3 |
| | Total | 87 | 100.0 |

| Others (In the past 24 months I was mostly involved in) | Frequency | Percent |
|---|-----------|---------|
| Valid | 78 | 89.7 |
| Content managers and writers | 3 | 3.4 |
| DB Maintenance | 1 | 1.1 |
| Operations | 1 | 1.1 |
| Planning and client first contact | 1 | 1.1 |
| Programming | 1 | 1.1 |
| QA tester | 1 | 1.1 |

| | | |
|------------------------|-----------|--------------|
| Web Management Process | 1 | 1.1 |
| Total | 87 | 100.0 |

In the above projects I mostly worked as a:

| | N | Percent | Mean |
|-------------------------------------|-----------|-------------|-------------|
| Project Manager | 13 | 14.9 | 1.00 |
| Project Team Member | 33 | 37.9 | 1.00 |
| Web administrators | 13 | 14.9 | 1.00 |
| Web designers | 22 | 25.3 | 1.00 |
| Web developers | 35 | 40.2 | 1.00 |
| Content managers and writers | 7 | 8.0 | 1.00 |
| Project managers and administrators | 3 | 3.4 | 1.00 |
| Functional and divisional managers | 1 | 1.1 | 1.00 |
| Web services client liaisons | 6 | 6.9 | 1.00 |
| web security specialists | 4 | 4.6 | 1.00 |
| Other: Scripter | 1 | 1.1 | 1.00 |
| Total | 87 | 100 | |

I was (am) involved in the following phases of the projects:

| | | Frequency | Percent |
|-------|--------------------------|-----------|-------------|
| Valid | Initiation or Definition | 35 | 40.2 |
| | Planning phase | 37 | 42.5 |
| | Design | 27 | 31.0 |

| | | | |
|--|----------------------|-----------|--------------|
| | Site Development | 45 | 51.7 |
| | Testing and Delivery | 41 | 47.1 |
| | Maintenance | 38 | 43.7 |
| | Total | 87 | 100.0 |

Descriptive statistic – Frequency tables for Section B

For each of the below attributes please rank or score them according to how important they are to clients you have dealt with: (1 being the most important and 5 being the least)

Results Q4 Option 1

[High quality, original, accurate and detailed content]

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|-----------------|-----------|---------|---------------|--------------------|
| Valid | Most Important | 57 | 65.5 | 65.5 | 65.5 |
| | 2nd Choice | 8 | 9.2 | 9.2 | 74.7 |
| | 3rd Choice | 10 | 11.5 | 11.5 | 86.2 |
| | 4th Choice | 5 | 5.7 | 5.7 | 92.0 |
| | Least Important | 7 | 8.0 | 8.0 | 100.0 |
| | Total | 87 | 100.0 | 100.0 | |

Results Q4 Option 2

[Easy to navigate through and use]

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|-----------------|-----------|---------|---------------|--------------------|
| Valid | Most Important | 41 | 47.1 | 47.1 | 47.1 |
| | 2nd Choice | 17 | 19.5 | 19.5 | 66.7 |
| | 3rd Choice | 15 | 17.2 | 17.2 | 83.9 |
| | 4th Choice | 6 | 6.9 | 6.9 | 90.8 |
| | Least Important | 8 | 9.2 | 9.2 | 100.0 |
| | Total | 87 | 100.0 | 100.0 | |

Results Q4 Option 3

[A professional outlook (colour, images, fonts, structure)]

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|-----------------|-----------|---------|---------------|--------------------|
| Valid | Most Important | 36 | 41.4 | 41.4 | 41.4 |
| | 2nd Choice | 19 | 21.8 | 21.8 | 63.2 |
| | 3rd Choice | 15 | 17.2 | 17.2 | 80.5 |
| | 4th Choice | 10 | 11.5 | 11.5 | 92.0 |
| | Least Important | 7 | 8.0 | 8.0 | 100.0 |
| | Total | 87 | 100.0 | 100.0 | |

Results Q4 Option 4

[Upload and download speed]

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|-----------------|-----------|---------|---------------|--------------------|
| Valid | Most Important | 15 | 17.2 | 17.2 | 17.2 |
| | 2nd Choice | 27 | 31.0 | 31.0 | 48.3 |
| | 3rd Choice | 29 | 33.3 | 33.3 | 81.6 |
| | 4th Choice | 13 | 14.9 | 14.9 | 96.6 |
| | Least Important | 3 | 3.4 | 3.4 | 100.0 |
| | Total | 87 | 100.0 | 100.0 | |

Results Q4 Option 5
[Well-ranked by search engines]

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|-----------------|-----------|---------|---------------|--------------------|
| Valid | Most Important | 17 | 19.5 | 19.5 | 19.5 |
| | 2nd Choice | 22 | 25.3 | 25.3 | 44.8 |
| | 3rd Choice | 25 | 28.7 | 28.7 | 73.6 |
| | 4th Choice | 13 | 14.9 | 14.9 | 88.5 |
| | Least Important | 10 | 11.5 | 11.5 | 100.0 |
| | Total | 87 | 100.0 | 100.0 | |

Results Q4 Option 6
[Adequate external links]

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|-----------------|-----------|---------|---------------|--------------------|
| Valid | Most Important | 6 | 6.9 | 6.9 | 6.9 |
| | 2nd Choice | 23 | 26.4 | 26.4 | 33.3 |
| | 3rd Choice | 24 | 27.6 | 27.6 | 60.9 |
| | 4th Choice | 19 | 21.8 | 21.8 | 82.8 |
| | Least Important | 15 | 17.2 | 17.2 | 100.0 |
| | Total | 87 | 100.0 | 100.0 | |

Results Q4 Option 7
[Interactive communication systems and feedback]

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|----------------|-----------|---------|---------------|--------------------|
| Valid | Most Important | 16 | 18.4 | 18.4 | 18.4 |
| | 2nd Choice | 20 | 23.0 | 23.0 | 41.4 |
| | 3rd Choice | 25 | 28.7 | 28.7 | 70.1 |
| | 4th Choice | 16 | 18.4 | 18.4 | 88.5 |

| | | | | | |
|--|-----------------|----|-------|-------|-------|
| | Least Important | 10 | 11.5 | 11.5 | 100.0 |
| | Total | 87 | 100.0 | 100.0 | |

Results Q4 Option 8

[Error or bug free]

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|-----------------|-----------|---------|---------------|--------------------|
| Valid | Most Important | 20 | 23.0 | 23.0 | 23.0 |
| | 2nd Choice | 19 | 21.8 | 21.8 | 44.8 |
| | 3rd Choice | 27 | 31.0 | 31.0 | 75.9 |
| | 4th Choice | 12 | 13.8 | 13.8 | 89.7 |
| | Least Important | 9 | 10.3 | 10.3 | 100.0 |
| | Total | 87 | 100.0 | 100.0 | |

Results Q4 Option 9

[Secure from external threats]

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|-----------------|-----------|---------|---------------|--------------------|
| Valid | Most Important | 24 | 27.6 | 27.6 | 27.6 |
| | 2nd Choice | 19 | 21.8 | 21.8 | 49.4 |
| | 3rd Choice | 21 | 24.1 | 24.1 | 73.6 |
| | 4th Choice | 9 | 10.3 | 10.3 | 83.9 |
| | Least Important | 14 | 16.1 | 16.1 | 100.0 |
| | Total | 87 | 100.0 | 100.0 | |

Results Q4 Option 10

[Easy to upgrade and maintain]

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|----------------|-----------|---------|---------------|--------------------|
| Valid | Most Important | 31 | 35.6 | 35.6 | 35.6 |

| | | | | |
|-----------------|----|-------|-------|-------|
| 2nd Choice | 18 | 20.7 | 20.7 | 56.3 |
| 3rd Choice | 15 | 17.2 | 17.2 | 73.6 |
| 4th Choice | 14 | 16.1 | 16.1 | 89.7 |
| Least Important | 9 | 10.3 | 10.3 | 100.0 |
| Total | 87 | 100.0 | 100.0 | |

Results Q4 Option 11

[Cost effectiveness]

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|-----------------|-----------|---------|---------------|--------------------|
| Valid | Most Important | 33 | 37.9 | 37.9 | 37.9 |
| | 2nd Choice | 16 | 18.4 | 18.4 | 56.3 |
| | 3rd Choice | 15 | 17.2 | 17.2 | 73.6 |
| | 4th Choice | 12 | 13.8 | 13.8 | 87.4 |
| | Least Important | 11 | 12.6 | 12.6 | 100.0 |
| | Total | 87 | 100.0 | 100.0 | |

Descriptive statistic – Frequency tables for Section C

Please select a response that, in your own opinion describes the behaviours of the Clients you dealt with:

Results Q5 Option 1

[Clients discussed required outputs prior to the project commencement]

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|-----------|-----------|---------|---------------|--------------------|
| Valid | Never | 6 | 6.9 | 6.9 | 6.9 |
| | Sometimes | 44 | 50.6 | 50.6 | 57.5 |

| | | | | | |
|--|--------|----|-------|-------|-------|
| | Always | 37 | 42.5 | 42.5 | 100.0 |
| | Total | 87 | 100.0 | 100.0 | |

Results Q5 Option 2

[Clients were consistent with what they wanted as outputs]

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|-----------|-----------|---------|---------------|--------------------|
| Valid | Never | 19 | 21.8 | 21.8 | 21.8 |
| | Sometimes | 56 | 64.4 | 64.4 | 86.2 |
| | Always | 12 | 13.8 | 13.8 | 100.0 |
| | Total | 87 | 100.0 | 100.0 | |

Results Q5 Option 3

[Clients were satisfied with what they had ordered once delivered]

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|-----------|-----------|---------|---------------|--------------------|
| Valid | Never | 9 | 10.3 | 10.3 | 10.3 |
| | Sometimes | 43 | 49.4 | 49.4 | 59.8 |
| | Always | 35 | 40.2 | 40.2 | 100.0 |
| | Total | 87 | 100.0 | 100.0 | |

Results Q5 Option 4

[Clients were aware that time constraints can affect project outputs]

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|-----------|-----------|---------|---------------|--------------------|
| Valid | Never | 11 | 12.6 | 12.6 | 12.6 |
| | Sometimes | 53 | 60.9 | 60.9 | 73.6 |
| | Always | 23 | 26.4 | 26.4 | 100.0 |
| | Total | 87 | 100.0 | 100.0 | |

Results Q5 Option 5

[Clients time requirements were consistent with their required outputs]

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|-----------|-----------|---------|---------------|--------------------|
| Valid | Never | 23 | 26.4 | 26.4 | 26.4 |
| | Sometimes | 50 | 57.5 | 57.5 | 83.9 |
| | Always | 14 | 16.1 | 16.1 | 100.0 |
| | Total | 87 | 100.0 | 100.0 | |

Results Q5 Option 6

[Clients were flexible on timeframes where required]

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|-----------|-----------|---------|---------------|--------------------|
| Valid | Never | 15 | 17.2 | 17.2 | 17.2 |
| | Sometimes | 54 | 62.1 | 62.1 | 79.3 |
| | Always | 18 | 20.7 | 20.7 | 100.0 |
| | Total | 87 | 100.0 | 100.0 | |

Results Q5 Option 7

[Clients were satisfied with our time management of projects]

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|-----------|-----------|---------|---------------|--------------------|
| Valid | Never | 8 | 9.2 | 9.2 | 9.2 |
| | Sometimes | 52 | 59.8 | 59.8 | 69.0 |
| | Always | 27 | 31.0 | 31.0 | 100.0 |
| | Total | 87 | 100.0 | 100.0 | |

Results Q5 Option 8

[Clients were aware that budgetary constraints can affect project outputs]

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|-----------|-----------|---------|---------------|--------------------|
| Valid | Never | 9 | 10.3 | 10.3 | 10.3 |
| | Sometimes | 50 | 57.5 | 57.5 | 67.8 |
| | Always | 28 | 32.2 | 32.2 | 100.0 |
| | Total | 87 | 100.0 | 100.0 | |

Results Q5 Option 9

[Clients budgets requirements were consistent with their required outputs]

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|-----------|-----------|---------|---------------|--------------------|
| Valid | Never | 20 | 23.0 | 23.0 | 23.0 |
| | Sometimes | 52 | 59.8 | 59.8 | 82.8 |
| | Always | 15 | 17.2 | 17.2 | 100.0 |
| | Total | 87 | 100.0 | 100.0 | |

Results Q5 Option 10

[Clients budgets were flexible when needed]

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|-----------|-----------|---------|---------------|--------------------|
| Valid | Never | 11 | 12.6 | 12.6 | 12.6 |
| | Sometimes | 64 | 73.6 | 73.6 | 86.2 |
| | Always | 12 | 13.8 | 13.8 | 100.0 |
| | Total | 87 | 100.0 | 100.0 | |

Results Q5 Option 11

[Clients were satisfied with our completion of projects within budget]

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|-----------|-----------|---------|---------------|--------------------|
| Valid | Never | 5 | 5.7 | 5.7 | 5.7 |
| | Sometimes | 42 | 48.3 | 48.3 | 54.0 |
| | Always | 40 | 46.0 | 46.0 | 100.0 |
| | Total | 87 | 100.0 | 100.0 | |

Descriptive statistic – Frequency tables for Section D

“Please select a response that, in your own opinion best describes the Impact that client behaviour has had on your performance on web projects”

Results Q6 Option 1

[As a team we met the output specifications that were made by clients]

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|-----------|-----------|---------|---------------|--------------------|
| Valid | Never | 7 | 8.0 | 8.0 | 8.0 |
| | Sometimes | 27 | 31.0 | 31.0 | 39.1 |
| | Always | 53 | 60.9 | 60.9 | 100.0 |
| | Total | 87 | 100.0 | 100.0 | |

Results Q6 Option 2

[As a team we met the budgets that were agreed with clients]

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|-----------|-----------|---------|---------------|--------------------|
| Valid | Never | 7 | 8.0 | 8.0 | 8.0 |
| | Sometimes | 45 | 51.7 | 51.7 | 59.8 |
| | Always | 35 | 40.2 | 40.2 | 100.0 |

| | | | |
|-------|----|-------|-------|
| Total | 87 | 100.0 | 100.0 |
|-------|----|-------|-------|

Results Q6 Option 3

[As a team we met the time frames that were agreed with clients]

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---------|-----------|-----------|---------|---------------|--------------------|
| Valid | Never | 11 | 12.6 | 12.8 | 12.8 |
| | Sometimes | 42 | 48.3 | 48.8 | 61.6 |
| | Always | 33 | 37.9 | 38.4 | 100.0 |
| | Total | 86 | 98.9 | 100.0 | |
| Missing | System | 1 | 1.1 | | |
| Total | | 87 | 100.0 | | |

Descriptive statistic – Frequency tables for Section E

Statistics

Number of answers this code appears in

| | | |
|---------|---------|-------|
| N | Valid | 96 |
| | Missing | 10 |
| Mode | | 1.00 |
| Range | | 71.00 |
| Minimum | | .00 |
| Maximum | | 71.00 |

Question

| | Frequency | Percent | Valid Percent | Cumulative Percent |
|--|-----------|---------|---------------|--------------------|
|--|-----------|---------|---------------|--------------------|

| | | | | | |
|-------|-----------------------------------|-----|-------|-------|-------|
| Valid | behaviors expected from a clients | 20 | 18.9 | 18.9 | 18.9 |
| | Impact Negatively on performance | 28 | 26.4 | 26.4 | 45.3 |
| | Impact positive on performance | 20 | 18.9 | 18.9 | 64.2 |
| | keep customers happy | 10 | 9.4 | 9.4 | 73.6 |
| | nan | 10 | 9.4 | 9.4 | 83.0 |
| | things expected when delays occur | 18 | 17.0 | 17.0 | 100.0 |
| | Total | 106 | 100.0 | 100.0 | |

Code Name

| | | Frequency | Percent |
|-------|----------------------------|-----------|---------|
| Valid | Attitude and Behaviours | 11 | 20.8 |
| | Budget | 9 | 17.0 |
| | Communication and Feedback | 6 | 11.3 |
| | Expectations | 3 | 5.7 |
| | unvalide | 5 | 9.4 |
| | Quality | 1 | 1.9 |
| | Scope and Requirements | 10 | 18.9 |
| | Time | 8 | 15.1 |
| | Total | 53 | 100.0 |

Code Category

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|----------|-----------|---------|---------------|-----------------------|
| Valid | nan | 10 | 9.4 | 9.4 | 9.4 |
| | NEGATIVE | 32 | 30.2 | 30.2 | 39.6 |
| | NEUTRAL | 26 | 24.5 | 24.5 | 64.2 |
| | POSITIVE | 38 | 35.8 | 35.8 | 100.0 |
| | Total | 106 | 100.0 | 100.0 | |

Report

Number of answers this code appears in

| Code Category | Mean | N | Std. Deviation |
|---------------|---------|----|----------------|
| NEGATIVE | 16.2500 | 32 | 20.11467 |
| NEUTRAL | 2.8462 | 26 | 2.54448 |
| POSITIVE | 16.7895 | 38 | 16.61184 |
| Total | 12.8333 | 96 | 16.56365 |

Number of answers this code appears in

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|-------|-----------|---------|---------------|-----------------------|
| Valid | .00 | 4 | 3.8 | 4.2 | 4.2 |
| | 1.00 | 16 | 15.1 | 16.7 | 20.8 |
| | 2.00 | 10 | 9.4 | 10.4 | 31.3 |
| | 3.00 | 4 | 3.8 | 4.2 | 35.4 |
| | 4.00 | 8 | 7.5 | 8.3 | 43.8 |
| | 5.00 | 4 | 3.8 | 4.2 | 47.9 |
| | 6.00 | 6 | 5.7 | 6.3 | 54.2 |
| | 9.00 | 6 | 5.7 | 6.3 | 60.4 |
| | 10.00 | 4 | 3.8 | 4.2 | 64.6 |

| | | | | |
|----------------|-----|-------|-------|-------|
| 12.00 | 4 | 3.8 | 4.2 | 68.8 |
| 13.00 | 4 | 3.8 | 4.2 | 72.9 |
| 14.00 | 4 | 3.8 | 4.2 | 77.1 |
| 17.00 | 2 | 1.9 | 2.1 | 79.2 |
| 22.00 | 2 | 1.9 | 2.1 | 81.3 |
| 25.00 | 2 | 1.9 | 2.1 | 83.3 |
| 28.00 | 4 | 3.8 | 4.2 | 87.5 |
| 36.00 | 2 | 1.9 | 2.1 | 89.6 |
| 38.00 | 2 | 1.9 | 2.1 | 91.7 |
| 52.00 | 4 | 3.8 | 4.2 | 95.8 |
| 54.00 | 2 | 1.9 | 2.1 | 97.9 |
| 71.00 | 2 | 1.9 | 2.1 | 100.0 |
| Total | 96 | 90.6 | 100.0 | |
| Missing System | 10 | 9.4 | | |
| Total | 106 | 100.0 | | |

Report

Question

| Code Name | Code Category | Number of answers this code | |
|-------------------------|---------------|-----------------------------|---|
| | | appears in | N |
| Attitude and Behaviours | NEGATIVE | 6.00 | 2 |
| | | 14.00 | 1 |
| | | Total | 3 |
| | NEUTRAL | 1.00 | 1 |
| | | 10.00 | 1 |
| | | Total | 2 |
| | POSITIVE | 9.00 | 1 |
| | | 36.00 | 1 |
| | | 52.00 | 2 |
| | | Total | 4 |

| | | | |
|-------------------------------|----------|-------|---|
| | Total | 1.00 | 1 |
| | | 6.00 | 2 |
| | | 9.00 | 1 |
| | | 10.00 | 1 |
| | | 14.00 | 1 |
| | | 36.00 | 1 |
| | | 52.00 | 2 |
| | Total | | 9 |
| Budget | NEGATIVE | 2.00 | 1 |
| | Total | | 1 |
| | NEUTRAL | 2.00 | 1 |
| | Total | | 1 |
| | POSITIVE | 3.00 | 1 |
| | | 10.00 | 1 |
| | Total | | 2 |
| | Total | 2.00 | 2 |
| | | 3.00 | 1 |
| | | 10.00 | 1 |
| | Total | | 4 |
| Budget and Resources | NEGATIVE | 12.00 | 1 |
| | Total | | 1 |
| | NEUTRAL | 2.00 | 1 |
| | | 5.00 | 1 |
| | Total | | 2 |
| | POSITIVE | 12.00 | 1 |
| | Total | | 1 |
| | Total | 2.00 | 1 |
| | | 5.00 | 1 |
| | | 12.00 | 2 |
| | Total | | 4 |
| Client Attitude and Behaviour | NEGATIVE | 71.00 | 1 |
| | Total | | 1 |
| | NEUTRAL | 2.00 | 1 |

| | | | |
|----------------------------|----------|-------|---|
| | | Total | 1 |
| | Total | 2.00 | 1 |
| | | 71.00 | 1 |
| | Total | | 2 |
| Communication and Feedback | NEGATIVE | 28.00 | 1 |
| | Total | | 1 |
| | NEUTRAL | 1.00 | 1 |
| | Total | | 1 |
| | POSITIVE | .00 | 1 |
| | | 6.00 | 1 |
| | | 17.00 | 1 |
| | | 22.00 | 1 |
| | Total | | 4 |
| | Total | .00 | 1 |
| | | 1.00 | 1 |
| | | 6.00 | 1 |
| | | 17.00 | 1 |
| | | 22.00 | 1 |
| | | 28.00 | 1 |
| | Total | | 6 |
| Cost and Budget | NEGATIVE | 13.00 | 1 |
| | Total | | 1 |
| | Total | 13.00 | 1 |
| | Total | | 1 |
| Expectations | NEGATIVE | 4.00 | 1 |
| | Total | | 1 |
| | NEUTRAL | 1.00 | 1 |
| | Total | | 1 |
| | POSITIVE | 5.00 | 1 |
| | Total | | 1 |
| | Total | 1.00 | 1 |
| | | 4.00 | 1 |
| | | 5.00 | 1 |

| | | | | |
|------------------------|----------|----------|------|---|
| | | Total | 3 | |
| Quality | NEGATIVE | 9.00 | 1 | |
| | | Total | 1 | |
| | Total | 9.00 | 1 | |
| | Total | | 1 | |
| Scope | NEGATIVE | 28.00 | 1 | |
| | | Total | 1 | |
| | Total | 28.00 | 1 | |
| | Total | | 1 | |
| Scope and Requirements | NEGATIVE | 1.00 | 1 | |
| | | 2.00 | 1 | |
| | | 54.00 | 1 | |
| | | Total | 3 | |
| | NEUTRAL | 1.00 | 1 | |
| | | 4.00 | 1 | |
| | | Total | 2 | |
| | | POSITIVE | .00 | 1 |
| | 13.00 | | 1 | |
| | 14.00 | | 1 | |
| | 38.00 | | 1 | |
| | Total | 4 | | |
| | Total | .00 | 1 | |
| | | 1.00 | 2 | |
| | | 2.00 | 1 | |
| | | 4.00 | 1 | |
| | | 13.00 | 1 | |
| | | 14.00 | 1 | |
| | | 38.00 | 1 | |
| | | 54.00 | 1 | |
| Total | | 9 | | |
| Time | | NEGATIVE | 1.00 | 1 |
| | | | 9.00 | 1 |
| | | Total | 2 | |

| | | | |
|-------|----------|-------|----|
| | NEUTRAL | 1.00 | 1 |
| | | 3.00 | 1 |
| | | 4.00 | 1 |
| | | Total | 3 |
| | POSITIVE | 1.00 | 1 |
| | | 4.00 | 1 |
| | | 25.00 | 1 |
| | | Total | 3 |
| | Total | 1.00 | 3 |
| | | 3.00 | 1 |
| | | 4.00 | 2 |
| | | 9.00 | 1 |
| | | 25.00 | 1 |
| | | Total | 8 |
| Total | NEGATIVE | 1.00 | 2 |
| | | 2.00 | 2 |
| | | 4.00 | 1 |
| | | 6.00 | 2 |
| | | 9.00 | 2 |
| | | 12.00 | 1 |
| | | 13.00 | 1 |
| | | 14.00 | 1 |
| | | 28.00 | 2 |
| | | 54.00 | 1 |
| | | 71.00 | 1 |
| | | Total | 16 |
| | NEUTRAL | 1.00 | 5 |
| | | 2.00 | 3 |
| | | 3.00 | 1 |
| | | 4.00 | 2 |
| | | 5.00 | 1 |
| | | 10.00 | 1 |
| | | Total | 13 |

| | | |
|----------|-------|----|
| POSITIVE | .00 | 2 |
| | 1.00 | 1 |
| | 3.00 | 1 |
| | 4.00 | 1 |
| | 5.00 | 1 |
| | 6.00 | 1 |
| | 9.00 | 1 |
| | 10.00 | 1 |
| | 12.00 | 1 |
| | 13.00 | 1 |
| | 14.00 | 1 |
| | 17.00 | 1 |
| | 22.00 | 1 |
| | 25.00 | 1 |
| | 36.00 | 1 |
| | 38.00 | 1 |
| | 52.00 | 2 |
| | Total | 19 |
| Total | .00 | 2 |
| | 1.00 | 8 |
| | 2.00 | 5 |
| | 3.00 | 2 |
| | 4.00 | 4 |
| | 5.00 | 2 |
| | 6.00 | 3 |
| | 9.00 | 3 |
| | 10.00 | 2 |
| | 12.00 | 2 |
| | 13.00 | 2 |
| | 14.00 | 2 |
| | 17.00 | 1 |
| | 22.00 | 1 |
| | 25.00 | 1 |

| | | |
|--|-------|----|
| | 28.00 | 2 |
| | 36.00 | 1 |
| | 38.00 | 1 |
| | 52.00 | 2 |
| | 54.00 | 1 |
| | 71.00 | 1 |
| | Total | 48 |

APPENDIX G: GRAMMAR CERTIFICATE



MICON GLOBAL TRAINING SOLUTIONS
Exceeding your expectations

CK 2014/072632/07
Tel: 021 825 0738
Cell: 078 323 1268
E-mail: miconglobaltr@gmail.com
Address: Plumbcrazy House 2nd Floor,
100 Voortekker Road, Salt River, Maitland, 7924

Certificate of Authenticity

CERTIFICATE: MICON010

15 October 2019

To Whom It May Concern

This is to certify that "The Impact of Clients' Expectations and Behaviours on Project Constraints in the Management of Web Development Projects in Cape Town." done by Audrey Nadyne for CPUT has been professionally edited by Kupiwa Gozo of Micon Global Training Solutions (Pty) Ltd.

Document:

| Job Number | Document title |
|------------|---|
| 205 | The Impact of Clients' Expectations and Behaviours on Project Constraints in the Management of Web Development Projects in Cape Town. |

A handwritten signature in black ink, appearing to read 'Barnabas T Zirebwa'.

Barnabas T Zirebwa
Managing Director

APPENDIX H: PERMISSION LETTER



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29th July 2016

Attention: CPUT Ethics Committee

I hereby give permission to Miss Obone Obam Lomba Audrey Nadyne (student number: 211108278) to carry out her interviews, questionnaires or survey in our organisation for her M.Tech Business Administration in Project Management (Register at Cape Peninsula University of Technology).

The subordinates to perform and the target respondents are staff members at Lumico.

Audrey is welcome in our premise and we will be glade to help for her reseach collection of data.

Sincerely

A handwritten signature in black ink, appearing to read "WJB", is written over a horizontal line.

Willem Breytenbach
DIRECTOR

APPENDIX I: RELIABILITY ANALYSIS

1. SECTION A : General Information

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Average interitem covariance: .6023392
Number of items in the scale: 2
Scale reliability coefficient: 0.7876
variable reliability already defined
r(110);
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Interpretation: After assessing the internal consistency with regards to the general information we found $\alpha=0.7876$, meaning the questions related to general information are acceptable.

2. SECTION B: Clients expectations an web Projects Outputs

| Item | Obs | Sign | item-test correlation | item-rest correlation | average interitem covariance | alpha |
|--------------|-----|------|-----------------------|-----------------------|------------------------------|--------|
| resultsq4~n1 | 87 | + | 0.7158 | 0.6360 | .6044373 | 0.8491 |
| resultsq4o~2 | 87 | + | 0.7387 | 0.6628 | .5966408 | 0.8471 |
| resultsq4o~3 | 87 | + | 0.7351 | 0.6589 | .5982179 | 0.8474 |
| resultsq4o~4 | 87 | + | 0.6310 | 0.5553 | .6473136 | 0.8558 |
| resultsq4o~5 | 87 | + | 0.6149 | 0.5195 | .6349996 | 0.8575 |
| resultsq4o~6 | 87 | + | 0.4511 | 0.3397 | .680237 | 0.8690 |
| resultsq4o~7 | 87 | + | 0.6031 | 0.5058 | .638029 | 0.8585 |
| resultsq4o~8 | 87 | + | 0.7037 | 0.6245 | .6116101 | 0.8501 |
| resultsq4o~9 | 87 | + | 0.7935 | 0.7262 | .5732811 | 0.8416 |
| resultsq4~10 | 87 | + | 0.5982 | 0.4892 | .63118 | 0.8602 |
| resultsq4~11 | 87 | + | 0.6011 | 0.4882 | .627304 | 0.8607 |
| Test scale | | | | | .6221137 | 0.8660 |

Interpretation: we ran the consistency test with regards to clients satisfaction on web projects outputs, we included all the 11 attributes, we found $\alpha=0.8660$, this is a high degree of reliability, meaning all 11 attributes related to clients expectations on web project outputs are good or attributes in the test are highly corrected.

3. SECTION C: Cost, Time and specification (Constraints and Clients Behaviour)

| Item | Obs | Sign | item-test correlation | item-rest correlation | average interitem covariance | alpha |
|--------------|-----|------|--------------------------|--------------------------|------------------------------------|--------|
| resultsq5~n1 | 87 | + | 0.4555 | 0.3070 | .0860643 | 0.7503 |
| resultsq5o~2 | 87 | + | 0.5186 | 0.3827 | .0831923 | 0.7408 |
| resultsq5o~3 | 87 | + | 0.5425 | 0.3969 | .0811785 | 0.7393 |
| resultsq5o~4 | 87 | + | 0.5957 | 0.4689 | .0791113 | 0.7298 |
| resultsq5o~5 | 87 | + | 0.5501 | 0.4062 | .0808043 | 0.7380 |
| resultsq5o~6 | 87 | + | 0.4553 | 0.3044 | .0859901 | 0.7508 |
| resultsq5o~7 | 87 | + | 0.6150 | 0.4953 | .0784817 | 0.7266 |
| resultsq5o~8 | 87 | + | 0.5181 | 0.3763 | .0828745 | 0.7418 |
| resultsq5o~9 | 87 | + | 0.6176 | 0.4901 | .0775461 | 0.7267 |
| resultsq5~10 | 87 | + | 0.5129 | 0.3958 | .0847545 | 0.7398 |
| resultsq5~11 | 87 | + | 0.5555 | 0.4245 | .0813389 | 0.7356 |
| Test scale | | | | | .0819397 | 0.7563 |

Interpretation: Reliability analysis found alpha=0.7563 with regards to questions related to cost, time and specification, meaning that items utilised to measure cost, time and specification were acceptable.

4.

| Item | Obs | Sign | item-test correlation | item-rest correlation | average interitem covariance | alpha |
|--------------|-----|------|--------------------------|--------------------------|------------------------------------|--------|
| resultsq6o~1 | 87 | + | 0.7706 | 0.4706 | .1863201 | 0.6173 |
| resultsq6o~2 | 87 | + | 0.8321 | 0.5996 | .1233926 | 0.4435 |
| resultsq6o~3 | 86 | + | 0.7459 | 0.4147 | .2115744 | 0.6928 |
| Test scale | | | | | .1739084 | 0.6826 |

Interpretation: lastly, we measured reliability with regards to clients to the impact of clients behaviour on team performance, we found alpha=0.6826, this implies that items utilised to measure impact of clients behaviour on team performance are questionable.