O‘ZBEKISTON RESPUBLIKASI
OLIY VA O‘RTA MAXSUS TA‘LIM VAZIRLIGI

ISLOM KARIMOV NOMIDAGI
TOSHKENT DAVLAT TEXNIKA UNIVERSITETI

ENGLISH WRITING AND READING FOR ACADEMIC PURPOSES

O‘quv-uslubiy qo‘llanma

Toshkent 2022

УДК 811.111

Kadirova D.X. English writing and reading for academic purposes. O‘quv-uslubiy qo‘llanma. –T.: ToshDTU, 2022. 75 b.

O‘quv-uslubiy qo‘llanma ingliz tilida o‘qish va yozuvga o‘rgatishga qaratilgan qoidalar, texnikaning turli sohalariga oid matnlar, grammatik ma’lumotlar, o‘qish va yozuv bo‘yicha qoida va mashqlarni o‘z ichiga olgan. Texnika yo‘nalishida o‘qituvchi va talabalarga mo‘ljallangan.

Islom Karimov nomidagi Toshkent davlat texnika universiteti ilmiy-uslubiy kengashi tomonidan nashrga tavsiya etilgan.
(10-sonli bayonnoma, 26.06.2022 y).

Taqrizchilar: **Jumanazarova F.R.** - ToshDTU; “Chet tillar” kafedrasi
Ismatov S.S. f.f.n.- O‘zMU, Xorijiy filologiya fakulteti.

Introduction

The study guide is a set of theoretical and practical recommendations for the authors of academic publications in English (bachelors, undergraduates, graduate students and faculty). The focus of the study guide is a productive activity, directed at the development of academic publications.

The study guide is an attempt to synthesize three approaches: stylistic, analytical, and creative. It is intended for use in both full-time and distance learning modes. The main purpose of the study guide is to introduce the element of diversity to the classes of academic writing and reading, to show the multifacetedness and ambiguity of the phenomena studied. The relevance of this study guide lies in the new challenges of scientific communication, stimulated by the integration of Uzbek scholars into the global educational community. The integration involves identification of a niche within which Uzbek scholars can present their own ideas. The presentation of key ideas to the global educational community is based on the language of world science, i.e. English. The proposed study guide serves to simplify the challenges associated with the transition of scientific communication to English speaking tradition.

The object of the study guide is scientific expressions and clichés, characteristic of academic communication in English. The pivotal moment of the guide is the integrative role of the clichés presented in the general outline of the scientific narrative. According to the idea of the authors, the clichés and the expressions included in the publication can act as a catalyst for the development of scientific narrative, to be a necessary support for the development of scientific discourse in English.

Section 1. Composing an Abstract

An abstract is a self-contained and short synopsis that describes a larger work. The abstract is the only part of the paper that is published online and in most conference proceedings. Hence abstract constitutes a very important section of your paper. Also, when you submit your paper to a journal, potential reviewers only see the abstract when invited by an editor to review the manuscript. The abstract should include one or two lines briefly describing the topic, scope, purpose, results, and conclusion of your work. The abstract is indexed by search engines, so make sure that it has all the right words that a fellow researcher in the same field will be using while searching for articles online. Also, make sure it is rich with data and numbers to demonstrate the scientific rigor of your article. Be very clear and confident about your findings. Keep it punchy and straight to the point.

The abstract section of your research paper should include the following:

- Topic
- Purpose
- Scope
- Results
- Conclusion

The following vocabulary [2] is interesting and useful

General introduction

Research on __ has a long tradition

For decades, one of the most popular ideas in __ literature is the idea that __

Recent theoretical developments have revealed that __

A common strategy used to study __ is to __

This research constitutes a relatively new area which has emerged from __

These approaches have been influential in the field because of __

In the past several decades, __ have played an important role in __

There are growing appeals for __

This is the field of study that deals with __

Most of the theories of __ are however focused on explaining __

There are three major theoretical and conceptual frameworks for __

The field has gradually broadened as __

This field of study is sometimes referred as __

This has been widely adopted in the field of __

This thesis considers the field of __ as the main subject of its study

One of the major topics to be investigated in this field is __

This is now a mature field which is now being spun out into commercial applications __

This field is maturing, with a wealth of well-understood methods and algorithms __

This field closely follows the paradigm of __

The field has met with great success in many problems __

The field only really took off in the late __ as it became more accessible to __

This is not particularly new and has been used for many years in the field of __

This field closely follows the paradigm of __

Widely considered to be a good way to __

This has been widely adopted in the field of __

This is more widely used at the time of __

This phenomenon has been widely observed

A common technique is to __

This is a technique common in __

There are several common kinds of __

Rewrite the following abstracts to make them more stylistically attractive

Abstract 1

The article describes a step-by-step strategy for designing a universal comprehensive vision of a vast majority of financial research topics. The strategy is focused around the analysis of the retrieval results of the word processing system Serelex which is based on the semantic similarity measure. While designing a research topic, scientists usually employ their individual background. They rely in most cases on their individual assumptions and hypotheses. The strategy, introduced in the article, highlights the method of identifying components of semantic maps which can lead to a better coverage of any scientific topic under analysis. On the example of the research field of finance we show the practical and theoretical value of semantic similarity measurements, i.e. a better coverage of the problems which might be included in the scientific analysis of financial field. At the designing stage of any research scientists are not immune to an insufficient and, thus, erroneous spectrum of problems under analysis. According to the famous maxima of St. Augustine, 'Fallor ergo sum', the researchers' activities are driven along the way from one mistake to another. However, this might not be the case for the 21st century science approach. Our strategy offers an innovative methodology, according to which the number of mistakes at the initial stage of any research may be significantly reduced. The second stage of our experiment was driven towards analyzing the correlation between the language and income level of the respondents. The article contains the information about data processing.

Abstract 2

The focus of this paper is the concept of the frontier as a three-fold model, incorporating aspects of locality, spirit, and language. The paper describes modern visions of the frontier myth based on the data obtained from big data resources, putting forward the idea that all three dimensions can be considered as multi-faceted units in transition. The primary stress of the article lies within the domain of the spiritual frontiers of a nation, arguing that geographical frontiers do not necessarily coincide with the spiritual edges of a nation. The Uzbek spiritual frontier region is set

against the background of the German Schwarzwald (Black Forest) and the North American “Wild West” frontiers within the time span of the mid-nineteenth to end of the twentieth century. The author builds a linguistic taxonomy of the concept of “frontier” in German, Uzbek and English based upon the methodologies of linguistic philosophy. The paper is mainly based on ethnographic descriptions and linguistic data analysis. The conclusion of the article is the observation that the German linguistic representations of the concept of “frontier” are predominately based on technical and practical applications in such branches of science as thermodynamics and the mathematical field of topology. Meanwhile, the German Schwarzwald frontier myth is treated as an imaginary linear border between the actual world and the world of spirits. However, Uzbek, and North American concepts of “frontier” are culturally bound and present an area, rather than a linear representation. The article is a point of interest for both theoretical and practical applications. Theoretically speaking, the research offers new directions of exploring frontiers, based on linguistic data, obtained from online linguistic corpora. Practically speaking, the author describes new approaches to frontier identification which may be useful in the tourism industry.

Section 2. Composing an Introduction

Introduction section comes after the abstract. Introduction section should provide the reader with a brief overview of your topic and the reasons for conducting research. The introduction is a perfect place to set the scene and make a good first impression. Regarding word count, introduction typically occupies 10–15 % of your paper, for example, if the total word count of your paper is 3000, then you should aim for an introduction of around 600 words. It is often recommended that the introduction section of the paper is written after finishing the other sections of the paper. This is because it is difficult to figure out what exactly to put in the introduction section of the paper until you have seen the big picture. Sound very confident about your chosen subject area and back up your arguments with

appropriate references. After reading the introduction, the reader must have a clear idea of what to expect from the rest of your research paper.

The introduction section of your research paper should include the following:

- General introduction
- Problem defi nition
- Gaps in the literature
- Problems solution
- Study motivation
- Aims & objectives
- Signifi cance and advantages of your work

Problem definition

This seems to be a common problem in __

This leads to myriad problems in __

The main problem is that __

There is a further problem with __

One primary problem with __ is that __

The methods are not without their problems as will be discussed in __

The foremost problems are the facts that __

This makes up for the problem of __

This seems to be a common problem in __

This is a complex problem and to simplify it requires __

A challenging problem which arises in this domain is __

These problems are difficult to handle __

This is typically a complex problem __

A well-known problem with __ is that it does not take into account the __

One of the problems is that it considers only the __

The key problem with this technique is __

It is usually an ill-posed problem in the case of __

This problem is well-posed and does not require to impose __

This appears as a more straightforward problem compared to the __

This turns out to be even more problematic because __

The problem with such an implementation is that __

This poses some problems when carrying out the __

This problem has attracted more attention in the field of __

This is a basic chicken-and-egg problem because __

Unfortunately, this approach results in problems related to __

These constraints make the problem difficult to __

Most of the research in this field is aimed at solving this problem.

This remains an open problem in the area.

This problem has received substantial interest.

These examples highlight the problem that __

The main practical problem that confronts us is __

Gaps in literature

There is no previous research using __ approach.

As far as we know, no previous research has investigated __

There has been less previous evidence for __

Other studies have failed to __

To our knowledge, no study has yielded __

No study to date has examined __

Only a few studies have shown __

However, __ has rarely been studied directly.

Moreover, few studies have focussed on __

In particular no study, to our knowledge, has considered __

Problems solution

One way to overcome these problems is to __

There are many alternative methods are available for solving these problems.

In order to rectify the problem of __

A solution to this problem is proposed in __

One approach to solve this problem involves the use of __

An alternative approach to the problem is __

This can be applied to solve these problems.

A number of works have shown that this problem can be overcome by using __

A large number of alternative approaches have been developed over the last few decades to __

To overcome this problem, in the next section we demonstrate __

One way to overcome this problem is to __

To overcome this problem, some approaches have been made __

One way of recovering from this problem could be to __

This has been proposed to surmount the problems caused by __

A different approach to the traditional problem is given in __

A whole range of different approaches to the problem are available.

These techniques have potential to solve contemporary problems in __

We should tailor specific solutions to specific problems __

The standard solution to the problem is based on __

The solution proposed here addresses only the problem of __

There are techniques that have been developed to solve this problem __

This problem is usually overcome by __

There have been several attempts to solve the problem __

There exist many methods for dealing with this problem __

Broadly speaking, the problem can be addressed by __

One of the simplest ways of tackling this problem is __

This problem has been largely studied and many viable solutions have been found.

In general, this problem can be tackled in two different ways.

Other approaches have been shown to cope with the problem more efficiently.

We will review the main approaches to solve this problem.

Recently, a more general solution has been proposed for this problem.

Both these works provide a solution to the problem.

Recent methods focus on overcoming the problems by proposing different schemes for __

This strategy is not uncommon in this kind of problems.

We can apply our algorithm to solve this difficult problem.

This is how the problem can be tackled __

We have developed this generic method to solve a variety of problems.

We will now demonstrate our method on some specific problems.

Here we solve several problems simultaneously.

We have undergone a rethinking of the problem by __

A possible solution to the problem at hand is __

It is clear that the problem could be easily tackled by __

Study motivation

It is of interest to know whether __ still hold true.

It would be of special interest to __

We therefore analyzed __ and investigated whether __

For this study, it was of interest to investigate __

We investigated whether __ can be partly explained by __

To examine the impact of __, we tested __

We have investigated the effect of __

We characterize different aspects of __

One way to investigate __ was to __

A new approach is therefore needed for __

To illuminate this uncharted area, we examined __

Aims & objectives

The aim is to develop more sophisticated methods for __

The aim of this work is to develop __

The aims in this chapter are twofold: First __. Second __

For our first goal, we focus on two problems __

The aim here is to investigate __

The overall goal of this work was to __

This project aims to develop an overarching framework to __

The aim of the experiment is to compare __

The ultimate goal is to produce a __

The overall goal of this thesis was to pursue __

After defining the problem we explain the goals of the thesis.

With this aim in mind, in this paper we present a new method for __

Our research aims at finding a solution for this challenging problem of __

There is no overall goal, apart from __

We examine some previous work and propose a new method for __

There are too many simultaneous goals making it difficult to __

One of the major aims of this work was to create __

The main objective is to investigate methods for improving __

The objectives can be restated in the light of __

The objective is to devise and implement a system for __

The objectives were partially met by developing a method to __

The objective is to demonstrate the feasibility of __

One of the objectives is to improve the __

Significance and advantages of your work

This thesis documents several key contributions made to the fields of __

This thesis has made a number of significant contributions to the field of __

The contributions made here have wide applicability.

The contributions made should be of wide interest.

The first main contribution proposed in this field is a __

The contributions of this work are presented as follows: __

The main achievements, including contributions to the field can be summarised

as follows: __

We summarize the main contributions of this thesis.

The key contribution of this work is the solution it provides __

It has numerous advantages as explained here __

It has significant benefits in terms of __

There is a clear advantage in following the methods of __

This has particular advantages over other __

All of these advantages make it particularly valuable in __

One of the primary benefits of this algorithm is __

This gives a significant advantage because __

These point out the advantages and practicability of __

One of the key benefits of the algorithm is __

The main advantage compared to previous method is __

This present some practical advantages.

The main advantage is the simplified pattern.

One practical advantage of the method is that it can be used in __

The advantage becomes all the more significant when __

In comparison with other techniques, this method has the advantage of __

The most important advantage of this method is that it can perform very well in __

It yielded significant speed advantages when __

The benefit of using the __ is expected to __

The main advantage is that we are able to __

To give some idea of the benefits of this method __

The additional advantage of using this method is that it results in __

This is an important advantage of this algorithm __

These are the main advantages of this method

The importance of the topic for the world

N is fundamental to __

N has a pivotal role in __

N is frequently prescribed for __

N is fast becoming a key instrument in __

N plays a vital role in the metabolism of __

N plays a critical role in the maintenance of __

Ns have emerged as powerful platforms for __

N is essential for a wide range of technologies.

N can play an important role in addressing the issue of __

Ns are the most potent anti-inflammatory agents known.

There is evidence that N plays a crucial role in regulating __

N is a common condition which has considerable impact on __

In the new global economy, N has become a central issue for __

Evidence suggests that N is among the most important factors for __

N is important for a wide range of scientific and industrial processes.

Ns are one of the most widely used groups of antibacterial agents and __

There is a growing body of literature that recognises the importance of __

N is an important component in the climate system, and plays a key role in Y.

In the history of development economics, N has been thought of as a key factor in __

Ns are one of the most widely used groups of Y and have been extensively used for __

The importance of the topic for the discipline

A key aspect of X is __

X is of interest because __

X is a classic problem in __

A primary concern of X is __

X is a dominant feature of __

X is an important aspect of __

X is a fundamental property of __

The concepts of X and Y are central to __

X is at the heart of our understanding of __

Investigating X is a continuing concern within __

X is a major area of interest within the field of __

X has been studied by many researchers using __

X has been an object of research since the 1960s.

X has been the subject of many classic studies in __

X has been instrumental in our understanding of __

The theory of X provides a useful account of how __

Central to the entire discipline of X is the concept of __

X is an increasingly important area in applied linguistics.

The issue of X has received considerable critical attention.

X has long been a question of great interest in a wide range of fields

Specifying the timeframe

Recently, there has been renewed interest in __

Traditionally, Xs have subscribed to the belief that __

One of the most important events of the 1970s was __

In recent years, there has been an increasing interest in __

Recent developments in X have heightened the need for __

The last two decades have seen a growing trend towards __

Recently, researchers have shown an increased interest in __

Over the past century, there has been a dramatic increase in __

Recent trends in X have led to a proliferation of studies that __

X proved an important literary genre in the early Y community.

The past decade has seen the rapid development of X in many __

Since it was reported in 2005, X has been attracting a lot of interest.

Recently, a considerable literature has grown up around the theme of __

Recent developments in the field of X have led to a renewed interest in __

The past thirty years have seen increasingly rapid advances in the field of __

The changes experienced by X over the past decade remain unprecedented.

In light of recent events in X, it is becoming extremely difficult to ignore the existence of __

Establishing the importance of the problem

X is a major problem in __

Of particular concern is __

One of the main obstacles __

One of the greatest challenges __

A key issue is the safe disposal of __

The main disadvantage of X is that __

X is associated with increased risk of __

X impacts negatively upon a range of __

X is a common disorder characterised by __

It is now well established that X can impair __

X has led to the decline in the population of __

X is a growing public health concern worldwide.

The main challenge faced by many researchers is the __

X is one of the most frequently stated problems with __

Lack of X has existed as a health problem for many years.

X is a major environmental problem, and the main cause of __

Xs are one of the most rapidly declining groups of insects in __

X is the leading cause of death in western-industrialised countries.

Exposure to X has been shown to be related to adverse effects in __

There is increasing concern that some Xs are being disadvantaged __

There is an urgent need to address the safety problems caused by __

	X may cause __ X is limited by __

However,	X suffers from __ X is too expensive to be used for __ X has accentuated the problem of __ the performance of X is limited by __ X could be a contributing factor to __ the synthesis of X remains a major challenge. X can be extremely harmful to human beings. research has consistently shown that X lacks __ a major problem with this kind of application is __ the determination of X is technically challenging. current methods of X have proven to be unreliable. these rapid changes are having a serious effect on __ X can be adversely affected under certain conditions. observations have indicated a serious decline in the population of __

Referring to previous work

Recent evidence suggests that __

Extensive research has shown that __

Studies of X show the importance of __

It has previously been observed that __

Several attempts have been made to __

Previous research has established that __

Data from several studies suggest that __

Recent work by historians has established that __

Previous research comparing X and Y has found __

The existing body of research on X suggests that __

There is a growing body of literature that recognises __

Several theories on the origin of X have been proposed.

Existing research recognises the critical role played by __

It is now well established from a variety of studies, that __

Recently investigators have examined the effects of X on Y.

Surveys such as that conducted by Smith (1988) have shown that __

Factors found to be influencing X have been explored in several studies.

A number of cross-sectional studies suggest an association between X and Y __

Studies over the past two decades have provided important information on __

A considerable amount of literature has been published on X. These studies __

Identifying a controversy within the field of study

A much debated question is whether __

One major issue in early X research concerned __

To date there has been little agreement on what __

The issue has grown in importance in light of recent __

One of the most significant current discussions in X is __

In the literature on X, the relative importance of Y is debated.

One observer has already drawn attention to the paradox in __

Questions have been raised about the use of animal subjects in __

In many Xs, a debate is taking place between Ys and Zs concerning __

Debate continues about the best strategies for the management of __

This concept has recently been challenged by X studies demonstrating __

The debate about X has gained fresh prominence with many arguing that __

Scholars have long debated the impact of X on the creation and diffusion of __

More recently, literature has emerged that offers contradictory findings about __

One major theoretical issue that has dominated the field for many years concerns __

The controversy about scientific evidence for X has raged unabated for over a century.

The issue of X has been a controversial and much disputed subject within the field of __

The causes of X have been the subject of intense debate within the scientific community.

In the literature on X, the relative importance of Y has been subject to considerable discussion.

Identifying the lack of previous research

There is little published data on __

No previous study has investigated X.

The use of X has not been investigated.

There has been no detailed investigation of __

There has been little quantitative analysis of __

Data about the efficacy and safety of X are limited.

Up to now, far too little attention has been paid to __

A search of the literature revealed few studies which __

The impact of X on Y is understudied, particularly for __

Few studies have investigated X in any systematic way __

In addition, no research has been found that surveyed __

So far, however, there has been little discussion about __

So far, very little attention has been paid to the role of X.

Surprisingly, the effects of X have not been closely examined.

In contrast to X, there is much less information about effects of __

A systematic understanding of how X contributes to Y is still lacking.

Despite the importance of X, there remains a paucity of evidence on __

There have been no controlled studies which compare differences in __

To date, the problem has received scant attention in the research literature

To date, there are few studies that have investigated the association

between __

While Whilst Although	some research has been carried out on X,	no single study exists which __ no studies have been found which __ no controlled studies have been reported. only two studies have attempted to investigate __ there have been few empirical investigations into __ there is still very little scientific understanding of __ the mechanism by which __ has not been established

Identifying a knowledge gap in previous research

It is still not known whether __

__ much less is known about X.

The nature of X remains unclear.

Currently, there are no data on __

What is less clear is the nature of __

Very little is currently known about X in __

Research to date has not yet determined __

What is not yet clear is the impact of X on __

There is still uncertainty, however, whether __

The response of X to Y is not fully understood.

Causal factors leading to X remain speculative.

The neurobiological basis of X is poorly understood.

Little is known about X and it is not clear what factors __

To date, only a limited number of Xs have been identified.

The mechanisms that underpin X are not fully understood.

Much uncertainty still exists about the relationship between __

This indicates a need to understand the various perceptions of X that exist

among __

It is now well established that __ However, the influence of X on Y has remained unclear.

However,	very little is known about X in __ few studies have investigated __ the nature of X remains unclear. much less is known about how __ the use of X has not been investigated. far too little attention has been paid to __ the behaviour of X has not yet been investigated. the evidence for this relationship is inconclusive __ much uncertainty still exists about the relation between __ there have been no controlled studies which compare differences in __

Stating the focus, aim, or argument of a short paper

In this paper, I argue that __

This paper attempts to show that __

The central thesis of this paper is that __

In the pages that follow, it will be argued that __

In this essay, I attempt to defend the view that __

The aim of this essay is to explore the relationship between __

The purpose of this paper is to review recent research into the __

This paper	argues that __ gives an account of __ discusses the case of __ analyses the impact of __ attempts to show that __ contests the claim that __ provides an overview of __ reviews the evidence for __ reports on a study which __ traces the development of __ explores the ways in which __ assesses the significance of __

	highlights the importance of __ considers the implications of __ critically examines the view that __ proposes a new methodology for __ examines the relationship between __ compares the different ways in which __ investigates the factors that determine __ describes the design and implementation of __

Stating the purpose of the current research

The specific objective of this study was to __

An objective of this study was to investigate __

This thesis will examine the way in which the __

This study set out to investigate the usefulness of __

This dissertation seeks to explain the development of __

This case study seeks to examine the changing nature of __

The objectives of this research are to determine whether __

This prospective study was designed to investigate the use of __

This research examines the emerging role of X in the context of __

This study systematically reviews the data for…, aiming to provide __

Drawing upon two strands of research into X, this study attempts to __

This thesis intends to determine the extent to which __ and whether __

This dissertation aims to unravel some of the mysteries surrounding __

This study therefore set out to assess the effect of X __, and the effect of __

The main aim of this study is to investigate the differences between X and Y.

Part of the aim of this project is to develop software that is compatible with __

There are two primary aims of this study: 1. To investigate __ 2. To ascertain __

This study seeks to obtain data which will help to address these research gaps.

One purpose of this study was to assess the extent to which these factors were __

The purpose of this investigation is to explore the relationship between X and Y.

Describing the research design and the methods used

Data for this study were collected using __

Five works will be examined, all of which __

This investigation takes the form of a case-study of the __

This study was exploratory and interpretative in nature.

This study uses a qualitative case study approach to investigate __

The research data in this thesis is drawn from four main sources: __

The approach to empirical research adopted for this study was one of __

This dissertation follows a case-study design, with in-depth analysis of __

By employing qualitative modes of enquiry, I attempt to illuminate the __

Qualitative and quantitative research designs were adopted to provide __

Both qualitative and quantitative methods were used in this investigation.

A holistic approach is utilised, integrating X, Y and Z material to establish __

The study was conducted in the form of a survey, with data being gathered via __

The methodological approach taken in this study is a mixed methodology based on __

A combination of quantitative and qualitative approaches was used in the data analysis.

Explaining the significance of the current study

This is the first study to __

This study provides new insights into __

This work will generate fresh insight into __

The study offers some important insights into __

Understanding the link between X and Y will help __

This is the first study to undertake a longitudinal analysis of __

The present research explores, for the first time, the effects of __

The importance and originality of this study are that it explores __

The findings should make an important contribution to the field of __

Characterisation of X is important for our increased understanding of __

It is hoped that this research will contribute to a deeper understanding of __

This study aims to contribute to this growing area of research by exploring __

This project provided an important opportunity to advance the understanding of __

Therefore, this study makes a major contribution to research on X by demonstrating __

There are several important areas where this study makes an original contribution to __

The experimental work presented here provides one of the first investigations into how __

Describing the limitations of the current study

The thesis does not engage with __

It is not the task of this paper to examine __

This study is unable to encompass the entire __

Establishing X is beyond the scope of this study.

It is beyond the scope of this study to examine the __

A full discussion of X lies beyond the scope of this study.

The reader should bear in mind that the study is based on __

Another potential problem is that the scope of my thesis may be too broad.

Due to practical constraints, this paper cannot provide a comprehensive review of __

Giving reasons for personal interest in the research

I became interested in Xs after reading __

My interest in this area developed while I was __

I have worked closely with X for many years and __

My personal experience of X has prompted this research.

My main reason for choosing this topic is personal interest.

It is my experience of working with X that has driven this research.

This project was conceived during my time working for X. As a medical advisor, I witnessed __

Outlining the structure of the paper or dissertation

The first section of this paper will examine __

This paper begins by __ It will then go on to __

My thesis is composed of four themed chapters.

The essay has been organised in the following way.

The remaining part of the paper proceeds as follows: __

The main issues addressed in this paper are: a), b) and c).

This paper first gives a brief overview of the recent history of X.

This paper has been divided into four parts. The first part deals with __

The third chapter is concerned with the methodology used for this study.

The overall structure of the study takes the form of six chapters, including __

Chapter Four analyses the results of interviews and focus group discussions undertaken during __

Chapter Two begins by laying out the theoretical dimensions of the research, and looks at how __

The fourth section presents the findings of the research, focusing on the three key themes that __

Explaining key terms used in the current work

Throughout this paper, the term ‘X’ will refer to __

The term ‘X’ will be used in this thesis to refer to __

Historically, the term ‘X’ has been used to describe __

It is necessary here to clarify exactly what is meant by __

The phrase ‘X’ will be used in this study to describe the __

According to Smith (2002), X can be defined as follows: ‘__’

In this article, the abbreviation XYZ will be used to refer to __

Throughout this dissertation, the term ‘X’ will be used to refer to __

The term ‘X’ is a relatively new name for __, commonly referred to as __

In this essay, the term ‘X’ will be used in its broadest sense to refer to all __

In this dissertation, the terms ‘X’ and ‘Y’ are used interchangeably

to mean __

While a variety of definitions of the term X have been suggested, this

paper will use the definition first suggested by Smith (1968) who saw it as __

Rewrite the following introductions to make them more stylistically attractive

Introduction 1

The experimental design of our research was based on the assumption that a better semantic coverage of money issues can lead us to new fields of further research. Although the retrieval of such notions as “credit card”, “banking”, “interest rate”, “asset” was predictable, the inclusion of such notions as “information” and “telecommunication” led us to the conclusion that in our research we might specify certain communicative areas of financial policies of the present and the future. Thus, we decided to conduct a research of communicative policy of the NDB (BRICS Development Bank).

Section 3. Composing Literature Review

The literature review should clearly demonstrate that the author has a good knowledge of the research area. Literature review typically occupies one or two passages in the introduction section. A wellwritten literature review should provide a critical appraisal of previous studies related to the current research area rather than a simple summary of prior works. The author shouldn't shy away from pointing out the shortcomings of previous works. However, criticising other's work without any basis can weaken your paper. This is a perfect place to coin your research question and justify the need for such a study. It is also worth pointing out towards the end of the review that your study is unique and there is no direct literature addressing this issue. Add a few sentences about the significance of your research and how this will add value to the body of knowledge.

The literature review section of your research paper should include the following:

- Previous literature
- Limitations of previous research
- Research questions
- Research to be explored

Previous literature

The literature review shows that __

Previous research showed __

Seminal contributions have been made by __

A series of recent studies has indicated that __

Several theories have been proposed to __, some focusing on __, others on __

There has been numerous studies to investigate __

This has been used in several studies to assess __

Previous studies have shown __

Several studies suggest that __

This has also been explored in prior studies by __

Prior research suggests that __

Previous studies have emphasized __

The majority of prior research has applied __

Most early studies as well as current work focus on __

For instance, the following studies were conducted on __

Studies of __are well documented, it is also well acknowledged that __

A number of authors have recognized __

Some authors have also suggested that __

Some authors have driven the further development of __

This has been discussed by a great number of authors in literature.

For example, research has provided evidence for __

The authors bring some information about the background of the problem, __

As has been previously reported in the literature, __

A large number of existing studies in the broader literature have examined __

The literature review shows that __

There exists a considerable body of literature on __

In short, the literature pertaining to __ strongly suggests that __

Over time, an extensive literature has developed on __

This section presents a review of recent literature on __

This paper begins with a short review of the literature regarding the __

Several methods are reported in the literature to address this issue.

There is a wide choice of __ available in the literature.

This section reviews the literature related to __

It was reported in literature that __

A recent study by __ concluded that __

In the light of reported __ it is conceivable that __

The method introduced by __ has the advantage that __

One method employed by __ is __

A more comprehensive description can be found in __

For example, recent research suggests that __

This was successfully established as described by __

The author employed a __ methodology which prescribes the use of __

Limitations of previous research

A number of questions regarding __ remain to be addressed.

A closer look to the literature on __, however, reveals a number of gaps and shortcomings.

This question has previously never been addressed because__

Most studies have relied on __

Previous studies by __ cannot be considered as conclusive because __

Previous studies have almost exclusively focused on __

This has been previously assessed only to a very limited extent because __

In the present studies __ were constrained to __

In previous studies were limited to __

Although results appear consistent with prior research, they appear inconsistent with __

These are previously unstudied because __

As far as we know, no previous research has investigated __

Moreover, although research has illuminated __ no study to date has examined __

Despite decades of research, this continues to be debated among __

This section points out some of the problems encountered in the extant research.

Although there are many studies, the research in __ remains limited.

However, the existing research has many problems in representing __

The literature on __ is less consistent

Historically, there has been a great deal of confusion in the literature regarding __

This approach remains briefly addressed in the literature.

These are rarely analyzed in the literature as __

There are key questions and notions that are still not discussed in the literature__

This is not clearly presented in the literature because __

This paper addresses the need for __, so far lacking in the scientific literature.

To fill this literature gap, this paper identifies __

Only a few works in literature demonstrate __

Although studies have been conducted by many authors, this problem is still insufficiently explored.

To our knowledge, no prior studies have examined __

However, the existing research has many problems in __

Therefore, important issue in the literature is __

However, we argue that previous literature suffers from certain weaknesses:__

Previous research can only be considered a first step towards a more profound understanding of __

The previous studies reveal that __ are usually the most problematic to __

Research questions

More specific research questions will be introduced and investigated in __

A further question is whether __

Finally, another promising line of research would be __

The study addresses several further questions on __

Some of the interesting questions in this context are __

In order to address the questions outlined above, we report here __

These questions are of central interest as much recent research in __

Furthermore, __ is arguably an important question to be addressed.

The question now is how __ can be used to explain __

Study addresses the research question __

In order to properly address this question, we __

An important question associated with __ is __

A critical open question is whether __

A still unsolved question is whether __

This remains an open question as __

This question has previously never been addressed because __

This study offers a test of __ research question

Study addresses the research question __

Even in general __ research strategies is needed to explain __

The researcher should be interested here in __

Many questions remain unanswered __

There are some potentially open questions about the validity of __

The question that then naturally arises is __

The question then becomes how best to define__

This was an important question to study as __

Research to be explored

A more systematic and theoretical analysis is required for __

As the authors note earlier, more work is necessary to __

Additional studies to understand more completely the key tenets of __ are required.

The unexpected findings signal the need for additional studies to understand more about __

This paper addresses __, so far lacking in the scientific literature.

A new approach is therefore needed for __

One of the tough challenges for all researchers in this domain is __

General comments on the relevant literature

The literature on X has highlighted several __

Different theories exist in the literature regarding __

More recent attention has focused on the provision of __

There are relatively few historical studies in the area of __

A large and growing body of literature has investigated __

Much of the literature since the mid-1990s emphasises the __

Much of the current literature on X pays particular attention to __

There is a large volume of published studies describing the role of __

The existing literature on X is extensive and focuses particularly on __

There is a relatively small body of literature that is concerned with __

The generalisability of much published research on this issue is problematic.

A considerable amount of literature has been published on X. These studies __

Previous research findings into X have been inconsistent and contradictory (Smith, 1996; …).

The academic literature on X has revealed the emergence of several contrasting themes.

Previous research: a historical perspective

Research into X has a long history.

For many years, this phenomenon was surprisingly neglected by __

Only in the past ten years have studies of X directly addressed how __

Prior to the work of Smith (1983), the role of X was largely unknown.

Over the past decade, most research in X has emphasized the use of __

In recent years, there has been an increasing amount of literature on __

Early examples of research into X include __ (Smith, 1962; Jones, 1974).

During the past 30 years, much more information has become available on __

The first serious discussions and analyses of X emerged during the 1970s with __

Over the past two decades, major advances in molecular biology have allowed __

Historically, research investigating the factors associated with X has focused on __

It is only since the work of Smith (2001) that the study of X has gained momentum.

The construct of X was first articulated by Smith (1977) and popularised in his book: __

Around the early 1960s, small-scale research and case studies began to emerge linking __

It was not until the late 1960s that historians considered X worthy of scholarly attention.

Awareness of X is not recent, having possibly first been described in the 5th century BCE by __

Previous research: methodological approaches

Most research on X has been carried out in __

Most researchers investigating X have utilised __

Using this approach, researchers have been able to __

Several systematic reviews of X have been undertaken.

The vast majority of studies on X have been quantitative.

What we know about X is largely based on observational studies.

There are a number of large cross-sectional studies which suggest __

Much of the previous research on X has been exploratory in nature.

Much of the X research has focused on identifying and evaluating the __

What we know about X is largely based upon empirical studies that investigate how __

Publications that concentrate on X more frequently adopt a historical or chronological approach __

Previous research: area investigated

To date, several studies have investigated __

A number of studies have begun to examine __

Various studies have assessed the efficacy of __

Researchers attempted to evaluate the impact of __

A great deal of previous research into X has focused on __

Several studies have used longitudinal data to examine __

Previous studies have explored the relationships between X and Y.

Twenty cohort study analyses have examined the relationship between __

A number of authors have considered the effects of __ (Smith, 2003; Jones, 2004).

At least 120 case-control studies worldwide have examined the relationship between __

Numerous studies have attempted to explain __ (for example, Smith, 1996; Jones, 1998; …).

Previous research:

what has been established or proposed

Several lines of evidence suggest that __

Previous research has established that __

Data from several studies suggest that __

It is now well established from a variety of studies that __

A number of studies have postulated a convergence between __

Surveys such as that conducted by Smith (1988) have shown that __

Many recent studies (e.g. Smith, 2001; Jones, 2005) have shown that __

Traditionally, it has been argued that __ (e.g. Smith, 1960; Jones, 1972).

Several biographies of Brown have been published. Smith (2013) presents __

In previous studies on X, different variables have been found to be related to __

Many historians have argued that __ (e.g. Jones, 1987; Johnson, 1990; Smith, 1994).

There is a consensus among social scientists that __ (e.g. Jones, 1987; Johnson, 1990; …).

Data from several sources have identified the increased X and Y associated with obesity.

It has been demonstrated that a high intake of X results in damage to __ (Smith, 1998; …).

There is a large number of published studies (e.g., Smith, 2001; Jones, 2005) that describe __

Some cross-sectional studies suggest an association between X and Y (Smith, 2004; Jones, 2005).

It has been suggested that levels of X are independent of the size of the Y (Smith *et al*., 1995).

It has conclusively been shown that X and Y increase Z (Smith *et al*., 1999; Jones, 2001; …).

To date, Thus far, Up to now,	several studies previous studies a number of studies	have	used __ found __ reported __ shown that __ indicated that __ linked X with Y. suggested that __ demonstrated that __ begun to examine the use of __ confirmed the effectiveness of __ revealed a correlation between X and Y. highlighted factors that are associated with __

Stating what is currently known about the topic

X, Y and Z appear to be closely linked (Smith, 2008).

X appears to be positively related to both Y and Z (Smith, 2007).

X is a principal determining factor of Y (Smith, 2005; Jones, 2013).

X is one of the most intense reactions following CHD (Lane, 2003).

There is an unambiguous relationship between X and Y (Rao, 1998).

X is significantly reduced during the first months of __ (Smith, 2000; Jones, 2006).

X has been found to oppose the anti-inflammatory actions of Y on Z (Alourfi, 2004).

GM varieties of maize are able to cross-pollinate with non-GM varieties (Smith, 1998; O'Brien; …).

A relationship exists between an individual's working memory and their ability to __ (Jones, 2002).

Reference to a previous investigation: researcher prominent

Smith (1999)	showed that reducing X to 190 °C decreased __ (see Figure 2).
	demonstrated that when the maximum temperature is exceeded __
	found that as levels of literacy and education of the population rise __
Jones *et al.* (2001)	compared the rate of __
	labelled these subsets as __
	measured both components of the __
	used a survey to assess the various __
	identified parents of disabled children as __
	set up a series of virtual experiments using __
	examined the flow of international students __
	carried out a number of investigations into the __
	studied the effects of X on unprotected nerve cells.
	analysed the data from 72 countries and concluded that __
	interviewed 250 undergraduate students using semi-structured __
	performed a similar series of experiments in the 1960s to show that __
	reviewed the literature from the period and found little evidence for this __
	conducted a series of trials in which he mixed X with different quantities of __
	investigated the differential impact of formal and nonformal education on __

Reference to a previous investigation: time prominent

In 1959, a seminal article was published entitled __

In 1889, Brown performed a bilateral ablation of the __

In 1859, the publication of X had a major impact on __

In 1965, Jones published his major historic survey of __

In 1975, Smith *et al.* published a paper in which they described __

In 1984, Jones *et al.* made several amino acid esters of X and evaluated them as __

In 1981, Smith and co-workers demonstrated that X induced in vitro resistance to __

In 1990, Patel *et al.* demonstrated that replacement of H2O with heavy water led to __

In 1990, Al-Masry *et al.* reported a new and convenient synthetic procedure to obtain __

Thirty years later, Smith (1974) reported three cases of X which __

In the 1950s, Gunnar Myrdal pointed to some of the ways in which __

Following World War I, Fleming actively searched for anti-bacterial agents.

Almost 20 years ago, Jones (1985) formulated his X theory, centred around __

Reference to a previous investigation: investigation prominent

One longitudinal study found that __

A seminal study in this area is the work of __

One study by Smith (2014) examined the trend in __

A recent study by Smith and Jones (2012) involved __

A qualitative study by Smith (2003) described how __

A recent systematic literature review concluded that __

Preliminary work on X was undertaken by Jones (1992).

A longitudinal study of X by Smith (2012) reports that __

A key study comparing X and Y is that of Smith (2010), in which __

The first systematic study of X was reported by Smith *et al.* in 1986.

Detailed examination of X by Smith and Jones (1961) showed that __

Analysis of the genes involved in X was first carried out by Smith *et al.* (1983).

A significant analysis and discussion on the subject was presented by Smith (1988).

The study of the structural behaviour of X was first carried out by Jones *et al.* (1986).

A small scale study by Smith (2012) reached different conclusions, finding no increase in __

The study by Jones (1990) offers probably the most comprehensive empirical analysis of __

In an analysis of X, Smith *et al*. (2012) found __

In a follow-up study, Smith *et al*. (2009) found that __

In an investigation into X, Smith *et al.* (2012) found __

In a study investigating X, Smith (2004) reported that __

In a comprehensive study of X, Jones (2001) found that __

In a study conducted by Smith (1978), it was shown that __

In studies of rats given X, Smith and colleagues found that __

In a study which set out to determine X, Smith (2012) found that __

In a randomised controlled study of X, Smith (2012) reported that __

In another major study, Smith (1974) found that just over half of the __

In a recent cross-sectional study, Smith (2006b) investigated whether __

In a large longitudinal study, Smith *et al.* (2012) investigated the incidence of X in Y.

In one well-known recent experiment, limits on X were found to be __ (Smith, 2013)

Reference to a previous investigation: topic prominent

To determine the effects of X, Jones *et al*. (2005) compared __

X was originally isolated from Y in a soil sample from __ (Jones *et al.*, 1952).

The electronic spectroscopy of X was first studied by Smith and Jones in 1970.

X formed the central focus of a study by Smith (2002) in which the author found __

To better understand the mechanisms of X and its effects, Jones (2013) analysed the __

X was first demonstrated experimentally by Pavlov (Smith, 2002). In his seminal study __

The acid-catalyzed condensation reaction between X and Y was first reported by Smith in 1872.

The way in which X is regulated was studied extensively by Smith and colleagues (Smith *et al.*, 1995 and 1998).

Reference to what other writers do in their text

In Chapter 2, Smith provides us with a number of important __

In the subsequent chapter, Smith examines the extent to which __

By drawing on the concept of X, Smith has been able to show that __

Some analysts (e.g. Carnoy, 2002) have attempted to draw fine distinctions between __

Drawing on an extensive range of sources, the authors set out the different ways in which __

Other authors (see Harbison, 2003; Kaplan, 2004) question the usefulness of such an approach.

In her review of __,	

In her major study, In her analysis of __, In her case study of __, In her introduction to __, In her seminal article, In her classic critique of __, In her interesting analysis of __,	Smith (2012) identifies five characteristics of __

Smith (2000)	identifies X, Y, and Z as the major causes of __ draws on an extensive range of sources to assess __ highlights the need to break the link between X and Y. uses examples of these various techniques as evidence that __ mentions the special situation of Singapore as an example of __ questions whether mainstream schools are the best environment for __ draws our attention to distinctive categories of X often observed in __ considers whether countries work well on cross-border issues such as __ discusses the challenges and strategies for facilitating and promoting __ provides in-depth analysis of the work of Aristotle showing its relevance to __ defines evidence based medicine as the conscious, explicit and judicious use of __ lists three reasons why the English language has become so dominant. These are: __

	traces the development of Japanese history and philosophy during the 19th century.

Reference to another writer's idea or position

According to Smith (2003), preventative medicine is far more cost effective, and therefore __

As noted by Smith (2003) X is far more cost effective, and therefore __

Smith (2013)	argues claims suggests maintains concludes points out	that	preventative medicine is far more cost effective, and therefore better adapted to the developing world.

Smith (2013)	offers proposes suggests argues for	an explanatory theory for each type of irrational belief.

Synthesising material: bringing sources together

Similarly, Nicoladis (2006) found that X __

In the same vein, Smith (1994) in his book XYZ notes __

This view is supported by Jones (2000) who writes that __

Smith argues that her data support O'Brien's (1988) view that __

Al-Masry's (1986) work on X is complemented by Smith's (2009) study of __

Almost every paper that has been written on X includes a section relating to __

Unlike Smith, Jones (2013) argues that __

In contrast to Smith, Jones (2013) argues that __

A broader perspective has been adopted by Smith (2013) who argues that __

Conversely, Wang (2010) reported no significant difference in mortality between X and Y.

Smith argues that __ Al-Masry (2003) sees X as __	Similarly, Jones (2013) asserts that __ Likewise, Wang (2012) holds the view that __

Some writers (e.g. Smith, 2002) have attempted to draw fine distinctions between __ Some authors have mainly been interested in questions concerning X and Y (Smith, 2001; Jones __) Much of the available literature on X deals with the question of __	Others (see Jones, 2003; Brown, 2004) question the usefulness of __ Others have highlighted the relevance of __ But Smith (2008) is much more concerned with __

Zhao (2002) notes that __ Smith (2013) found that X accounted for 30 % of Y.	However, Jennings' (2010) study of Y found no link between __ Other researchers, however, who have looked at X, have found __ Jones (2010), for example, __

Smith (2010) presents an X account, While Smith (2008) focusses on X,	whilst Jones (2011) __ Jones (2009) is more concerned with __

Some ways of introducing quotations

Commenting on X, Smith (2003) argues: '__'

As Carnoy (2004: 215) states: 'there are many good reasons to be sceptical'.

As Smith argues: 'In the past, the purpose of education was to __' (Smith, 2000: 150).

In the final part of the *Theses on Feuerbach*, Marx writes: 'Philosophers have hitherto only __'

Sachs concludes: 'The idea of development stands today like a ruin in __'(Sachs, 1992a: 156).

As Smith (2013: 320)	notes: '__' argues '__' writes: '__' observes: '__' points out: '__' reminds us: '__'

Summarising the review or parts of the review

Together, these studies indicate that __

Overall, these studies highlight the need for __

Considering all of this evidence, it seems that __

Collectively, these studies outline a critical role for __

In all the studies reviewed here, X is recognised as __

The evidence presented in this section suggests that __

The studies presented thus far provide evidence that __

Taken together, these studies support the notion that __

Overall, there seems to be some evidence to indicate that __

Together these studies provide important insights into the __

All of the studies reviewed here support the hypothesis that __

Two important themes emerge from the studies discussed so far:

However, such studies remain narrow in focus dealing only with __

The evidence reviewed here seems to suggest a pertinent role for __

These studies clearly indicate that there is a relationship between __

In view of all that has been mentioned so far, one may suppose that __

There remain several aspects of X about which relatively little is known.

Section 4. Describing Methods and Materials

The methods section that follows the introduction section should provide a clear description of the experimental procedure, and the reasons behind the choice of specific experimental methods. The methods section should be elaborate enough so that the readers can repeat the experimental procedure and reproduce the results. The scientific rigor of the paper is judged by your materials and methods section, so make sure you elaborate on all the fine details of your experiment. Explain the procedures step-by-step by splitting the main section into multiple sub-sections. Order procedures chronologically with subheadings. Use past tense to describe what you did since you are reporting on a completed experiment. The methods section should describe how the research question was answered and explain how the results were analyzed. Clearly explain various statistical methods used for significance testing and the reasons behind the choice.

The methods section of your research paper should include the following:

- Experimental setup
- Data collection
- Data analysis
- Statistical testing
- Assumptions
- Remit of the experiment

Experimental setup

This experimental design was employed because __

In the course of the experiment, __ played an important role.

The experiments were performed with __

This was experimentally investigated by __

Most experiments have been carried out with __

The main focus of the experiments was to calculate __

Prior to each experiment __

The experiments are completely based on __

In our preliminary experiments we estimated that __

In this experiment, we introduced a __

Methods were based on previous experiments __

This proceeds in two stages: __

After a series of experiments it was found that __

Therefore, in this experiment we define goals as __

In this experiment, we introduced a __

We consider the setup generic, however, __

This was designed to acquire approximately __

These were designed in such a way that __

This experimental design was employed because __

This was specifically designed for __

This was designed to acquire approximately __

Data collection

There were __ participants in this sample.

Participants first provided informed consent about __

We performed additional data collection with __

For this study, we analyzed the data collected from __

The data are less clear-cut than __

Data were collected and maintained by __

For this purpose, we employ survey data collected from __

The application employs data obtained from __

The analyzed data included: __

The procedures of handling the data followed the suggestions of __

Subsequently, __ were then used to elicit further data.

The experimental data on __ is very scarce.

The data in this work consists of __

Survey data were collected from __

This study used different data collection methods such as __

The quality can be enhanced by providing additional data for __

Such data are prone to __

We utilize secondary data from __

The data was divided into __

Participants in the first data collection were __

The sample was heterogeneous with respect to __

The sample size in this study was not considered large enough for __

We cannot deny the presence of some sample selection biases because __

The sample of respondents included __

The researchers pooled samples to __

The sample strategy was the same as for __

Data analysis

However, there are trends in our data to suggest that __

The trend values were then subjected to __

We analysed data as a function of __

We used an established technique, namely __, to analyse __

This showed a judgement error of __

To investigate this statistically, we calculated __

A __ test was used to determine the significance of data

Our data show that there is __

Our data suggest that __ which may be based partly on __

Data also revealed a significant __

Our data also address the __

Data were analyzed and correlated with __

The data are presented in Table __

However, according to our data __

We undertake the empirical analysis using data collected in __

The data is analyzed from different points of view such as __

The data reveals significant differences in __

Thus, the data supports the premise that __

Results provides a good fit to the data __

We compared the results with the original data in ways __

The evaluation of the data is shown in __

We explicitly accounted for __

Missing values were replaced using __

This analysis was confined to __

The evaluation of the data presented in this work leads to __

Statistical testing

We explored these effects statistically by __

Statistical analyses was performed by using the __ applying a significance level of __

The results were statistically significant when compared using __

This was normally distributed throughout the study population.

This distribution resulted in __

Significant differences in the __ remained.

This was the only parameter that had a statistically significant correlation with __

We used __ statistics to report __

This had a statistically significant impact on __

The correlation between __ and __ is positive and statistically significant at __

We calculate __ statistic to test the null hypothesis that __

As shown in Table __ are statistically significant at all levels.

We can clearly see that the estimated values are positive and statistically

significant at __

This revealed no statistical differences on __

The test for __ found no significant differences.

Our results show a statistically significant improvement in __

All differences in performance were statistically significant in __

The method achieves a statistically significant improvement compared to __

In order to obtain statistically representative __ it is required to __

To investigate this statistically, we calculated __

Descriptive statistics were calculated for all variables used in the study using __

The significance testing was based on __

All statistical analyses were performed using __

Assumptions

Such a potentially unrealistic assumption arises from the fact that __

Based on these assumptions, hypotheses were developed: __

Based on these assumptions, __ have been treated as __

This is based on assumptions that __

These assumptions are generally accepted these days __

The fundamental assumptions of the models are: __

This assumption is supported by the fact that __

Under certain assumptions, __ can be construed as __

These assumptions result in __

This assumption might be addressed in future studies by __

This compilation of research assumptions should result in __

These assumptions have been disproved by __

According to __ assumption, the study reports faithfully __

Remit of the experiment

For the current work, it is sufficient to point out that __

Because we were interested in __, we considered only __

This was sufficient to __

This is sufficiently generic to be adapted to other __

This is generally sufficient to produce good results.

Still, results might be sufficient, especially in __

This was not possible due to insufficient observations.

After a series of experiments __ was considered as sufficient.

It has been proven that __ must be sufficient to __

This was not sensitive enough to __

This study cannot be considered large enough for __

This is simpler and usually sufficient to __

It turns out that it is sufficiently accurate for __

There is in fact sufficient information present in __

This is considered sufficiently unique for __

This is enough to get a sufficiently accurate solution

Describing previously used research methods

Many researchers have utilised X to measure __

One of the most well-known tools for assessing __

Traditionally, X has been assessed by measuring __

A number of techniques have been developed to __

Different methods have been proposed to classify __

X is the main non-invasive method used to determine __

Different authors have measured X in a variety of ways.

Several methods currently exist for the measurement of X.

Previous studies have based their criteria for selection on __

X is one of the most common procedures for determining __

There are three main types of study design used to identify __

The use of life story data has a relatively long tradition within X.

Recent advances in X methods have facilitated investigation of __

There are a number of instruments available for measuring the __

X and Y are currently the most popular methods for investigating __

Recently, simpler and more rapid tests of X have been developed.

In most recent studies, X has been measured in four different ways.

The use of qualitative case studies is a well-established approach in __

Xs have been used in the past to investigate the mechanical properties of __

Giving reasons why a method was adopted or rejected

A major advantage of X is that __

The benefit of this approach is that __

X based methods provide a means of __

X was selected for its reliability and validity.

A case study approach was used to allow a __

This method is particularly useful in studying __

A quantitative approach was employed since __

Qualitative methods offer an effective way of __

The design of the questionnaires was based on __

The X method is one of the more practical ways of __

The semi-structured approach was chosen because __

The X approach has a number of attractive features: __

The advantages of Xs are that they are simple to deliver.

The second advantage of using the multivariate method is __

The study uses qualitative analysis in order to gain insights into __

One advantage of the X analysis is that it avoids the problem of __

Another advantage of using computer simulations is that it allows __

Continuous sampling methods have a number of advantages over __

The collaborative nature of the focus group offers another advantage __

Qualitative methods can be more useful for identifying and characterising__

A case-study	used	to ensure that __

approach was	chosen adopted	to help understand how __ to allow a deeper insight into __ to conduct this exploratory study. to evaluate the effectiveness of __ to determine the factors that affect __ to gain a detailed understanding of __ to assess the management practices of __ to obtain further in-depth information on the __ to provide rounded, detailed illustrations of the __ to capture the complexities of the phenomenon.

A major problem with the experimental method is that __

The main disadvantage of the experimental method is that __

However, there are certain drawbacks associated with the use of __

There are certain problems with the use of focus groups. One of these is that there is less __

Indicating the use of an established method

The solution was then assayed for X using the Y method.

X was prepared according to the procedure used by Jones *et al*. (1957).

The synthesis of X was done according to the procedure of Smith (1973).

X was synthesised using the same method that was detailed for Y, using __

Samples were analysed for X as previously reported by Smith *et al.* (2012).

Analysis was based on the conceptual framework proposed by Smith *et al.* (2002).

This compound was prepared by adapting the procedure used by Jones *et al.* (1990) __

Describing the characteristics of the sample

The cohort was divided into two groups according to __

A random sample of patients with __ was recruited from __

Articles were searched from January 1965 until April 2014.

The sample was representative with respect to gender and __

Forty-seven students studying X were recruited for this study.

A systematic literature review was conducted of studies that __

Just over half the sample (53 %) was female, of whom 69 % were __

Of the initial cohort of 123 students, 66 were female and 57 male.

Eligible women who matched the selection criteria were identified by __

Only children aged between 10 and 15 years were included in the study __

The participants were divided into two groups based on their performance on __

Two groups of subjects were interviewed, namely X and Y. The first group were __

The project used a convenience sample of 32 first year modern languages students.

All of the participants were aged between 18 and 19 at the beginning of the study __

All studies described as using some sort of X procedure were included in the analysis.

Participants were recruited from 15 clinics across __, covering urban and rural areas __

The initial sample consisted of 200 students, 75 of whom belonged to minority groups.

Semi-structured interviews were conducted with 17 male offenders with a mean age of 38 years.

Indicating criteria for selection or inclusion

Criteria for selecting the subjects were as follows:

Publications were only included in the analysis if __

The participants in this study were recruited from __

To identify X, the following parameters were used: __

The area of study was chosen for its relatively small __

Primary inclusion criteria for the X participants were __

Eligibility criteria required individuals to have received __

Five individuals were excluded from the study on the basis of __

A small sample was chosen because of the expected difficulty in obtaining __

The subjects were selected on the basis of the degree of homogeneity of their __

A comparison group of 12 male subjects without any history of X was drawn from a pool of __

Describing the process: infinitive of purpose

In order to identify __, the participants were asked to __

In order to understand how X regulates Y, a series of transfections was performed.

To establish whether __,

To measure X, a question asking __ was used.

To determine whether __, the cells were incubated for __

To rule out the possibility that X, the participants were __

To control for bias, measurements were carried out by another person.

To assess whether and how Xs are produced and received, we measured __

To see if the two methods gave the same measurement, the data was plotted and __

To enable the subjects to see the computer screen clearly, the laptop was configured with __

To increase the reliability of measures, each X was tested twice with a 4-minute break between __

To compare the scores three weeks after initial screening, a global ANOVA F-test was used

The vials were capped with __ to prevent __

The process was repeated several times in order to remove __

In an attempt to make each interviewee feel as comfortable as possible, the interviewer __

Describing the process: verbs used in the passive

All participants *were sent* __

The data *were normalized* using __

Ethical approval *was obtained* from __

Drugs *were administered* by ICV injection __

Descriptive data *were generated* for all variables.

The procedures of this study *were approved* by __

Prompts *were used* as an aid to question two so that __

Data *were collected* using semi-structured interviews in __

Participants *were thanked* for their time and effort and for __

The experiments *were run* using custom software written in __

Two sets of anonymised questionnaires *were completed* by __

A total of 256 samples *were taken* from 52 boreholes (Figure 11).

The solution *was washed* three times with deionized water and __

Significance levels *were set* at the 1 % level using the student t-test.

Data management and analysis *were performed* using SPSS 16.0 (2010).

Published studies *were identified* using a search strategy developed in __

Data *were gathered* from multiple sources at various time points during __

Injection solutions *were coded* by a colleague to reduce experimenter bias.

The pilot interviews *were conducted* informally by the trained interviewer __

Article references *were searched* further for additional relevant publications __

Describing the process: sequence words

To begin this process, __

The first step in this process was to __

The second method used to identify X involved __

Prior to	commencing the study, ethical clearance was sought from __ analysing the interview data, the transcripts were checked for __ data collection, the participants received an explanation of the project. undertaking the investigation, ethical clearance was obtained from __
After	'training', the participants were told that __ collection, the samples were shipped back to X in __ testing for the presence of antibodies, the blood was __ the appliance was fitted, the patients attended X every four weeks
On	arrival at the clinic, patients were asked to __ completion of X, the process of parameter estimation was carried out obtaining written informed consent from the patients, a questionnaire was __
Once	the samples were extracted, it was first necessary to __ the Xs were located and marked, a thin clear plastic ruler __ the exposures were completed, the X was removed from the Y and placed in __ the positions had been decided upon, the Xs were removed from each Y and __
Following	correction for __, X was reduced to __ conformational analysis of X, it was necessary to __ administration of X to patients, we assessed the effects on __ this treatment, the samples were recovered and stored overnight
When	dividing X, care was taken to __ removing X, it was important to __ inviting the participants, the purpose of the research was clearly explained

The subjects were *then* shown a film individually and were asked to __

The soil was *then* weighed again, and this weight was recorded as __

The results were corrected for the background readings and *then* averaged

before __

These ratings were *then* made for the ten stimuli to which the subject had been exposed __

The analysis was checked when initially performed and *then* checked again at the end of __

Finally, questions were asked as to the role of __

In the follow-up phase of the study, participants were asked __

The final stage of the study comprised a semi-structured interview with participants who __

Describing the process: "using" + instruments

Data were collected using two high spectral resolution Xs.

Semi-automated genotyping was carried out using X software and __

Using the X-ray and looking at the actual X, it was possible to identify __

Comparisons between the two groups were made using unrelated t-tests.

The data were recorded on a digital audio recorder and transcribed using a __

Statistical significance was analyzed using analysis of variance and t-tests as appropriate.

Using an Anthos Micro plate Reader, we were able to separate single cells into different __

15 subjects were recruited using email advertisements requesting healthy students from __

All the work on the computer was carried out using Quattro Pro for Windows and __

Describing the process: questionnaire design

The first question elicited information on __

Seven questions, adapted from X, assessed __

All survey questions utilised a 5-point Likert scale.

Using a 5-point Likert scale, participants were asked __

A short questionnaire was designed to ascertain the participants' __

The questionnaire was designed to measure the following constructs:

Participants were asked to respond using a 5-point Likert scale ranging from __

The questions asked participants to rate how strongly they agreed with each statement.

The study began with two open-ended survey questions that asked participants to indicate __

The questionnaire asked participants to complete three open-ended questions that asked about __

The first question	was designed to	find out __ gauge how much __ ascertain whether __ identify the types of __ test participants' knowledge of __ measure the students' ability to explain __ elicit a simple answer to a complex question about __

Indicating methodological problems or limitations

In particular, the analysis of X was problematic.

In observational studies, there is a potential for bias from __

The small size of the dataset meant that it was not possible to __

Further data collection is required to determine exactly how X affects Y.

Another major source of uncertainty is in the method used to calculate X.

In this investigation there are several sources for error. The main error is __

It was not possible to investigate the significant relationships of X and Y further because __

The responses relating to X were subjective and were therefore susceptible to recall bias.

Read the following passage, describing methods and methodologies. Describe its pros and cons

Data and Methods

The above-given literature overview has demonstrated a huge variety of approaches towards the understanding of frontier problems. However, the word "frontier" itself is a subject of constant change. Modern big data and data mining technologies make it possible to compare traditional visions of frontiers with digital content, reflecting a present-day state of the problem which falls in line with a "linguistic turn" in historiography. With the help of the Serelex system [9] which finds semantically related words in Wikipedia we have obtained the following representations of the "frontier" concept in digital space. A graph image.

The information, presented in the graph, testifies to the fact that present-day frontiers lie within the domain of new technologies. Here people use quickeys (quick keys to make computer work fast), ccars (comprehensive capital analysis and review), mopads (monitor isolation pads), search kaltix (a personalized search engine) and think about the human genome. Obviously, this idea of frontier is connected with science and technology frontiers. However, the terms "Etruscans", "Phoenicians", "Nuzi" and "Cypriots" reflect people's interest in historical frontiers. Historical and cultural reflections on the concept of "frontier" are at the heart of this paper.

The next stage of our analysis is based on data obtained from the BabelNet encyclopedia which makes it possible to get various sets of visual and factual data in the majority of modern languages, along with the number of connections, i.e. mentions in annotated texts. For the purpose of understanding the modern European frontier landscape, we explored the data in German. The Russian frontier concept was analyzed based on material presented in Russian. Finally, we decided to compare these two visions of frontier content against the English language frontier's frameworks. It is hoped that this type of cross-cultural analysis will be conducive to a deeper understanding of our main question regarding the spiritual frontiers of a

country. Finally, we discuss the results of these findings against the background of Russian historical data, describing the time period of the mid-nineteenth to twentieth centuries. This description provides us with answers about the essence of the spiritual frontier in Russia.

Conductors and Insulators

Conductors are materials having a low resistance so that current easily passes through them. The lower the resistance of the material, the more current can pass through it. The most common conductors are metals. Silver and copper arc the best of them. The advantage of copper is that it is much cheaper than silver. Thus copper is widely used to produce wire conductors. One of the common functions of wire conductors is to connect a voltage source to a load resistance. Since copper wire conductors have a very low resistance a minimum voltage drop is produced in them. Thus, all of the applied voltage can produce current in the load resistance. It should be taken into consideration that most materials change the value of resistance when their temperature changes. Metals increase their resistance when the temperature increases while carbon decreases its resistance when the temperature increases. Thus metals have a positive temperature coefficient of resistance while carbon has a negative temperature coefficient. The smaller is the temperature coefficient or the less the change of resistance with the change of temperature, the more perfect is the resistance material. Materials having a very high resistance are called insulators. Current passes through insulators with great difficulty. The most common insulators are air, paper, rubber, plastics. Any insulator can conduct current when a high enough voltage is applied to it. Currents of great value must be applied to insulators in order to make them conduct. The higher the resistance of an insulator, the greater the applied voltage must be.

Atomic Power Plant

Atomic power plants are modem installations. They consist of several main units and a great number of auxiliary ones. In a nuclear reactor uranium is utilized as

a fuel. During operation process powerful heat and radioactive radiation are produced. The nuclear reactor is cooled by water circulation. Cooling water circulates through a system of tubes, in which the water is heated to a temperature of 250-300°C. In order to prevent boiling of water, it passes into the reactor at a pressure up to 150 atmospheres. A steam generator includes a series of heat exchangers comprising tubes. The water heated in the reactor is delivered into the heat exchanger tubes. The water to be converted into steam flows outside these tubes. The steam produced is fed into the turbogenerator. Besides, an atomic power plant comprises a common turbogenerator, a steam condenser with circulating water and a switchboard. Atomic power plants have their advantages as well as disadvantages. The reactors and steam generators operate in them noiselessly; the atmosphere is not polluted by dust and smoke. As to the fuel consumption, it is of no special importance and there is no problem of fuel transportation.

The disadvantage of power plants utilizing nuclear fuel is their radiation. Radioactive radiation produced in the reactors is dangerous for attending personnel. Therefore, the reactors and steam generators are installed underground. They are also shielded by thick (up to 1.5 m) concrete walls. All their controls are operated by means of automatic devices. These measures serve to protect people from radioactive radiation.

Types of Current Current is a flow of electricity through a circuit. Let us consider two retain types of current: direct and alternating. A direct current (d.c.) flows through a conducting circuitin one direction only. It flow pro-vided a direct voltage source is applied to the circuit. An alternating current (a.c.) is a current that changes its direction of flow through a circuit. It flows provided an alternating voltage source is applied to the circuit. Alternating current flows in cycles. The number of cycles per second is called the frequency of the current. In a 60-cycle alternating current circuit the current flows in one direction 60 times and in the other direction 60 times per second. It is easy to transform a.c. power from one voltage to another by a transformer. Transformers are also used to step down the voltage at the

receiving point of the line to the low values that are necessary for use. When necessary a.c. can be changed into d.c. but this is seldom necessary. Among the most common meters used there are the ohmmeter, the ammeter and the voltmeter. The ohmmeter is used to measure the value of resistance. It consists of a milliammeter calibrated to read in ohms, a battery and resistors. The meter is connected in parallel and the circuit is not opened when its resistance is measured. The readings on the scale show the measured value. The ammeter is used to measure the value of current. When the ammeter is used the circuit should be opened at one point and the terminals of the meter should be connected to it. One should take into consideration (hat the positive terminal of (lie meter is connected to (he positive terminal of (he source; the negative terminal - to the negative terminal of the source. The ammeter should be connected in series. The readings on the scale show the measured value.

Capacitors

A capacitor is one of the main elements of a circuit. It is used to store electric energy. A capacitor stores electric energy provided that a voltage source is applied to it. The main parts of a capacitor are metal plates and insulators. The function of insulators is to isolate the metal plates and in this way to prevent a short. In the diagram one can see two common types of capacitors in use nowadays: a fixed capacitor and a variable one. The plates of a fixed capacitor cannot be moved; for his reason its capacity does not change. The plates of a variable capacitor move; its capacity changes. The greater the distance between the plates, the less is the capacity of a capacitor. Variable capacitors are commonly used by radiomen; their function is to vary the frequency in the circuit. Fixed capacitors are used in telephone and radio work. Fixed capacitors have insulators produced of paper, ceramics and other materials; variable capacitors have air insulators. Paper capacitors are commonly used in radio and electronics; their advantage is their high capacity: it may be higher than 1,000 picofarad. Besides, electrolyte capacitors are highly in use. They also have in very high capacity: it varies from 0.5 to 2,000 microfarad. Their disadvantage is that they change their capacity when the temperature changes. They can operate

without a change only at temperatures not lower than -40" C. Common troubles in capacitors are an open and a short. A capacitor stops operating and does not store energy in case it has a trouble. A capacitor with a trouble should be substituted by a new one.

Aviation for amateurs All aircrafts are built with the same basic elements: wings to provide lift, engine(s) to provide motive power, a fuselage to carry the payload and controls, and a tail assembly1 which usually controls the direction of flight. These elements differ in shape, size, number, and position. The differences distinguish one aircraft type from another. Aircraft Components Angle of Attack (AOA) The angle between the wing and the relative wind. When all else is held constant, an increase in AOA results in an increase in lift. This increase continues until the stall2 AOA is reached then the trend reverses itself and an increase in AOA results in decreased lift. Angle of Attack Ailerons -- Located on the outer part of the wing, the ailerons help the airplane turn. Ailerons are control surfaces which are used to change the bank of the airplane, or roll the airplane. As the ailerons hinge down on one wing, they push the air downwards, making that wing tilt up. This tips the airplane to the side and helps it turn. This tipping is known as Banking. They are manipulated from the cockpit by moving the control column (stick) left and right. Right movement rolls the airplane to the right and vice versa. Roll speed is proportional to the amount of stick deflection. Once a desired bank is attained, the stick is centered to maintain the bank3 . Airfoil4 Section -- is the cross-sectional shape of the wing. The airfoil section shape and placement on the fuselage are directly linked to the airplanes performance. Bank -- The angle between the wings and the horizon, as viewed from the rear of the airplane. An airplane with its wings level has zero degrees of bank. Bank Angle Banking -- Pushing the control stick in the cockpit to the left or right makes the ailerons on one wing go down and the ailerons on the other wing go up. This makes the plane tip to the left or right. This is called Banking. Banking makes the plane turn. Like a bicycle, the plane tilts, or banks, as it turns. This process is also called Roll. Cockpit -- Where the pilot sits. All

of the controls and instruments are located here. Control Stick -- The ailerons are connected to the Control Stick which is located in cockpit. Pushing the stick to the left or to the right makes the ailerons on one wing go down and the ailerons on the other wing go up. This makes the plane tip to the left or right. This is called banking. This tipping is also called roll. Drag1 -- One of the four basic principles of flight. Drag is the force encountered as an airplane pushes through the air, which tends to slow the airplane down. There are two types of drag, and an airplane must fight its way through both kinds of drag in order to maintain steady flight. Profile or parasite2 drag is the same kind of drag experienced from all objects in a flow. Cars, rocks, and hockey pucks must all overcome profile drag. This type of drag is caused by the airplane pushing the air out of the way as it moves forward. This drag can easily be experienced by putting your hand out the window of a moving vehicle (experienced en masse if your hand encounters something more dense than air). The other type, called "induced drag," is the result of the production of lift (you can't get something for nothing!). This drag is the part of the force produced by the wing that is parallel to the relative wind. Objects that create lift must also overcome this induced drag, also known as drag-due-to-lift. Skin friction is a function of the surface area wetted by the airstream. Any increase in surface area will increase skin friction drag. The other component of profile drag is pressure drag. Pressure drag is a function of the size of the wake behind an object in an airstream; it can be reduced by streamlining the object in order to delay separation of the flow. A side effect of streamlining is an increase in the wetted (exposed) area and hence the skin friction, so it is important to ensure that a net reduction in drag is actually achieved when adding streamlining. Elevators -- The Elevators are movable flaps attached to the horizontal stabilizer used to change the angle of AOA of the wing which will, in turn, change the pitch, moving the airplane up and down. It is operated by moving the control stick forward or backward, which in turn moves the elevator down or up, respectively. When the pilot "moves the stick forward to make the trees bigger and back to make them smaller", it is the elevator that does the work. Engine -- This part of the plane produces thrust or forward movement necessary to sustain flight. Thrust is one of the four basic rules

behind plane flight. The engine turns the propeller. Flaps -- Located on the inner part of the wing, the Flaps help the plane fly slower. This helps to increase the lifting force of the wing at slower speeds, like during takeoff and landing. These slower speeds make takeoff and landing distances shorter. The Flaps slide back and forth, and are controlled by a lever in the cockpit. Flaps are moved down from a streamlined position to increase the amount of lift produced at a particular airspeed.

Flaps

Fuselage -- The Fuselage is the central "body" of the plane. The wings, tail and engines are all attached to it. In a modern passenger airplane, you sit only in the top half of the Fuselage. The Fuselage also houses the cockpit where all the controls necessary for operating and controlling the plane are located. Cargo is also housed in the bottom half of the Fuselage. The Fuselage is generally streamlined as much as possible. Horizontal Stabilizer -- The horizontal stabilizer is a fixed position airfoil that stabilizes the pitch of the airplane. When a wing produces lift, it also develops a force that tries to pitch the airplane forward. The horizontal stabilizer prevents this unwanted pitch from occurring. Gravity -- Gravity is the attractive force from the earth that acts upon all mass. It is one of the four principles of flight. Landing Gear1 -- On conventional aircraft, the Landing Gear consists of wheels or tires with supports (struts) and shock absorbers which help in takeoff and landing. To reduce drag while the plane is flying, most wheels fold up into the body of the plane after takeoff. On many smaller aircraft, the wheels do not fold up after takeoff. Lift -- An upward force that causes an object to rise. In aircraft it may be produced by downward-facing propellers, or by a moving wing with an airfoil shape (the specially curved shape of an airplane wing). Lift is one of the four basic principles of flight. Forces are produced by the wing as the air flows around it. Lift is the part that is perpendicular to the relative wind. The other part contributes to drag. Pitch2 -- The angle between the airplane's body (lengthwise) and the ground. An airplane going straight up would have a pitch attitude of ninety degrees and one in level flight, about zero degrees.

Pitch

Relative Wind -- The direction that the air is going as it passes the airplane relative to the airplane. Relative wind has nothing to do with the wind speed on the ground. Propeller -- This part of the plane produces thrust or forward movement necessary to sustain flight. This turning blade on the front of an airplane moves it through the air. Roll -- Roll is the tilting motion the airplane makes when it turns. Rudder3 -- The Rudder, controlled by the rudder pedals, is the hinged 4 part on the back of the tail which helps to turn the aircraft. It is the vertical part of the tail which controls the sideways movement of the airplane, called the yaw. The least used of all controls, most flying can be safely accomplished without it. (One exception is landing with a crosswind; yaw induced by the rudder must be used to keep the fuselage aligned with the runway and prevent an excursion into the grass.) Stall -- What a wing does when a given angle of attack is exceeded (the stall angle of attack). The stall is characterized by a progressive loss of lift for an increase in angle of attack. Tail -- The Tail has many movable parts. The pilot controls these parts from the cockpit. Included in the parts on the Tail are the rudder and the elevators. Thrust1 The force produced by the engines, thrust works opposite of and counteracts2 drag. Thrust is the forward movement that is necessary to sustain flight. It is one of the four basic principles of flight. Trim3 -- When the controls are moved from neutral, it takes a certain amount of pressure to hold them in position in the airflow. Trim gets rid of this pressure and effectively changes the "center" of the controls - or the neutral position where there is no stick pressure. Vertical Stabilizer -- The vertical stabilizer is the yaw stabilizer for the airplane; it keeps the nose of the airplane (as seen from above) pointed into the relative wind. Weight -- The force produced by the mass of the airplane interacting with the earth's gravitational field; the force that must be counteracted by lift in order to maintain flight. Basic Weight - The weight of the basic aircraft plus guns, unusable fuel, oil, ballast, survival kits4 , oxygen, and any other internal or external equipment that is on board the aircraft and will not be disposed of during flight. Operating Weight - Is the sum of basic weight and items such as crew, crew baggage, steward equipment, pylons and racks, emergency

equipment, special mission fixed equipment, and all other nonexpendable5 items not in basic weight. Gross Weight - Is the total weight of an aircraft, including its contents and externally mounted items, at any time. Landing Gross Weight - Is the weight of the aircraft, its contents, and external items when the aircraft lands. Zero Fuel Weight (ZFW) - Is the weight of the aircraft without any usable fuel. This is due to structural limitations of aircraft) Wing -- The Wings are the "arms" of the airplane. They provide the principal lifting force of the airplane. They hold the plane aloft by creating lift from the air rushing over them. Like all plane parts, the Wings should be light and strong, but also flexible to absorb sudden gusts of wind. Yaw -- The angle between the fuselage of the airplane and the relative wind as seen from above the airplane. Yaw is the term pilots use to describe the turning left or right of the plane. Yaw is the sideways movement of the plane. Normally an airplane is flown without yaw.

Yaw Wings

Lift is the aerodynamic force that supports an aircraft in flight, due to the airflow over the wings or body. Drag is the resistance a vehicle moving through the air experiences, and pitching1 moments are a result of aerodynamic forces that make the nose of an aircraft move either up or down. The shape of a wing looks like an elongated water drop laying on its side. This shape is referred to as an airfoil. Usually the top is curved more than the bottom making the upper surface slightly longer than the bottom. Since air passing over the top and bottom must reach the rear of the wing at the same time, the air passing over the top must not only travel faster, but also changes direction and is deflected downward. This actually results in lift being generated due to a rate of change of vertical momentum and a difference in static pressure between the top and bottom of the wing. The production of lift is probably the most important topic in the science of aerodynamics. It is a wing's ability to efficiently produce a force perpendicular to the air passing over it that makes heavier-than-air flight possible. In the big picture, all wings produce lift the same way - they push down on the air, forcing the air downward relative to the wing. It is this force

that we call lift. Many different types of shapes do this, but the shapes built specifically for this purpose are called "airfoils ." Various Airfoils The wing makes its "magic" by forcing the air down. Some people like to compare it to water skiing, where water skis and speed are used to force the water down and the skier up. But that analogy tells only part of the story. Most of the time, the top of the wing does the majority of the "pushing" on the air (actually, in this case, "pulling" the air down). The top and the bottom of the wing combine to produce a force, and the part of this force perpendicular to the relative wind is lift. Since the wing not only pushes the air down but slows it down as well, some drag (induced drag) is caused. The chord3 line is an imaginary line drawn from the leading edge to the trailing edge of an airfoil. Secondly, the relative wind is the airflow which acts on the airfoil and is paralell to but opposite the direction of flight. The angle between the chord line and the relative wind is called the angle of attack, which is called "alpha." As the angle of attack increases, the change of vertical momentum increases. Additionally, as the angle of attack increases, the coefficient of lift (CL) increases. The result is an increase in lift. However, there are limits to how much the angle of attack can be increased. At some higher angle of attack, the lift coefficient begins to decrease. The angle of attack where the lift coefficient begins to decrease is called the critical angle of attack. Once the critical angle is exceeded, the wing can no longer produce enough lift to support the weight of the aircraft and the wing is said to be "stalled." In other words, the aircraft will stall when the critical angle of attack is exceeded.

Lift and Drag

A wing must be at a high enough AOA to deflect the air downward and produce the desired lift. The pilot uses the elevators to change the angle of attack until the wings produce the lift necessary for the desired maneuver. Other factors are involved in the production of lift besides the AOA. These factors are relative wind velocity (airspeed) and air density (temperature and altitude). Changing the size or shape of the wing (lowering the flaps) will also change the production of lift. Airspeed is absolutely necessary to produce lift. If there is no airflow past the wing,

no air can be diverted downward. At low airspeed, the wing must fly at a high AOA to divert enough air downward to produce adequate lift. As airspeed increases, the wing can fly at lower AOAs to produce the needed lift. This is why airplanes flying relatively slow must be nose high (like an airliner just before landing or just as it takes off) but at high airspeeds fly with the fuselage fairly level. The key is that the wings don't have to divert fast moving air down nearly as much as they do to slow moving air. As an airplane in flight slows down, it must continually increase its pitch attitude and AOA to produce the lift necessary to sustain level flight. At high AOAs, the top of the wing diverts the air through a much larger angle than at low AOAs. As the AOA increases, a point will be reached where the air simply cannot "take" the upper curve over the entire distance of the top of the wing, and it starts to separate. When this point is reached, the wing is not far from stalling. The airflow unsticks further up the wing as the AOA increases. The top of the wing still contributes to the production of lift, but not along its entire curve. As the airspeed slows or as the angle of attack, or both, is increased further, the point is reached where, because of this separation, an increase in the AOA results in a loss of lift instead of an increase in lift. Thus, the wing no longer produces sufficient lift and the airplane that the wing is supporting accelerates downward. This is the stall. Air density also contributes to the wing's ability to produce lift. This is manifested primarily in an increase in altitude, which decreases air density. As the density decreases, the wing must push a greater volume of air downward by flying faster or push it down harder by increasing the angle of attack. This is why aircraft that fly very high must either go very fast like the SR-71, capable of flying Mach 3 (three times the speed of sound), or must have a very large wing for its weight, like the U-2.

Engines

An engine produces a force which acts toward the rear of the aircraft which "thrusts" the aircraft forward. For this reason, the force produced by the engine is called thrust. Thrust is the most important force acting on an aircraft, because regardless of the type of aircraft, ALL need some type of thrust to propel them aloft.

Even unpowered aircraft such as gliders need a tow plane to provide an external force to pull the aircraft into the air, where it can obtain airflow over the wings to provide the necessary lift to remain airborne. Hang gliders use foot power to initiate movement prior to "leaping" off a cliff. The most common means of developing thrust on powered airplanes comes from propellers or jets. Whether an aircraft has a propeller, a turbojet, or a turbofan, all of these produce thrust by accelerating a mass of air to the rear of the aircraft. The movement of this air to the rear creates an unbalanced force pushing the aircraft forward. The Wright brothers made many important things come together for their historic first heavier-than-air flight. One of the most vital was an engine that efficiently produced thrust while not weighing too much. They used propellers - the only effective means available of transferring an internal combustion engine's output into push or pull for the airplane. Propellers are essentially revolving wings situated so that the lift they produce is used to pull or push the airplane. Most modern high-speed aircraft use a very different type of engine - the jet engine. Jet engines not only look different from propellers, they operate in a very different manner as well. More like rocket engines, jets produce thrust by burning propellant (jet fuel mixed with air) and forcing the rapidly expanding gases rearward. In order to operate from zero airspeed on up, jets use enclosed fans on a rotating shaft to compress the incoming air (and suck it in if the airplane is not going very fast) and send it into the combustion chamber where the fuel is added and ignited. The burning gases keep the shaft turning by rotating a fan before exiting the engine.

References

1. Ref-n-Write. Loo up and learn : an electronic database. URL: ref-n-write. com/trial/research-paper-sample-writing-conclusion-section-academic-phrasebankvocabulary/(accessed: 02.04.2018).
2. Academic Phrasebank : an electronic database. URL: phrasebank.manchester. ac.uk/writing-conclusions/ (accessed: 02.04.2018).
3. *Zavyalova N*. Dataset for an analysis of communicative aspects of finance // Data in Brief. April 2017. Vol. 11. No. 1.
4. *Zavyalova N*. The new philosophy of Chinese socio-cultural acquisition in school classroom // Espacious. 2018. Vol. 39. Iss. 2. [9]. URL: http://www. revistaespacios.com/a18v39n02/in183902.html/ (accessed: 12.06.2018).
5. *Zavyalova N*. Spiritual frontiers: The Russian Frontier myth of the Urals Region against a European and North American background // Terra Sebus. 2016. Vol. 8.
6. *Zavyalova N*. Cultural Communicative Formulae as the Current Stage of Culture Genesis // Знание. Понимание. Умение [Knowledge. Understanding. Skill]. 2015. Vol. 1.
7. *Zavyalova N*. BRICS money talks: Comparative socio-cultural communicative taxonomy of the New Development Bank // Research in International Business and Finance. January 2017. Vol. 39. Pt. A.
8. *Fedotova M*. Russian Sayings: It's All Chinese to Me // BRICS Business Magazine. 2015. No. 5 (16). URL: http:// bricsmagazine.com/ en/articles/russiansayings-it-s-all-chinese-to-me (accessed: 12.07.2015).
9. *Panchenko A., Romanov P., Morozova O., Naets H., Philippovich A., Romanov A., Fairon C*. 35th European Conference on Information Retrieval: 837–840. Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics) (Iss. 7814), ECIR 2013; Moscow; Russian Federation; 24 March 2013 through 27 March 2013; Code 96205.
10. *Zavyalova N*. Narratives of Cultural Encounters through Communicative Prism // European Journal of Science and Theology. 2014. No. 10 (6). P. 163–174.
11. *Cheng A*. Teaching Chinese in the Global Context: Challenges and Strategies // European Review. 2015. No. 23 (2).
12. *Gombay N*. "There are Mentalities that Need Changing:" Constructing Personhood, Formulating Citizenship, and Performing Subjectivities on a Settler Colonial Frontier // Political Geography. September 2015. Vol. 48. Iss. 1. P. 11–23.

Contents:

Редактор: Jumanazarova F.R.