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A Heuristic approach in examining the factors influencing additional voluntary contribution in the public sector in Kenya.

Mugi, Christopher Weru
Strathmore Business School
Strathmore University

A HEURISTIC APPROACH IN EXAMINING THE FACTORS INFLUENCING ADDITIONAL VOLUNTARY COUNTRIBUTION IN THE PUBLIC SECTOR IN KENYA

CHRISTOPHER WERU MUGI

ADM NO. 123989

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DECLARATION

I declare that this work has not been previously submitted and approved for the award of a degree by this or any other University. To the best of my knowledge and belief, the dissertation contains no material previously published or written by another person except where due reference is made in the dissertation itself.

Name of Candidate: **Christopher Weru Mugi**

Approval

The dissertation of Christopher Weru Mugi was approved by the following:

Name of Supervisor: Dr. James Ndegwa

School/Institute/Faculty: Strathmore University

Dr. Ceaser Mwangi

Executive Dean

Strathmore University Business School.

Dr. Bernard Shibwabo

Director, Office of Graduate Studies

ABSTRACT

There is prevailing confusion on the machinations of, and thus subscribership to pension funds in Kenya. The need for additional pension fund contributions is however apparent given insufficient funding towards catering to the aging population in the country. The current study aimed at shedding light on the factors affecting employee additional voluntary pension contribution in Kenya's civil service. The objectives were as follows - to assess the effect of macroeconomic factors on employee additional voluntary pension contribution in Kenya's civil service, to assess the effect of industry-specific factors on employee additional voluntary pension contribution in Kenya's civil service and to assess the effect of personal factors on employee additional voluntary pension contribution in Kenya's civil service. A positivist approach employing a descriptive-correlational research design was applied. Data were collected, through a sampling approach, from all 22 ministries. Data on variables were collected through a structured questionnaire. An exploratory factor analysis was then performed on the data after which an ordinal logistic regression approach was employed in determining the impact of macroeconomic factors, industry-specific factors, and personal factors, on additional voluntary pension contribution in Kenya's civil service. Personal factors were deemed impactful to employee additional voluntary pension contributions whereas industry-specific factors and macroeconomic factors were not considered impactful at the 95% confidence level. Study findings on the first objective indicate that macroeconomic factors should not be considered in shaping incentive packages to bolster additional voluntary contribution to pension schemes. Findings from the second factor indicate a need for further investigation into potential context-specific attributes that account for the lack of impact of industry-specific factors. Finally, personal factors, as indicated in the third objective, should be considered as an isolated subgroup to create effective additional voluntary contribution incentives that leverage short-term thinking and financial factors.

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DEDICATION

I dedicate this Dissertation to my wife Linda, for the love and endless support she accorded me throughout my MBA pursuit. To my children Athalia, Skyler, and Gian who were greatly impacted in every possible way in this journey, thank you. My love for you is unreserved.

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May God bless you and favor you all.

LIST OF ACRONYMS

DPSM – Directorate of Public Service Management

GOK – Government of Kenya

PSC – Public Service Commission

CHAPTER ONE: INTRODUCTION

1.1 Background of the study

There is a global trend of alterations to pension plans on account of the heavy burden that the former presents to governments and on perceived long-term benefits of allowing contributors more of a say on preferred plans (Benartzi & Thaler, 2001). Employees and employers are forced to contemplate their willingness to participate, where allowed, in various pension options thus birthing the need to articulate the various factors that impact on adoption of additional voluntary pension contribution in the public sector. Duflo and Saez (2003) note that information and social interactions shape retirement plan decisions whereas Birschel (2006) notes that consumer-driven plans are perceived more favorably than traditionally defined-benefits plans on account of significant savings. Mitchell et al. (2012), in a contrary position to that put forth by Duflo and Saez (2003) however note that individuals often make poor decisions regarding their pension plans, such as under-saving or making suboptimal investment choices. They suggest that default options, rather than allowing individuals more say in their preferred plans, can lead to better outcomes.

Holzmann (2013), in a global assessment of trends in civil servants' pension fund contributions, highlights an inclination towards the introduction and strengthening of basic protection for the vulnerable and elderly. There is also a movement towards mandated contribution schemes and a push by governments to encourage 'top-ups' under both funded and voluntary provisions, in a bid to increase the capital amassed through pension contributions. Choi et al. (2004) however find that individuals tend to contribute less to their pension plans when contributions are mandatory compared to when they are voluntary.

Using pension legislation data collected from 1880 to 2010, Grünewald (2021) notes that the colonial legacy of nations plays a significant role in shaping legislation designed to ensure adequate pension provisions for different citizenries. Grünewald (2021) further notes that as of 2019, only 11.6% of the African population aged above 60 received benefits from old-age pensions. One of the reasons for the limited coverage is the exemption of SMEs from mandatory pension provisions, aiming to alleviate the financial liability of small firms. Therefore, the need for additional contributions to pension plans is more apparent in Africa, considering the low level

of current pension coverage and the growing old-age population, which has not been addressed adequately through ad hoc pension creation efforts.

There is limited representation of the labor force in pension and social insurance schemes in Sub-Saharan Africa (Dorfman, 2015). The situation is particularly dire among the elderly, promoting the reformation of current pension structures available to the populace of various nations. As a starting point, Dorfman (2015) notes that little can be achieved without strengthening institutions to serve informal workers. Given that the bulk of the population in the region consists of informally employed individuals, pension schemes should consider both the low earnings characterizing this group and the potential merger of civil service and national pension schemes into a single representative agency. Such an agency would aim to leverage the difference in earnings between the poorest and the richest to create more equitable pension schemes that assist the disproportionately affected in society.

Pension funds have a significant influence on the financialization of economies. Bonizzi et al. (2020) support this assertion by noting that pension funds have been linked to the growth in overall size and significance of financial markets. The current study is therefore important, as additional voluntary pension contributions in the public sector, in line with agency theory, would imply employees' willingness to actively participate in the current pension plans. Conversely, a commitment to minimum contributions, due to a negative perception of the shift, would have a negative impact on financialization, as less funding would be available to the broader economy through the pension avenue (Njuguna, 2011). This concern is validated by Njuguna (2011), who notes that a cloud of mistrust hovers over the public pension sector in Kenya due to recurrent lack of inventiveness and perpetual pension governance lapses. The sector can be considered to be on the precipice of obsolescence as more innovative offerings arise from private sector players looking to replace incumbent public sector pension schemes (Njuguna, 2011). The current study thus aims to identify factors that would increase contributors' willingness to increase their subscription amounts through voluntary additional contributions provided for under defined contribution plans.

1.1.1 Employee additional voluntary pension contribution

Employee additional voluntary pension contribution refers to additional percentage amounts unforcedly issued by employees over and above the statutory pension contributions required of them (Akpanibah & Oghen'Oro, 2018; Marcinkiewicz, 2019). The contributions can be in the form of direct individual contributions on through group additional contributions that are then utilized in stock trading or other additional revenue generating activities with the intention of providing additional pension funding for the involved; the current study focuses on the opting for or out of additional contribution options availed via the direct contribution plan to which pension contributions currently are gathered in Kenya's civil service. The study seeks to establish factors that contribute to opting into additional contribution options with the aim being to leverage these factors to further increase changes of additional contributions as an inherent provision of the direct contribution scheme. The factors under consideration to this end are therefore – macroeconomic factors, industry-specific factors, and personal factors. The three variables constitute the independent variables of the study.

1.1.2 Factors affecting employee additional voluntary pension contribution

A multiplicity of factors contributes towards one's willingness to remit additional funds into a nominal pension scheme. The current study focuses on three main grouping of factors with the aim of assessing their relative impact to the willingness to engage in additional pension contributions – macroeconomic factors, industry-specific factors, and personal factors. The macroeconomic factors under consideration are - GDP, unemployment rate, economic uncertainty, fiscal policy, inflation (Lisenkova & Bornukova, 2017; Cuadros-Meñaca, 2020; Guariglia & Markose, 2000; Thurley & Lucinda, 2009; Ashley et al., 2019). The industry-specific factors considered are as follows: matching contributions, automatic enrollment, active choice deadlines, growth of funds, claims processing period (Bonizzi et al., 2020; Choi et al., 2002; Gorina & Hoang, 2019; Renneboog et al., 2008). Finally, the personal factors under consideration are: Routine seeking, emotional reaction, short-term thinking and cognitive rigidity, financial literacy, disposable income, age, gender, dependents, savings, pessimism/optimism (Adaku et al., 2017; Guariglia & Markose, 2000; Cuadros-Meñaca, 2020; Praja et al., 2020; Jacobsen et al., 2014). Dorfman (2015) points to a dearth of extant literature on pension cover in Africa hence meriting focus on the

aforementioned determinants of additional pension contribution in the region. The current study further advances knowledge on the determinants of additional pension contributions by providing the relative importance on the various factors on additional contribution to pension funds. This information can then be leveraged in the optimization of schemes to the end of accrual of funds necessary for sufficient catering to the needs of future and current pensioners.

1.1.3 Civil Service in Kenya and the regulatory framework of Kenya

There are 22 ministries employing civil servants in Kenya; the bulk of which have two or more state departments headed by principal secretaries (GOK, 2019). The national government employs an estimated 320,668 (PSC, 2012) with the combined workforce of civil servants at the county government level estimated at 200,000 (Murithi, 2019). Management of workers is thus dualistic with county employees, unlike those directly employed by the government, looking to their respective counties for compensation. The employee base consists mainly of elderly workers with 47 percent of the population, as highlighted by the Directorate of Public Service Management (DPSM) expected to retire within the decade (Murithi, 2019). The aging population thus indicates that issues of pension management are front and central of both management and the employee base management thus justifying the value of the current study. Furthermore, government assessments indicate an additional 26,792 employees have required entry grade levels whereas 22,981 are due for promotion with the total expenditure commensurate with the tasks totaling KES 15.8 billion (Murithi, 2019).

The regulatory framework of pension schemes in Kenya was established by the Retirement Benefits Act of 1997 and its subsequent amendments. The Act created the Retirement Benefits Authority (RBA), which is the main regulator and supervisor of the pension industry. The main responsibility of the RBA is registering, licensing, and monitoring pension schemes and service providers, as well as promoting and protecting the interests of members and beneficiaries (Retirement Benefits Authority, 2023). Additionally, the institution issues regulations and guidelines on various aspects of pension management, such as investment, governance, administration, and disclosure.

The pension system in Kenya consists of three main pillars: the mandatory public scheme for public service employees, the mandatory social security scheme for formal sector employees (other

than public service employees), and the voluntary occupational and individual schemes for both formal and informal sector workers (Raichura, 2008). The public scheme is financed on a pay-as-you-go basis, while the social security scheme and the voluntary schemes are funded on a defined contribution basis. The public scheme and the social security scheme are both under review for further reform (Raichura, 2008).

Among the primary objectives of the RBA-championed reform to pension schemes was to increase coverage and reduce post-retirement poverty levels. However, according to a 2020 report by Cytonn Investments, the pension assets under management (AUM) in Kenya were equivalent to only 13.3% of the country's GDP, which is low compared to other African countries. Cytonn's (2021) report further highlighted that some of the recent regulatory changes that have been introduced to enhance the pension system, such as the introduction of new asset classes, the qualification criteria for corporate trustees, and the penalties for non-compliance.

1.2 Problem statement

As mandated in the Public Service Superannuation Scheme Act, 2012, public sector employees are required to contribute 7.5% of their basic salary to the new contributory scheme, while their employers contribute 15%. On the other hand, private sector employees contribute 6% of their gross earnings to the National Social Security Fund (NSSF), while their employers match their contributions (Kinyanjui, 2022). This finding therefore suggests that focusing on public service contributions is warranted by the relatively higher percentage that they contribute to pension schemes. Moreover, they are mandated to do so and issuance of payment through government coffers, through a pre-automated mechanism, ensures compliance; the same is not true for private firms engaging in pension contributions (Kinyanjui, 2022).

Stewart and Yermo (2009) in an OECD assessment of pensions in Africa note that the cost of providing universal non-contributory pension to all the elderly equates to 2 to 3% of GDP yet this fraction is higher than total healthcare allocation allotted in some countries. Nyangoro and Njenga (2022) further note that Sub-Saharan Africa is characterized by low pension fund contributions. The main reasons behind the phenomenon as noted by Nyangoro and Njenga (2022) include low coverage and high costs of the regressive schemes that mainly focus on formal sector employees;

the result therefore is a 22.7% coverage in pension provisions for those over the age of 60. Dorfman (2015) reports scanty pension cover of the populace of Sub-Saharan Africa. Among the reasons put forth are the limitations in structural frameworks and limitations in funds. It is thus evident that copying the paths taken by pension funding schemes in the western world, whether defined benefit or defined contribution, would likely be an ill-fit for the Sub-Saharan region. Better fitting models can only be achieved through nascent, context-specific studies on the particular factors at play in shaping willingness to issue voluntary payments to pension schemes; the current study addressed this contextual gap and sought to understand the factors, and their relative contribution, to shaping employees' voluntary additional contribution to pension schemes among public sector workers in Kenya.

There are conflicting findings on the impact of growth of funds as on subscribership to pension schemes and by proxy, additional contribution to pension schemes. Whereas Renneboog et al. (2008) suggest an increase in subscription with growth, Bikker et al. (2021) propose the contrary. Dorfman (2015) further points to a need for context specific extant literature on the impact of various factors on pension scheme outcomes within the continent – the current study thus addresses this gap by focusing on the various latent factors deemed impactful to additional pension fund contribution in the Kenyan context. Furthermore, conflicting findings on the preference of pension funds within the Kenyan context, as presented by Omollo et al. (2021) and Njogu (2014) in their postulations on the preferability of pension schemes, suggests need for comparative findings on the impact of various factors on additional voluntary pension contributions in the Kenyan context.

Thaler and Benartzi (2004) focusing on a different context posit similar findings showing that individuals allowed the option to choose pension schemes aside from those issued under a common employer scheme often apply an ill-informed diversification approach that results in lower earnings. It is thus evident that determinants of additional voluntary contribution remain unsatisfactorily understood and particularly so in the Kenya context given the nascency of the shift from defined benefit to defined contribution among public service workers.

Renneboog et al. (2008) observe that fund managers prioritize financial value creation over socially responsible investment, even though this may contradict the preferences of pension fund subscribers. However, Bikker et al. (2021) challenge this finding by suggesting that an increase in

the number of subscribers to a pension fund is associated with a decrease in individual asset holding. This suggests a discouragement of higher subscriber numbers in well-performing funds and, consequently, additional voluntary contributions to such funds. This conflicting evidence highlights the need for further research to examine the relationship between fund growth and additional voluntary contributions.

1.3 Objectives of the study

The main objective of the study was to determine the factors affecting additional voluntary pension contribution in Kenya's civil service.

The specific objectives are therefore as follows:

i. To assess the effect of personal factors on employee additional voluntary pension contribution in Kenya's civil service
ii. To assess the effect of industry-specific factors on employee additional voluntary pension contribution in Kenya's civil service
iii. To assess the effect of macroeconomic factors on employee additional voluntary pension contribution in Kenya's civil service

1.4 Research questions

The research questions following the objectives were as follows:

i. What is the effect of personal factors on employee additional voluntary pension contribution in Kenya's civil service?
ii. What is the effect of industry-specific on employee additional voluntary pension contribution in Kenya's civil service?
iii. What is the effect of macroeconomic factors on employee additional voluntary pension contribution in Kenya's civil service?

1.5 Scope of the study

The study focused on occupational pension schemes registered by the Retirement Benefits Authority (RBA). The unit of analysis of the study is the individual public service employee contributing to a pension plan. A sample size of 384 respondents was computed using Cochran's formula. Njogu (2014) reports that there are 30 public sector occupational pension schemes that serve over 30,000 employees in the public sector. The study was conducted over the period January

2023 to April 2023. The study was quantitative with questionnaires used to gather data on the study objectives. Respondents were sought primarily from Nairobi County since primary pensioning agents are headquartered in the city.

1.6 Significance of the Study

Study findings are useful to academicians, industry participants, and regulators. Relevance to the three segments is subsequently discussed.

1.6.1 Policymakers

To policymakers, the findings are useful in informing the regulatory setup guiding pension schemes as this is pivotal in ensuring well-informed pension scheme creation approaches. Understanding the determinants of additional voluntary contribution to pension schemes is useful in determining legal provisions that should be put in place to ensure sufficient catering to the needs of public sector employees through pension schemes.

1.6.2 Practitioners

To industry participants offering the services, findings are instrumental in shaping the structuring of pension schemes in light of the factors to be highlighted in the current study. This finding is of relevance to both private and public pension scheme entities looking to address the shortfall in pension scheme subscription within the nation. Additionally, as noted by Murithi (2019), the population of civil servants is fast aging thus necessitating efforts toward securing pension creation projects that ensure the longevity of financial stability. The study is useful in informing the preferences of individuals looking to find the best-fitting pension schemes.

1.6.3 Scholars

To academicians, findings are useful in addressing the contextual gaps highlighted in the dearth of findings on the implications of the shift from defined benefit to defined contribution pension schemes in Kenya and their implications on additional voluntary contribution. Additionally, study findings are useful in contributing to the conflict of findings noted in the current study.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

The purpose of this chapter is to provide a discussion of the underpinnings of the current study. The chapter begins with an elucidation of the theories informing the relationship between the variables under consideration and presenting as lenses to the subsequent exposition of empirical literature about the objectives of the study. Submitted after the extant empirical findings of the study are the research gaps uncovered in the empirical research and the subsequent conceptual framework espoused for the current study. The operationalization of variables, as informed by extant literature presents as the final inclusion of the chapter.

2.2 Theoretical foundation

Two theories shaping voluntary additional contribution of employees in the public sector are considered herein – the Agency theory Adams (1994) and Vroom's (1946) Expectancy Theory. A two-theory approach is adopted for the current study as the researcher intends to consider the problem through a dual-perspective – management and fund-member motivation. The first theory addresses the issue of management of funds in light of the information asymmetry that exists between fund managers and fund owners (contributors); whereas the second addresses the perception of the fund owners or prospecting fund owners as shaped by aspects of a specific pension fund's structuring. The theories are discussed concerning their pertinence to the current study. Moreover, noteworthy limitations of the theories and their implications are additionally put forth and discussed in relation to the current study's objectives.

2.2.1 Agency theory

According to Adams (1994), the Agency Theory is part of the positivists' group of theories that derive from financial economics that attempts to describe the relationship between the owners of economic resources (the principals) and managers (agents) charged with use and controlling of those resources. The theory is based on the premise that the agents have more information than the principals and this information asymmetry adversely affects the ability of the principals to effectively monitor their interest in the operations of a business entity. The theory assumes that the principals and agents act rationally to maximize their wealth.

The principal-agent researchers are concerned with a general theory of the principal-agent relationship. This theory can be applied in assessing the dynamics of operations between the Board of Trustees (the principals) and the Fund Managers (the agents). Agency theory is applicable in situations in which a complex relationship exists – one that could result in a conflict of interest such as investment managers taking actions that are favoring their short-term performance to earn higher investment management fees, but forgoing decisions that are likely to benefit pension funds greatly in the future (Zu & Kaynak, 2012).

Additional voluntary pension contributions necessitate a tripartite partnership in the management of pension funds which is aimed at ensuring the funds contributed by pensioners are invested and managed efficiently and professionally. Trustees are charged with fiduciary responsibility for ensuring the pension fund's affairs are managed for the benefit of the pensioners (Carmichael et al., 2003). Accordingly, different parties in pension management are charged with different roles and responsibilities and are required to report to the Board of Trustees who represent the interest of the pensioners. Kyalo (2014) observed that custodian banks were an important player in ensuring the safekeeping of financial assets owned by pension funds. The study will seek to find out how the Agency theory enhances the efficiency in running of the funds and the impact it has on the voluntary additional contribution and growth of pension funds.

The agency theory is however not without its detractors. Charles (2017) in a summative assessment of the theory notes that the control mechanisms put in place to address agency loss concerns often are more detrimental to the interest of the principles than the status quo. Furthermore, the inefficiencies introduced by delays in strategic decision-making on account of adherence to checks and balances may eventually serve to impede the economic efficiency of firms. This concern is particularly true for pension funds invested in fast-moving markets requiring rapid decision-making as an operational competency to ensure improved earnings of the principals. The concerns notwithstanding, the current theory is applied to the current study as a lens allowing for assessment of the role of pension fund management under the defined benefits and defined contribution plans and how this management or anticipated management practices impact the additional contribution to pension plans.

2.2.2 Expectancy theory of motivation

The Expectancy Theory of motivation relates to mental processes that try to explain the path an individual takes in making choices (Vroom, 1964). Motivation has been identified as a key element that psychologically drives human behavior (Tolman, 1932). In his study, he further argues how an individual perceives the world around him and motivation attached to certain actions influences the behavior of that individual. Vrooms (1964) expectancy model is premised on three factors – expectancy, instrumentality, and valance. Expectancy refers to the link between performance and outcome such that motivation is enhanced when one's performance is viewed as being directly linked to an outcome or the avoidance of a particular outcome. The second construct, instrumentality addresses the assuredness of achieving an outcome by meeting preset performance requirements. Finally, valance addresses the attractiveness of the outcome. An outcome that is viewed as highly desirable by the actor would generate high valance and this, in turn, would summon higher motivation towards achieving the performance requirements of the job (Vroom, 1946).

Expectation refers to the supposition or assumption that certain action will result in a given outcome or consequence, thus the results are dependent on the effort applied. This, therefore, implies that the amount of effort an individual will apply will be dependent on the perceived or expected outcome. An individual`s motivation is an outcome of how much an individual wants a reward. This means that if a civil servant expects to have a good retirement package, they will make efforts to contribute a higher percentage of their salary towards retirement to achieve his /her goal which then informs their attitude towards the contributory scheme. The theory is thus of pertinence to the current study as it predicates a contributor's effort towards issuing additional voluntary contributions on factors deemed impactful to the outcome of additional contribution. The factors considered in the current study are macroeconomic factors, personal factors and industry-specific factors.

A noteworthy shortcoming of the expectancy theory of motivation is its oversimplification of human motivation (Parijat & Bagga, 2014). The level of exertion employed by various actors aiming at achieving particular ends differs and this difference may further be affected by changes in valance and instrumentality. The dynamism of these factors in determining the outcome of motivation is unsatisfactorily addressed in Vroom's (1964) model. This concern is noted in the

current study but does not merit the researcher's disregard of the theory as it offers utility in understanding the motivation of employees as informed by their voluntary additional contribution to pension schemes in Kenya.

2.3 Empirical Review

This section provides a discussion of empirical extant findings pertaining to the objectives of the study. The section is thus divided into three parts, each addressing a particular objective.

2.3.1 Effect of macroeconomic factors on employee additional voluntary pension contribution

The link between economic development, as evidenced by GDP trends, and pension plan contributions is depicted in the pre-2017 Belarusian pension scheme (Lisenkova & Bornukova, 2017). Lisenkova and Bornukova (2017), in a quantitative study featuring a regression model, note that all post USSR countries, following dissolution of the Soviet Union, fell into economic disarray and consequently experienced high mortality rates and low birth rates. This effect was however less pronounced in Belarus which saw a shielded effect to its economy following a relatively stable political milieu. The 2000s economic boon period saw a rapid rise in living standards as economic uncertainty was significantly subdued by economic growth thus allowing the government to invest in maternity care and child benefits – a move that saw a climb in birth rates. The impact to the pension contribution is depicted in the fact that the country enjoys the highest pension contribution rate with prior to the 2017 reforms stood at 29% allowing for a pension contribution plan that equated to 2.37 times the poverty level (Lisenkova & Bornukova, 2017). The findings that point to a direct link between economic growth and pension contribution. Essentially, a relatively high regional GDP, signaling favorable economic performance results in high income amongst employees; this high disposable income can thus be channeled towards pension contribution schemes. It is however noteworthy that this link is not necessarily in the case of Lisenkova and Bornukova (2017) indicative of an inclination towards higher voluntary contribution as the 29% contribution rate is a function of policy. Nonetheless,

Whereas Lisenkova and Bornukova (2017) investigate the link between GDP and pension contribution with GDP as the independent variable Ashley, et al. (2019), in a study featuring the two variables consider the inverse relationship. Ashley et al. (2019) employ a cross-section

research design based on secondary data with findings from a regression model that pension contributions account for 94.93% variance in Ghana's GDP. The findings therefore highlight the primacy of pension schemes in impacting on GDP. In considering these findings in light of those by Lisenkova and Bornukova (2017) it may be the case that the relationship between the two variables is one of co-dependence in that an increase in GDP allows to increased disposable income and this is channeled into pension schemes. The pension schemes then invest this extra capital into profit generating endeavors and the resulting gains further present in growing GDP. These findings are of pertinence to the current study as they signal to possible covariance between the two variables; this shall be tested in the current study.

Cuadros-Meñaca (2020) note that the 2008 financial crisis had far-reaching impact on Columbia's economy and subsequently, on household economics as unemployment rates increased. Cuadros-Meñaca (2020) applies an instrumental variable (IV) approach to assess the effect of additional remittances – a proxy for household economics – on pension and health contributions. Findings reveal that informal workers that receive additional remittances are more likely than their non-recipient counterparts to contribute towards their pension and health plans. Furthermore, amongst workers at prime working age, women were more likely, than their male counterparts, to remit towards pension and health plans; boys in schooling age were also more likely than girls to do the same. These findings thus point to the role of both employment conditions and gender in determining the tendency to engage in pension contribution that are over and above the minimal required. The two variables are therefore considered in the current study in order to assess the validity of the same in the Kenyan context.

Tracing the trend in pension plan subscription across the 1950s in the UK, Thurley, and Lucinda (2009) note that high marginal income and corporate taxes made pension provisions highly lucrative for firms looking to save on taxes. Additionally, policies of the time-constrained cash wages provided an impetus for consideration of non-cash remuneration alternatives of which pension benefits stood out as a lucrative target. The fall of the UK stock market in 1974 however negated the trend in growth with the 50% decrease unmatched by the 2000 to 2003 fall. Additionally, inflation rates of up to 10% in the 1970s resulted in huge capital losses hence presenting pension schemes as a significant expenditure point for companies. The wave of social security acts occasioned to industries in the UK between 1973 and 1997 served to ensure equity in

subscription to pension allocation with the rights of women, early leavers, and spouses reflected in the limitations of price indexing practices that have introduced inequity in the pension space. The inadvertent effect of these changes, however, was the increase in operational costs – a cost that would then be transferred to employers in pension schemes. Fiscal policy thus is shown to have an impact on contribution towards pension funds as a function of the structuring of the same. In the current study, this consideration is appreciated in inclusion of the factor as a determinant of additional person contribution.

2.3.2 Industry specific factors

Choi et al. (2002) highlight a 20-year trend of shifting from typical defined benefits plans to such defined contribution plans as 401K. In assessing the main implications of the shift, Choi et al. (2002) note that defined contribution pension plans place the burden of ensuring sufficient savings upon retirement squarely on the shoulders of the employee. The responsibility notwithstanding, employers wield a significant level of control over the details of contribution adhered to by their employees. This concern brings into question the issue of the financial literacy of employees. Findings of Choi et al.'s evaluation of tends is 401K savings reveal that passive decision-making plays a significant role in contributions. Considering additional contribution to pension plans would thus be curtailed by the passivity and lack of understanding associated with current pension plan contribution setups. Given that employers wield the power to structure contribution plans, passive decision-making among employees has a direct implication on eventual earnings. As an example, companies without automatic onboarding of employees to 401K plans saw an up to 1-year delay in subscription to 401K plans.

Additionally, the levels of contribution issued as default by the employer were adhered to with little effort among the employees to switch to plans that would offer higher retirement benefits; this observation is particularly noteworthy given that most of the surveyed employees noted that they did not make a sufficiently high contribution to support their retirement plans. The implication of these findings, therefore, is that the choice of direct contribution plans should be accompanied by considerably high financial literacy to avoid the trap of passive decision-making. These findings can be assessed in light of the agency theory whereby the employer plays the role of the agency charged with the responsibility of crafting the defined contribution plans that maximize employee benefits. To ensure optimal outcomes, the agency cost must be kept at a minimum through the

financial literacy of the client who in this case would be the employee. Choi et al. (2002) further recommend government intervention in determining the defaults that are at play in the market. Essentially, the government, as suggested by the authors, should play the role of minimizing the risk associated with a financially illiterate employee base by enforcing rules that aid in structuring the basal states of such defined contribution plans like the 401K.

Bonizzi et al. (2020) researched the evolution of pension fund demand following reforms in pension policy in two nations – Colombia and Peru. Bonizzi et al. (2020) note a substantial increase in demand for pension plans regardless of their variegations with market growth viewed across both defined benefits and defined contribution schemes. A carry-over effect was further witnessed as the financialization of markets, defined as growth in overall size and significance of financial markets of a country, correlated with the steep growth in pension funds. The findings are therefore telling in two main regards. Firstly, the growth of pension funds is largely dependent on the demand for the products by the populace and this demand is to a large extent determined by the policies put in place to define the instruments of pension planning. This observation is supported by findings by Nicholl et al. (2015) who note that the growth in pension funding in the United States is largely due to the institution of such saving plans as the 401K and less so on account of the preferability of the traditional defined benefits plans. Secondly, the growth of funds is directly associated with the growth of financial markets due to the increased capital allocations that can be achieved through this avenue. This proposition is further supported by Borg et al. (2019) who find that pension schemes allow for pooling and allocation of funds in a manner such as to ensure better integration of capital markets – a fete that banking sectors are yet to achieve. These findings are of pertinence to the current study as they suggest that voluntary additional contribution of funds may be pre-shaped by policy and that this has implications on the overall growth of the funds, whether defined benefits-oriented or defined contribution-oriented.

Renneboog, Tr Horst, and Zhang (2008) note that fund managers prioritize financial value creation over socially responsible investment despite the fact that this may be the preference of pension fund subscribers. This finding is however challenged by Bikker et al. (2021) who note that an increase in subscribership to a pension fund is correlated with decreasing individual asset holding thus pointing to disincentivizing of higher subscriber numbers to well-performing funds and thus additional voluntary contributions to such funds. This gap necessitates an additional assessment of

the relationship between fund growth and additional voluntary funds contributions. The current study addresses this gap by assessing the impact of the growth of funds on the preference for defined contribution over defined benefits schemes.

2.3.3 Effect of personal factors on employee additional voluntary pension contribution

Blake et al. (2014) posit that a crucial characteristic of defined contribution schemes is their allowance of redistribution of consumption in a manner consistent with a future pensioner's personal preferences. Assuming pension contributors as rational life cycle financial planners, Blake et al. (2014) apply a stochastic lifestyle model to estimate an optimal pension planning contribution setup that considers the financial preferences of the individual. Findings reveal that an age-dependent plan involving redistribution of savings and assets. The plan reveals a tradeoff between current and anticipated future spending preferences. Blake et al. (2014) propose an initially high equity investment period with a gradual shift to bond-type investment and finally, during the decumulation period of one's employment, a shift to annuities. The finding thus links age and investment strategy pointing to age as a significant determining factor in consideration of not only amounts to be invested but also the manner through which these funds are to be invested a non-pension restricted horizon. These findings are of pertinence to the current study as they offer practical consideration of the multiplicity of investment options that a person considering pension contributions is presented with. Essentially, the choice to engage or disengage from additional contribution to one's pension plans are made alongside decisions on equity and bond investments hence the need to consider other factors as determinants of additional investment into pension plans. The current study addresses this concern by focusing on the role of macroeconomic and personal factors in determining the decision to engage in additional pension contribution.

Guariglia and Markose (2000) employing data from the British Household Panel Survey conducted a study on the determinants of additional pension fund contribution and the ability of savings to offset additional pension contributions in catering for the needs of pensioners. Employing a probit and tobit model the researchers find that personal pension coverage is higher for males than females. Additionally, persons with A-level of educational qualification were more likely than their higher and lower-level employed counterparts to contribute towards pension schemes. Lower salaried individuals were less likely, than their higher paid counterparts, to contribute towards pension schemes and those that considered their current earnings as good were more likely than

those with lower perceptions of their earnings, to contribute towards personal pension schemes. In relating savings patterns with tendency to engage in contributions to personal pension plans, Guariglia and Markose (2000) show that those with a tendency to engage in traditional savings were slightly more likely (24.34%) to contribute towards personal pension schemes (19.08%). Personal savings were deemed insufficient in addressing pension needs. These findings are of pertinence to the current as they show that the decision to increase one's contributions to a pension scheme are made in a context of multiple other determinants and contributors. Whereas Blake et al. (2014) consider the role of contributors as rational actors, Guariglia and Markose (2000) consider the subjective considerations that may be less than rational in considering one's likelihood to engage in additional pension contributions; these less than rational factors present, for example, in estimation of one's earnings as good or not. The current study considers both aspects – rational fact-based contributors and subjective factors – as determinants of additional contributions to pension schemes thus addressing both the sensibilities of Blake et al. (2014) and Guariglia and Markose (2000).

Praja et al. (2020) sought to investigate the impact of pessimism on the tendency to engage on long-term investment as depicted amongst students during the COVID 19 pandemic. A PLS-SEM model was used to assess the relationship between defensive pessimism, purchase intention, and long-term investment with the mediating role of mindset priming further considered. Findings revealed that persons with high defensive pessimism and purchase intention were most likely to purchase pension-fund insurance. The specific constructs considered under defensive pessimism were anticipatory nature, high self-control, and future sustainability. High mindset priming was further considered to supplement the impact of defensive optimism as it increased open mindedness, realism, objectivity, and mitigates against the impact of over-estimation of one's capabilities (Praja et al., 2020). These findings are therefore of pertinence to the current as they introduce the dimension of personal characteristics that may have a marked impact on the outcomes of additional savings remitted by employees in the bid to secure their future.

Jacobsen et al. (2014) in a study similar to that by Praja et al. (2020) in that both focus on personal psychological determinants of long-term investments note that the gender difference in engagement in stocks training is well supported by extant literature. The particular characteristics distinguishing the differences in gender in as far as investments are involved is however less

widely researched (Jacobsen et al., 2014). Jacobsen et al. (2014) posit that this difference could in part be explained by optimism predisposition. Using a regression model, the authors show that consideration of optimism vs pessimism as a determinant of investment in stocks results in disappearance of the gender difference in outcome. This finding is therefore of importance in the current study as it points to a conflation of factors deemed impactful to additional factors contributions. The gender effect opined by Cuadros-Meñaca (2020), for instance, may be less apparent when considered to the psychological predisposition factors presented by Praja et al. (2020) and Jacobsen et al. (2014). The current study, by considering different subsets of factors aims to offer insights into the relative impact of the factors with the aim of allowing for higher deterministic ends in considering alterations to current pension plans in the bid to increase voluntary pension contributions.

Clark and Pitts (1999) note that most employees are offered no choice in pension schemes upon taking up positions with their employers. The typical practice was such that employers offered a single benefits package hence the employed simply took on the offered option without consideration of alternatives. This linkage between job and benefits plans made it difficult to decipher the factors that influenced job selection aside from those that influenced the choice of a benefits plan. Through data sourced from North Carolina State University Clark and Pitts (1999) were able to conduct a study on the choice of benefits plans as new employees were offered a 30-day period within which to subscribe to a defined benefits or a defined contributions plan. Among the noted factors determining a selection of plans was the age of the employee. Defined benefits plans, as noted by Clark and Pitts (1999) offer predictability in outcomes for older employees on account of mitigated personal risk of selection investment portfolios. Additionally, older employees, particularly in academia are more likely to be granted tenure hence increasing chances of higher pay and secured long-term employment. Additional contribution plans in such a setting would thus not be alluring to older persons as higher pay would by default guarantee high pension earnings. Nevertheless, such factors as a possible job change, financial market fluctuations, probability of employee-initiated changes to pension plans, and uncertainty in the time of retirement affect the benefits to be gained under defined benefits plans. Additionally, common to the two pension plans would be the impact of inflation and the growth rate of real earnings (Clark & Pitts, 1999).

Nicholl et al. (2015) taking a stakeholder approach in the assessment of public pension plans notes the need to redesign plans in an ad-hoc manner as a one-size-fits-all approach has so far proven unsustainable. Nicholl et al. (2015) note that stakeholders are unlikely to prioritize similar objectives, nonetheless, it is necessary that the various voices of employers, employees, and regulators be heard in the structuring of equitable pension schemes and particularly so given the vicissitudes of current financial markets. Four areas of focus are discussed – affordability and sustainability, benefit adequacy, distribution of risk, and workforce management (Nicholl et al., 2015). Focusing on the affordability of plans, Nicholl et al. (2015) note that financial crises of the recent past have resulted in a marked hesitancy, among employers, to contribute towards robust pension plans thus necessitating increased contribution of employees to their pensions schemes. This phenomenon is apparent across defined contributions, defined benefits, and hybrid pension plans. Furthermore, Nicholl et al. (2015) note that such practices as pension spiking – the deliberate increase of final earnings through such efforts as overtime – continue to strain pension schemes. To mitigate against such concerns of affordability in payouts, pension scheme managers enforce increased vesting periods, higher retirement ages, reduced cost of living adjustments, and change rate of benefit accrual, among other mitigatory provisions. The perception of such changes or the likelihood of such changes under either defined benefit or defined contribution schemes would thus be affected; the current study seeks to address this concern by focusing on the impact of affordability on employee additional voluntary pension contribution.

The question of affordability and sustainability can further be assessed through the lens of pooled risk. Nicholl et al. (2015) note that among the distinguishing attribute of defined benefits, defined contribution and hybrid plans is the distribution of risk. Questions of affordability assessed from either the employer's or the employees' perspective are negated by concerns of sustainability in that regardless of how affordable, compromise of sustainability would be debilitating to the interest of all involves in the pension plans. Kwena and Turner (2013) posit that the government’s push to ensure maximum pension coverage has largely been achieved through the proliferation of indirect contribution plans. This growth is evidenced by an increase from 30.6 million subscribers, in 1984 to 50.3 million in 1998. During the same period, subscriptions to defined benefit plans declined from 30.2 million to 23.0 million. The question that therefore begs is whether this ‘win’ is a face value one. Nicholl et al. (2015) note that defined contribution schemes place the risk of determining portfolios on the shoulders of the employees. This would therefore result in additional

risk both on account of a lack of pooled risk Kwena and Turner (2013) and on account of a lack of sufficient financial literacy among employees (Clark & Pitts, 1999). The issue of affordability is thus assessed in the current study to shed light on the implications of risk and cost-cutting approaches among stakeholders, on voluntary additional contribution to pension plans.

The question of pooled risk and affordability is further explored by Borg et al., (2019) in an exploration of the possibility of establishing harmonized pension products across the European Union. Borg et al., (2019) postulate that European demographics are in a state of flux – life expectancy increases, and the entry of boomers to the retirement group is accompanied by declining fertility rates. The sum effect of these changes is that the pensionable demographic has widely increased and will continue to do so in the future; this, therefore, calls for innovative pension plans aimed at ensuring maximum coverage and affordability while at the same time, catering to sustainability concerns. Borg et al. (2019) further note the intricate relationship between pension plans and capital markets unions. Borg et al. (2019) posit that a pooled pension plan across Europe would allow for free movement of capital to the end of better-integrated capital markets – an achievement yet to be attained by the banking sector. Essentially, through the pooled capital accesses through a pooled pension plan, greater financial outcomes can be achieved thus mitigating concerns of affordability both from the perspective of the payers and the distributors of benefits. It may be the case, in relating this finding to the current study, that additional voluntary contribution may be influenced by the risk resulting from the shift from defined benefit to defined contribution schemes. This concern is assessed in light of its impact on to voluntary additional contribution to pension plans in Kenya's public sector.

The main motivation for shifting from a defined benefit to a defined contribution plan in Kenya's public sector was the achievement of equity in financing whereby a load of catering to the financial needs of pensioners was shifted from solely being on the employer side to being shared by the employer and the employee (Wanjira, 2005). Wanjira (2005), employing a descriptive study design focusing on public sector employees of the Retirement Benefits Authority of Kenya find that the shift from defined benefits to defined contribution scheme in the public sector was met with a moderate change in perception. Of note, however, was that a sizable number of employees (18%) favored and remained with the defined benefits scheme following the shift to direct contribution plans. The main reason for this was the predictability in benefits that goes with the defined benefits

scheme. The finding is of significance to the current study as it indicates a force of inertia among 18% of the employees. Given the motivation of the shift to the defined contribution scheme, it is inferable that those that preferred the defined benefits scheme would be disgruntled if required, by legislation, or by occasioning unwieldy constraining conditions, to shift to the defined contributions plan. This effect may present in a disincentivizing push to participate in additional contribution to pension schemes.

The resistance to change scale developed by Oreg (2003) is designed to estimate an individual's dispositional inclination to resist changes. The scale is operationalized through four main factors – routine seeking, emotional reaction, short-term thinking, and cognitive rigidity. Routine seeking speaks to the inconvenience associated with perturbations to the status quo. The factor thus speaks to such issues as preferences or predefined work plans despite the merits that may be associated with changes to the same. The second dimension, emotional reaction, speaks to the evoked feelings associated with a change initiative. An example of this would be a feeling of stress associated with a change from defined benefits to defined contribution plans. The third dimension, short-term thinking, speaks to a lack of consideration of long-term benefits that would result from a change despite potentially evidenced positive outcomes. An example of this presents a predisposition to opposing change without prior consideration of the implications of the change. The fourth and final factor, cognitive rigidity, speaks to the ease by which individuals alter pre-arrived-at conclusions. This dimension is concerned with the ease of changing one's mind. These dimensions are of importance to the current study as they are used in operationalizing the resistance experienced in making the shift from the defined benefits to the defined contributions plans and how this resistance affects willingness to engage in additional contribution to pensions schemes.

2.4 Research Gaps

The forgoing exposition of literature indicated three main gaps in research – conflicting findings, a need for context-specific assessment, and limitations in structural frameworks and funds. These gaps are subsequently discussed. Conflicting findings are apparent in Renneboog et al (2008) and Bikker et al (2021). Decreased subscription with the growth of funds: Renneboog et al. (2008) found evidence suggesting a decrease in pension fund subscription as funds grow. Increased subscription with the growth of funds: In contrast, Bikker et al. (2021) reported increased subscription as funds grow. This conflicting finding requires further investigation and clarification.

Furthermore, Renneboog et al. (2008) and Bikker et al. (2021) provide conflicting findings regarding the preferability of defined contribution and defined benefit schemes for employee voluntary pension contributions. Further research is necessary to reconcile these conflicting results.

Context specific assessment is suggested by Dofman (2015) to allow for insight on the impact of factors in a localized context. Dorfman (2015) emphasizes the need for context-specific assessment to understand the factors influencing pension fund subscriptions within the specific context of Kenya's civil services. Furthermore, the limitations of structural frameworks and their impact on employee voluntary pension contributions need to be further explored. The study by Dorfman (2015) provides insights into such limitations. The limitations within pension funds should also be examined to understand their influence on employee voluntary pension contributions. Omollo et al. (2021) and Njogu (2014) highlight this need. Among the structural factors alluded to by the authors (Dorfman, 2015; Omollo et al, 2021; Njogu, 2014) are as follows: Complexity and Inaccessibility: Structural frameworks of pension funds may be complex and difficult to understand for employees. The lack of transparency and clarity in the design and operation of pension funds can hinder employees' ability to make informed decisions about voluntary contributions. Administrative Burden: The administrative processes associated with pension funds can be burdensome for both employers and employees. Complicated paperwork, extensive documentation requirements, and lengthy processing times may discourage employees from participating in voluntary pension schemes. Lack of Flexibility: Some structural frameworks may lack flexibility in accommodating employees' changing financial circumstances or needs. For example, rigid contribution schedules or limited options for adjusting contribution amounts may deter employees from participating or increasing their voluntary contributions. An assortment of these factors forms the basis of the current study.

2.4 Conceptual framework

This section provides a representation of the relationships under assessment in the current study; these are in keeping with the study objectives. Figure 2.1 provides a summary of the conceptual framework. Each of the constructs is, as substantiated by literature considered potentially impactful to the voluntary additional contribution to pension plans. The study aims to assess the

contribution of each factor when viewed in concert with other observed factors. These relationships are depicted in the conceptual framework below.

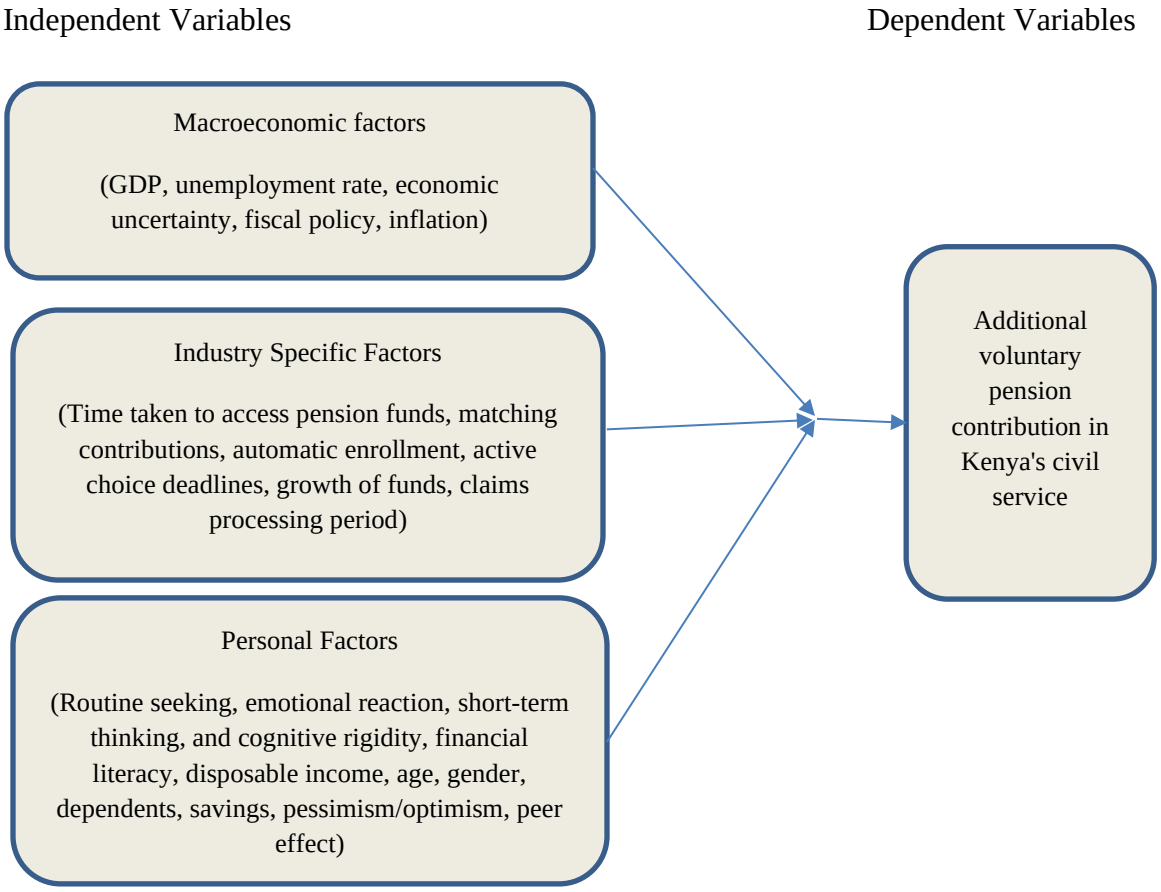

Figure 2.1 Conceptual framework

2.5 Operationalization of variables

This section provides a summary of the variables and sub-variables under assessment in the current study. The sourcing of variables and measurement are further detailed in table 2.1 below.

Table 2.1 Operationalization of variables

Variable	**Construct**	**Measurement (Sub-variables)**	**Scale**	**Source**
Independent	Macroeconomic factors	GDP, unemployment rate, economic uncertainty, fiscal policy, inflation)	Likert Scale (1 – strongly disagree; 2 – disagree; 3 – moderately agree; 4 – agree 5 – strongly agree)	(Lisenkova & Bornukova, 2017) (Cuadros-Meñaca, 2020) (Guariglia & Markose, 2000) (Thurley & Lucinda, 2009) (Ashley et al., 2019),
Independent	Industry-specific factors	Time taken to access pension funds, matching contributions, automatic enrollment, active choice deadlines, growth of funds, claims processing period	Likert Scale (1 – strongly disagree; 2 – disagree; 3 – moderately agree; 4 – agree 5 – strongly agree)	(Bonizzi et al., 2020) (Choi et al., 2002) (Gorina & Hoang, 2019) (Renneboog et al., 2008)
Independent	Personal factors	Routine seeking, emotional reaction, short-term thinking, and cognitive rigidity, financial literacy, disposable income, age, gender, dependents, savings, pessimism/optimism, peer effect	Likert Scale (1 – strongly disagree; 2 – disagree; 3 – moderately agree; 4 – agree 5 – strongly agree)	(Adaku et al., 2017) (Blake et al., 2014) (Guariglia & Markose, 2000) (Cuadros-Meñaca, 2020) (Praja et al., 2020) (Jacobsen et al., 2014)
Dependent	Additional voluntary pension contribution in Kenya's civil service	Opting for or against voluntary contribution to one's pension scheme.	Likert Scale (1 – strongly disagree; 2 – disagree; 3 – moderately agree; 4 – agree 5 – strongly agree)	(Akpanibah & Oghen'Oro, 2018).

2.5 Chapter summary

This chapter provides a literature review for the study. The purpose of the chapter was to discuss the theoretical foundations of the study and present empirical literature relevant to the research objectives. The chapter adopts a two-theory approach, considering the Agency theory and Vroom's Expectancy Theory. The chapter then reviewed empirical literature related to the objectives of the study. Additionally, the chapter discussed the effect of macroeconomic factors on employee additional voluntary pension contributions, such as the link between economic growth and increased disposable income available for contributions. It also examined industry-specific factors, including the role of financial literacy and employer-defined contribution plans in influencing employee contributions. Overall, the literature review provides a comprehensive overview of the theories and empirical research relevant to the study's objectives, highlighting the gaps in the existing literature and setting the stage for the subsequent chapters of the study.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter provides an elucidation of the approaches to be taken in addressing the study objectives. Contained herein are therefore the research philosophy, research design, population of the study, sampling design, data collection approach, data analysis approach, research quality considerations, and ethical considerations.

3.2 Research philosophy

According to Cooper and Schindler (2006), a positivist research philosophy is based on the fact of objectivity of constructs and therefore inferences based on the interrelation of objectively understood constructs. The current study employed a positivist approach in measuring the study variables and making statistical inferences based on data to be collected on the various variables. The role of the interpreter is thus limited to the collection of data and interpretation of findings based on statistically supported inferences on the nature of the relationship between the constructs under study (Cooper & Schindler, 2006).

3.3 Research design

A descriptive-correlational design was applied to the current study. As noted by Saunders, Lewis, and Thornhill (2003), descriptive correlational research design allows for the obtaining of information on study variables and the relationships that occur naturally between and among them. This research design is in keeping with the positivist philosophy adopted for the current study. In applying the descriptive-correlational design, the researcher asserts that data collected on the study objectives, being stable and objective, was useful in answering questions presenting the research questions and as captured in the objectives of the current study. The study thus serves the dual purpose of articulating the descriptions of the variables and exploring the nature of their interrelation. The approach thus allowed for the filling of the aforementioned gaps of the study – the dearth of findings and conflicting findings.

3.4 Population of the study

According to the Public Service Superannuation Scheme Handbook (2020), the current pension scheme (Cap 189) covers about 70% of the public service employees, while the rest are covered

by other schemes such as Teachers Service Commission, Parliamentary Service Commission, Judicial Service Commission, and National Police Service Commission. The handbook further states that the current pension scheme has about 300,000 active members and 200,000 pensioners and dependents as of October 2020. According to the PSC (2012), there are 320,668 employees operating as civil servants. These include public servants serving across the 22 cabinet ministries. The employees thus form the population of the study. Data was collected across all the ministries to ensure maximum representation of the study population and the sample size to be arrived at. Efforts were further put in place to ensure homogeneity in the level of employees considered for the study.

3.5 Sampling design

The sample size of the study was derived from the 320,668 total number of employees using Cochran's formula (Cooper & Schindler, 2003). Data was subsequently collected across all the 22 ministries with a random sampling approach utilized in collection of the data from each of the departments. Subsequently presented is the sample size calculation approach applied to the end of arriving at the sample size for the study.

Sample size formula:

$z\text{^}2 * p(1-p)/\ (1 +\ ((z\text{^}2 * p(1-p)/e\text{^}2\ N))$ + et

Where:

N = size of population (320,668)

p = population reliability (or frequency estimated for a sample of size n), where p is 0.5 which is taken for all population

e = margin of error considered as 5% for 95% confidence level

z = value for the selected alpha level (at 0.05 level of significance), Z is 1.96

et = error term

$z\text{^}2 * p(1-p)$= 384.16

$1 +\ (\left(z^2 * \frac{p(1-p)}{e^2 N}\right) = 1.001$

384.16/ 1.001 = 384.16.

The sample size is therefore 384 respondents.

3.6 Data collection

Data was collected using structured questionnaires. Questionnaires were chosen on account of their standardization of data and ease of distribution (Saunders, 2003). A proportional allocation was applied hence 18 (384/22) per ministry. A purposive sampling approach was applied as only staff with a minimum of two years of working experience in managerial or management training positions was considered as respondents. These were chosen on account of their ability to provide insightful responses to the questions provided on account of their knowledge gathered through experience in the departments. A drop-and-pick approach was used in the distribution of the questionnaires. The study questionnaire was structured into seven main sections. The first was addressing biodemographic information. The subsequent six were addressing the variables – growth of funds, affordability, financial literacy, claims processing period, resistance to change, and voluntary additional contribution to pension, respectively. Qualified research assistants were employed for the task of questionnaire distribution and collection. All data was compiled into a single datasheet for subsequent preparation for analysis following the study objectives.

3.7 Diagnostic tests

An ordinal regression analysis was performed to assess the impact of the independent variable on the dependent variable. The data was assessed against the four main assumptions of ordinal logistic regression. The first required that dependent variables be measured on the ordinal scale, this was satisfied. The second required that one or more of the independent variables be either continuous, categorical, or ordinal. All the independent variables were measured on the ordinal scale. The third required that no instances of multi-collinearity be apparent in the independent variables. No instances of multicollinearity were observed in the data. A test of parallel lines with the null hypothesis of similar slope coefficient across response categories was tested. The significance value was higher than 0.05 thus indicating that the odds of falling into a higher or lower category of the dependent variable were the same across categories of the predictor variables. This finding indicated the ill-fit of ordinal logistic regression. The foregoing assumptions were however met hence indicating the suitably of the analysis approach.

Table 3.1: Test of parallel lines

Test of Parallel Lines

Model	-2 Log Likelihood	Chi-Square	df	Sig.
Null Hypothesis	814.998			
General	657.134[b]	157.864[c]	105	.001

The null hypothesis states that the location parameters (slope coefficients) are the same across response categories.

a. Link function: Logit.

b. The log-likelihood value cannot be further increased after maximum number of step-halving.

c. The Chi-Square statistic is computed based on the log-likelihood value of the last iteration of the general model. Validity of the test is uncertain.

Factor analysis is a statistical technique used to identify and explain the underlying factors or latent variables that explain the interrelationships among a set of observed variables. It aims to reduce the dimensionality of a dataset by grouping variables that are highly correlated and represent a common underlying construct (Cooper & Schindler, 2006). The approach was used to explore the presence of latent factors in the broader construct – personal factors. This was following an observation of sub-par reliability scores for the scale as discussed in section 4.2.

3.8 Data analysis

SPSS version 27 was used as the primary data analysis tool. Collected data was assessed for completeness and subsequently imported onto SPSS for analysis. A preliminary descriptive analysis was performed to capture the summary of the data as indicated by mode (for ordinal responses) and median for the quantitative ordinal data captured through Likert scales. As a preamble to the ordinal logistic regression, confirmatory factor analysis was performed to assess the ordering of the specific sub-variables in light of the presented study constructs. An Ordinal logistic regression model was then applied to the study in the bid to address the relationships between the various variables included in the study (Cooper & Schindler, 2006). The analysis equation applicable for the study was subsequently presented.

Given Y as an ordinal outcome with J categories, the probability of being in category Y which is less than or equal to the total number of categories relative to the probability of being in a category greater than Y provides the logit function of the category Y.

$$log\frac{P(Y \leq j)}{P(Y > j)} = logit(P(Y \leq j)).$$

The generalized linear model deriving is thus shown below:

$$\log\left(P(Y \leq j)\right) = \alpha j + \beta 1x1 + \beta 2x2 + \beta 3x3$$

$$log\frac{P(Y \leq j)}{1 - P(Y \leq j)} = \alpha j + \beta 1x1 + \beta 2x2 + \beta 3x3$$

Where:

$P(Y \leq j)$ = Probability of placement in a category of voluntary additional contribution to pension (Y)

$1 - P(Y \leq j)$ = Probability of placement in a category other than that indicated in $P(Y \leq j)$ above

A reference category was used as the reference and comparative basis of placement in other categories of the dependent variable, voluntary additional contribution to pension.

Y is the dependent variable – voluntary additional contribution to pension

αj is the intercept.

β_1, β_2, and β_3 are the regression coefficients for the variables – macroeconomic factors, industry-specific factors, and personal factors.

x_1, x_2, x_3 are the aforementioned independent variables.

3.9 Research Quality

According to Kothari (2004), research quality involves ensuring that a study is conducted both validly and reliably. The validity of the study was ensured through consideration of pilot study. During the exercise, study respondents were required to comment on the suitability and understandability of the questions in addressing the constructs.

3.10 Ethical considerations

Approval for the study was sought both from the internal ethics board and from NACOSTI. Subsequently, all study responses were de-identified to protect the identity of the respondents. Study data was password protected with the information availed only to the researcher and the research supervisor as needed. The data was exclusively used to address the objectives of the

current study and all respondents were informed of their right not to participate or to desist from continuing with the study at any point of their choosing.

3.11 Chapter summary

This chapter provided an overview of the research methodology employed in the study. The discussed the research philosophy, which is positivism, emphasizing the objectivity of constructs and the use of statistical inferences. The research design chosen for the study is a descriptive-correlational design, which allows for the exploration of relationships between variables. The population of the study consists of 320,668 civil servants working across 22 cabinet ministries. The sample size is determined using Cochran's formula, resulting in 384 respondents. Data collection is done using structured questionnaires distributed among the ministries, with a proportional allocation of respondents. The questionnaires include sections on biodemographic information and various study variables. Data analysis is conducted using SPSS, with a descriptive analysis performed initially and then an ordinal logistic regression model applied to examine the relationships between variables. The chapter also discussed the quality considerations of the research, including a pilot study for validity and reliability assessment. Ethical considerations are addressed, with approval obtained from the ethics board and measures taken to protect respondent anonymity and data confidentiality.

CHAPTER FOUR: PRESENTATION OF FINDINGS

4.1 Introduction

The purpose of this chapter is to provide findings in keeping with the objectives of the current study. The section is divided into four main segments – response rate, demographic information, study objectives, and summary of findings.

4.2 Pilot study findings

The validity of the questions was confirmed by primary respondents who noted that the questions were fitting of the constructs under assessment. Data from the pilot study was further used to assess the reliability of the scales used. A Cronbach alpha score of 0.7 was required to ensure the reliability of the scales. All scales, from a pilot test of 20 respondents, presented Cronbach ratings higher than 0.7. Scale testing of personal factors, after collection of data, however revealed ratings lower than 0.7 hence meriting the exploratory factor analysis for the construct.

Table 4.1 Reliability score macroeconomic factors

Reliability Statistics

Cronbach's Alpha	N of Items
.902	5

Table 4.2 Reliability score industry-specific factors

Reliability Statistics

Cronbach's Alpha	N of Items
.863	6

Table 4.3 Reliability score personal factors

Reliability Statistics

Cronbach's Alpha	N of Items
.492	12

4.2 Response rate

The study targeted 384 respondents. A total of 375 responses were collected thus placing the response rate at 97.6%. Baruch (1999), in a study examining 175 different studies notes that the average response rate was 55.6% thus indicating that the current study's response rate, being well above the average, is sufficient for inferring the relationship between the variables as presenting from the population under study.

4.3 Descriptive statistics

4.3.1 Demographic information

Respondents were required to indicate the ministry in which they operated and the number of years for which they have worked within the respective ministries. Findings indicated an under-representation of some regions with Ministry of Mining, Blue Economy, and Maritime Affairs having the lowest representation on account of non-response from the targeted respondents. The findings, however, indicate representation of at least 13 respondents were department.

The mean number of years of service was 10 years whereas the median was 8 years. This therefore indicates that most of the respondents had served under a decade. The respondents were required to provide feedback on their general years of service to the civil service in order to accommodate their pension contributions across different departments. The figures therefore indicated rounded off figures across various ministries and civil service posts. Figure 4.1 provides a summary of the findings on years of service.

4.3.2 Variables descriptive statistics

4.3.2.1 Extent of additional voluntary pension contributions

Respondents were required to provide ratings on their involvement in voluntary pension contributions. Figure 4.2 provides a summary of responses. Majority respondents, 64.43% indicated that they did or certainly did participate in additional voluntary pension contributions. This therefore indicated that the majority of respondents did participate in additional voluntary contributions. Only 17.38% disagreed or strongly disagreed with the statement thus pointing to general involvement in additional voluntary contributions. A fraction of the respondents, 18.18%, responded 'neutral' to the question.

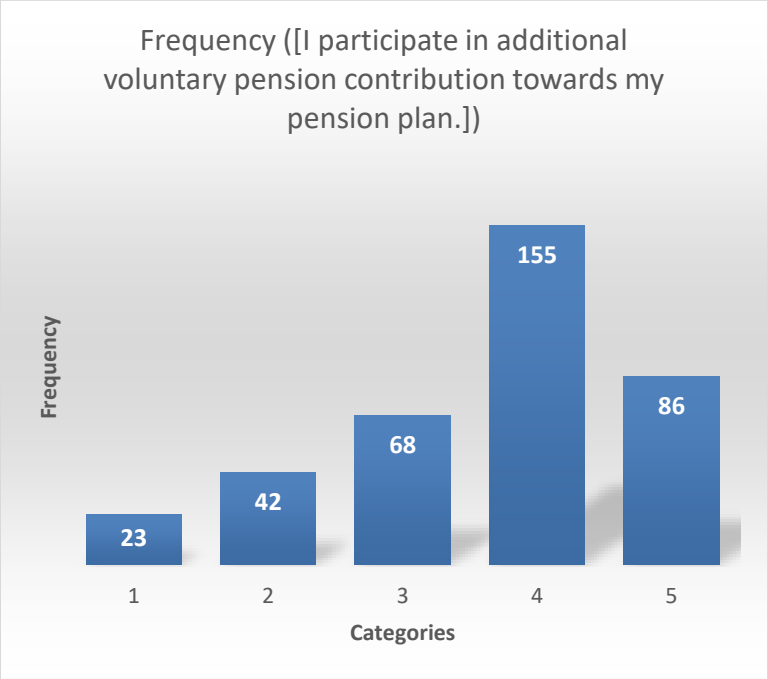

Figure 4.1 Additional voluntary pension contribution

The relationships between the dependent and independent variables were assessed through ordinal logistic regression. As a preamble to the test, a test of parallel lines was conducted. Findings revealed a significance value of 0.901

4.3.2.2 Descriptive statistics on macroeconomic factors

Descriptive findings on macroeconomic factors revealed a median score of 4.1 indicating that most respondents agreed or strongly agreed with the view that macroeconomic factor was a notable point of consideration in the decision to engage in additional voluntary pension fund contributions. Regression analysis findings, presented in the foregoing section, was performed to assess the nature and validity of the posited relationship between the two variables.

Table 4.4: Descriptive statistics macroeconomic factors

Statistic	Nbr. of respondent	Median	Mean	Standard deviation (n-1)
Economic growth is a significant consideration to persons planning for their pension.	375	4	4.179	1.067
Unemployment rates are a significant consideration to persons planning for their pension.	375	4	4.091	1.093
Economic uncertainty is a significant consideration to persons planning for their pension.	375	4	4.144	1.024
Fiscal policy is a significant consideration to persons planning for their pension.	375	4	4.088	1.001
Inflation is a significant consideration to persons planning for their pension.	375	4	4.225	0.942
Macro-economic_Factors	375	4.5	4.231	0.975

4.3.2.3 Descriptive statistics industry-specific factors

Descriptive statistics on industry-specific factors indicated a median rating of 4 thus suggesting that most respondents agreed with observations that the factors were of significant consideration in determining additional pension fund contributions. The impact of these factors was assessed through regression analysis with findings presented in the forgoing section.

Table 4.5 Industry-specific factors

Statistic	Nbr. of respondents	Median	Mean	Standard deviation (n-1)
Time taken to access pensions is a point of significant consideration for persons considering plans for their pension.	375	4	4.18	0.947
Matching contributions by employers are a point of significant consideration for persons considering plans for their pension.	375	4	3.74	1.17
Automatic employment is a point of significant consideration for persons considering plans for their pension.	375	4	3.91	1.003

Active choice deadlines are a point of significant consideration for persons considering plans for their pension.	375	3	3.43	1.013
Growth of funds are a point of significant consideration for persons considering plans for their pension.	375	4	3.97	0.975
Claim processing period is a significant point of consideration for persons planning for their pensions.	375	4	4.24	0.931
Industry_Specific_Factors	375	4	3.99	0.82

4.3.2.4 Descriptive statistics of personal factors

The descriptive statistics for the construct are presented in keeping with the latent factors resulting from the analysis as depicted in the foregoing section. Short-term and financial factors presented an overall median score of 3 (Neutral) thus indicating that most respondents were unaware of the impact of these factors in light of their pension plan additional voluntary contributions. This observation would suggest that the impact of the factor on additional voluntary pension contribution would be inconclusive.

Table 4.6: Short-term thinking and financial factors

	Statistic	Nbr. of observations	Median	Mean	Standard deviation (n-1)
Personal Factors	Short-term thinking is a factor of concern in determining approaches to engagement with pension plans	375	3	3.213	1.091
	Financial literacy is a factor of concern in determining approaches to engagement with pension plans	375	4	4.116	0.905
	Shor-term Thinking Financial Literacy	375	3	3.297	1.012

Demographic dispositional factors encompassed the variables disposable income, age, gender, personal savings, pessimism/optimism, and peer pressure. Findings revealed a median rating of 4(agree) indicating that most respondents deemed the factor one of concern in light of their additional pension contribution. Further analysis of the impact of the factor was assessed, in the subsequent section, through regression analysis.

Table 4.7: Demographic-dispositional factors

Statistic	[Disposable income is a factor of concern in determining approaches to engagement with pension plans]	[Age is a factor of concern in determining approaches to engagement with pension plans]	[Gender is a factor of concern in determining approaches to engagement with pension plans]	[Personal savings is a factor of concern in determining approaches to engagement with pension plans]	[Pessimism/optimism is a factor of concern in determining approaches to engagement with pension plans]	[Peer pressure is a factor of concern in determining approaches to engagement with pension plans]	Demographic_&_ Dispositional Factors
Nbr. of observations	375	375	375	375	375	375	375
Median	4.000	4.000	2.000	4.000	4.000	4.000	4.000
Mean	3.752	3.746	2.535	3.984	3.756	3.345	3.617

Standard deviation (n-1)	1.007	1.152	1.284	0.959	1.179	1.417	0.962

Dependents descriptive statistics revealed a median rating of 4 (agree). This suggests that respondents viewed the factor as contributing to their decision to engage in voluntary pension contributions as the factor was deemed one of significant consideration. The factor was rated, on account of median rating, similarly to demographic-dispositional factors. The effect of the factor on additional pension contribution is assessed in the subsequent inferential analysis section.

Table 4.8 Dependents descriptive statistics

Statistic	Nbr. of observations	Median	Mean	Standard deviation (n-1)
Dependents are a factor of concern in determining approaches to engagement with pension plans	375	4	4.184	0.93

4.3.2.5 Descriptive statistics additional voluntary contributions

Descriptive findings on additional voluntary contributions to pension funds indicated that most of the respondents engaged in additional voluntary contributions. This finding is consistent with the rating of demographic-dispositional and dependent factors as significant determinants of additional voluntary contributions as persons who viewed these factors as impactful to their future retirement would be expected to contribute towards the same. This relationship is however subsequently tested through inferential statistics.

Table 4.9: Additional voluntary pension contributions

Statistic	Nbr. of observations	Median	Mean	Standard deviation (n-1)
[Additional voluntary pension contribution]	375	4	3.639	1.135

A correlation matrix was computed as a preamble to the regression analysis. This was made to assess the relationship between the variables under assessment. Findings revealed that most correlations were weak (below 0.4) with the highest correlation being that between short-term-thinking-financial-literacy and demographic & Dispositional factors (.532**). Non instances of multicollinearity were observed between the independent variables thus suggesting that the factors could be loaded into the regression model seeking to explain the relationship between the dependent and independent variables. VIF scores were subsequently computed for each of the variables with the respective scores for macro-economic factors, industry specific factors being 1.295 and 1.569 respectively. The sub-factors under personal factors, i.e., short-term thinking financial literacy, demographic & dispositional factors, and dependents, presented VIF factors of 1.394, 1.709, and 1.244 respectively hence, on account of being lower than 3, indicating no instances of multicollinearity (Alin, 2010).

4.4 Preliminary tests and factor analysis

The correlation matrix, computed using Spearman's Rank correlation, yielded from the data revealed a determinant value of 0.001 thus indicating that the items were correlated enough to merit factor analysis (Shrestha, 2021). A KMO value of .757 which on account of being higher than 0.5 and a Bartlett's Test value lower than 0.001 showed that the null hypothesis indicating that the correlation matrix of the variables is an identity matrix is to be rejected; the data was thus appropriately distributed to warrant factor analysis.

Table 4.10: KMO and Bartlett's Test

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.757
Bartlett's Test of Sphericity	Approx. Chi-Square	1961.253
	df	66
	Sig.	.000

Three factors, with an eigenvalue of greater than 1, were extracted. The two explain 66.247% of the variance in the variables assessed. The first factor accounted for 30.8 was dubbed demographic-dispositional factors as it grouped biodemographic information and personal determinants. The second factor, short-term thinking and financial factors encompassed three factors. Whereas the las factor, accounting for 12.09% variance, comprised a single factor, dependance. Table 4.2 provides a summary of the variance by extracted factor.

Table 4.11: Total variance explained

Total Variance Explained

	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4.783	39.854	39.854	4.783	39.854	39.854	3.587	29.888	29.888
2	1.716	14.300	54.154	1.716	14.300	54.154	2.641	22.011	51.899
3	1.451	12.093	66.247	1.451	12.093	66.247	1.722	14.348	66.247
4	.954	7.952	74.198						
5	.738	6.154	80.352						

6	.674	5.615	85.968						
7	.523	4.360	90.327						
8	.377	3.140	93.467						
9	.289	2.405	95.872						
10	.243	2.025	97.897						
11	.205	1.707	99.603						
12	.048	.397	100.000						

Extraction Method: Principal Component Analysis.

The pattern matrix resulting from the promax rotation is shown in table 4.12, this details the various factors and their assortment into the aforementioned extracted latent factors. The pattern matrix presented indicated highlighted loadings of the three components. The data was thus recomputed in keeping with the extracted variables for the scale and a subsequent analysis conducted to check to the relationship between the dependent and independent variables.

Table 4.12 Pattern Matrix

Pattern Matrix[a]

	Component		
	1	2	3
[Routine seeking is a factor of concern in determining approaches to engagement with pension plans]	.731	.124	-.086
[Emotional reaction is a factor of concern in determining approaches to engagement with pension plans]	.467	.202	-.548

[Short-term thinking is a factor of concern in determining approaches to engagement with pension plans]	-.039	.952	.052
[Short-term thinking is a factor of concern in determining approaches to engagement with pension plans]	-.028	.943	.062
[Financial literacy is a factor of concern in determining approaches to engagement with pension plans]	-.181	.589	.541
[Disposable income is a factor of concern in determining approaches to engagement with pension plans]	.540	.376	.210
[Age is a factor of concern in determining approaches to engagement with pension plans]	.725	-.168	.451
[Gender is a factor of concern in determining approaches to engagement with pension plans]	.724	-.192	-.030
[Dependents are a factor of concern in determining approaches to engagement with pension plans]	.117	.132	.844
[Personal savings a factor of concern in determining approaches to engagement with pension plans]	.813	-.170	.256

[Pessimism/optimism is a factor of concern in determining approaches to engagement with pension plans]	.792	.138	-.161
[Peer pressure is a factor of concern in determining approaches to engagement with pension plans]	.444	.238	-.197

Extraction Method: Principal Component Analysis.

Rotation Method: Promax with Kaiser Normalization.

a. Rotation converged in 8 iterations.

The model fitting information sought to assess the improvement of fit between the data and the predictive model generated using the variables under assessment. Findings indicated significance as the generated significance value was lower than α 0.05. This therefore suggested that the model was sufficient in expandability of the relationship between the variables.

Table 4.13 Model Fitting information

Model Fitting Information

Model	-2 Log Likelihood	Chi-Square	df	Sig.
Intercept Only	920.498			
Final	814.998	105.500	35	.000

Link function: Logit.

A goodness of fit test assessing the level of difference between a perfect model and the generated model indicated presented a non-significant (higher than 0.05) deviance goodness of fit value (1.000). This therefore indicates that there was no significant difference between the two. This therefore suggests that the data was suitable for interpretation using the model generated for the study.

Table 4.14 Goodness of fit

Goodness-of-Fit

	Chi-Square	df	Sig.
Pearson	1190.944	897	.000
Deviance	738.978	897	1.000

Link function: Logit.

The Nagelkerke Pseudo-R value generated for the model indicated that 26.1% improvement in prediction of the dependent variables on account of using the predictive model generated for the variables under assessment. This finding, viewed in concert with that on goodness of fit and model fitting information, suggests that the model can satisfactorily be used to assess the interrelationship between the assessed variables.

Table 4.15 Pseudo R-Square

Pseudo R-Square

Cox and Snell	.246
Nagelkerke	.261
McFadden	.099

Link function: Logit.

Table 4.16: Spearman's Correlation matrix

			Macro-economic Factors	Industry Specific Factors	Additional contribution	Shor-term Thinking Financial Literacy	Demographic amp; Dispositional Factors	Dependents
Spearman's rho	Macro-economic Factors	Correlation Coefficient	1.000	.246**	.091	-.079	.021	.205**
		Sig. (2-tailed)	.	.000	.077	.129	.685	.000
		N	375	375	374	375	375	374
	Industry Specific Factors	Correlation Coefficient	.246**	1.000	.229**	.321**	.515**	.201**
		Sig. (2-tailed)	.000	.	.000	.000	.000	.000
		N	375	375	374	375	375	374
	[I participate in additional voluntary pension contribution towards my pension plan.]	Correlation Coefficient	.091	.229**	1.000	.236**	.289**	.164**
		Sig. (2-tailed)	.077	.000	.	.000	.000	.002
		N	374	374	374	374	374	373
	Shor-term Thinking Financial Literacy	Correlation Coefficient	-.079	.321**	.236**	1.000	.532**	.259**
		Sig. (2-tailed)	.129	.000	.000	.	.000	.000
		N	375	375	374	375	375	374
	Demographic & Dispositional Factors	Correlation Coefficient	.021	.515**	.289**	.532**	1.000	.354**
		Sig. (2-tailed)	.685	.000	.000	.000	.	.000
		N	375	375	374	375	375	374
	Dependents	Correlation Coefficient	.205**	.201**	.164**	.259**	.354**	1.000
		Sig. (2-tailed)	.000	.000	.002	.000	.000	.
		N	374	374	373	374	374	374

**. Correlation is significant at the 0.01 level (2-tailed).

Parameter estimates were then computed to assess the relationship between the variables under consideration. Specific to the first objective, higher ratings of voluntary contribution were more likely with higher ratings of short-term thinking financial literacy factors with significance values for ratings 1.5 and 3 showing statistics significance. Lower ratings of additional voluntary contribution were associated with lower ratings of demographic and dispositional factors with ratings 3.5, 2.0, 3.0, and 1 showing statistical significance at α 0.05. Although lower ratings of dependance were associated with lower ratings of additional voluntary contributions, none of the scores presented statistical significance at α 0.05. The findings therefore suggests that the personal factors – short-term-thinking-financial-literacy, and demographic-dispositional factors did impact positively on additional voluntary pension fund contributions.

Correlation between additional voluntary contribution towards pension funds and the independent factors - macroeconomic factors, industry-specific factors, short-term thinking financial literacy factors, demographic and dispositional factors, and dependents, were indicated by spearman values of 0.091, 0.229, 0.236, 0.289, and 0.259 respectively. All significance values accompanying the correlations were lower than 0.01 except for that associated with macroeconomic factors. The findings suggest that industry-specific factors, short-term thinking financial literacy factors, demographic & dispositional factors, and dependents factors all have significant positive relationships with additional voluntary contributions towards pension funds. On the other hand, the correlation between macroeconomic factors and voluntary contributions is weak and may not be statistically significant. These findings highlight the importance of considering specific factors such as industry dynamics, financial literacy, demographics, and dependents when analyzing the determinants of voluntary pension contributions.

4.5 Study objectives

4.5.1 Effect of personal factors on employee additional voluntary pension contribution

Personal factors, initially grouped as a single contract, were analyzed through exploratory factor analysis following indication of low reliability of the scale as assessed using Cronbach's alpha (a score of 0.492), this despite the earlier indication of reliability of the scale through the sampled 20 respondents (pilot score above 0.8). A factor analysis, following low reliability scores on personal factors, was run to assess the latent factors in the pre-defined personal factors. Findings from the factor analysis were used to run a subsequent regression model in keeping with the extracted factors from the construct.

Table 4.17 Parameter Estimates

Parameter Estimates

							95% Confidence Interval	
		Estimate	Std. Error	Wald	df	Sig.	Lower Bound	Upper Bound
Threshold	[Iparticipateinadditionalvoluntarypensioncontributiontowardsmypen = 1]	-4.891	.442	122.483	1	.000	-5.758	-4.025
	[Iparticipateinadditionalvoluntarypensioncontributiontowardsmypen = 2]	-3.486	.390	79.703	1	.000	-4.251	-2.721
	[Iparticipateinadditionalvoluntarypensioncontributiontowardsmypen = 3]	-2.340	.371	39.866	1	.000	-3.067	-1.614
	[Iparticipateinadditionalvoluntarypensioncontributiontowardsmypen = 4]	-.181	.346	.274	1	.601	-.860	.497
Location	[Macroeconomic_Factors=1.0]	.469	.785	.357	1	.550	-1.069	2.007
	[Macroeconomic_Factors=1.5]	1.128	1.751	.415	1	.519	-2.304	4.561
	[Macroeconomic_Factors=2.0]	-1.170	.501	5.455	1	.020	-2.152	-.188
	[Macroeconomic_Factors=3.0]	-.983	.499	3.886	1	.049	-1.960	-.006
	[Macroeconomic_Factors=3.5]	.206	1.358	.023	1	.880	-2.457	2.868
	[Macroeconomic_Factors=4.0]	.242	.283	.733	1	.392	-.312	.797
	[Macroeconomic_Factors=4.5]	.997	.312	10.222	1	.001	.386	1.609
	[Macroeconomic_Factors=5.0]	0[a]	.	.	0	.	.	.

	[Industry_Specific_Factors=1.0]	.465	1.558	.089	1	.766	-2.589	3.518
	[Industry_Specific_Factors=1.5]	.006	1.308	.000	1	.996	-2.557	2.570
	[Industry_Specific_Factors=2.0]	-.281	.653	.185	1	.667	-1.560	.999
	[Industry_Specific_Factors=2.5]	-1.648	.951	3.003	1	.083	-3.513	.216
	[Industry_Specific_Factors=3.0]	-.415	.419	.981	1	.322	-1.237	.406
	[Industry_Specific_Factors=3.5]	-.305	.454	.451	1	.502	-1.196	.586
	[Industry_Specific_Factors=4.0]	-.272	.293	.862	1	.353	-.847	.302
	[Industry_Specific_Factors=4.5]	-.368	.383	.926	1	.336	-1.119	.382
	[Industry_Specific_Factors=5.0]	0[a]	.	.	0	.	.	.
	[Shorterm_Thinking_Financial_Literacy=1.0]	-.086	.868	.010	1	.921	-1.788	1.616
	[Shorterm_Thinking_Financial_Literacy=1.5]	-3.966	1.217	10.627	1	.001	-6.351	-1.582
	[Shorterm_Thinking_Financial_Literacy=2.0]	-.095	.445	.046	1	.831	-.968	.778
Personal Factors	[Shorterm_Thinking_Financial_Literacy=2.5]	.672	.888	.573	1	.449	-1.068	2.412
	[Shorterm_Thinking_Financial_Literacy=3.0]	-1.069	.377	8.063	1	.005	-1.807	-.331
	[Shorterm_Thinking_Financial_Literacy=3.5]	-.004	.656	.000	1	.996	-1.289	1.282
	[Shorterm_Thinking_Financial_Literacy=4.0]	-.507	.373	1.850	1	.174	-1.238	.224
	[Shorterm_Thinking_Financial_Literacy=4.5]	.400	.801	.249	1	.618	-1.171	1.971
	[Shorterm_Thinking_Financial_Literacy=5.0]	0[a]	.	.	0	.	.	.
	[Demographic_amp_DispositionalFactors=1.0]	-22.395	.000	.	1	.	-22.395	-22.395
	[Demographic_amp_DispositionalFactors=1.5]	-.549	.901	.372	1	.542	-2.315	1.216
	[Demographic_amp_DispositionalFactors=2.0]	-1.325	.494	7.181	1	.007	-2.294	-.356
	[Demographic_amp_DispositionalFactors=2.5]	-.857	.701	1.496	1	.221	-2.230	.516
	[Demographic_amp_DispositionalFactors=3.0]	-1.390	.417	11.121	1	.001	-2.207	-.573
	[Demographic_amp_DispositionalFactors=3.5]	-1.740	.479	13.217	1	.000	-2.678	-.802
	[Demographic_amp_DispositionalFactors=4.0]	-.692	.355	3.792	1	.051	-1.388	.004
	[Demographic_amp_DispositionalFactors=4.5]	-.575	.426	1.818	1	.178	-1.411	.261

	[Demographic_amp_Dispositional Factors=5.0]	0[a]	.	.	0	.	.	.
	[Dependents=1]	1.482	.954	2.414	1	.120	-.388	3.352
	[Dependents=2]	-.229	.540	.179	1	.672	-1.288	.830
	[Dependents=3]	.033	.366	.008	1	.928	-.683	.750
	[Dependents=4]	-.104	.257	.165	1	.685	-.607	.399
	[Dependents=5]	0[a]	.	.	0	.	.	.

Link function: Logit.

a. This parameter is set to zero because it is redundant.

4.5.2 Effect of macroeconomic factors on employee additional voluntary pension contribution

Correlation findings indicated no association between the variables at the 95% confidence level. As compared to rating 5 for macroeconomic factors, higher ratings of voluntary pension contribution were likely with lower ratings of macroeconomic factors. High ratings on macroeconomic factors were therefore generally associated with lower voluntary pension contribution with rating 2, 3 and 5 showing statistical significance at α 0.05. The overall relationship could however not be confirmed.

4.5.3 Effect of industry-specific factors on employee additional voluntary pension contribution

A lower likelihood of high voluntary pension contribution was associated with lower ratings of industry specific factors. The impact of the estimates was however unconfirmed at the 95% confidence level thus suggesting that the trend of decreasing likelihood of higher ratings of voluntary pension contribution with lower scores of industry specific factors could not be confirmed for the study.

4.6 Summary of chapter

The study sought to answer four research questions - What is the extent of voluntary pension contribution in Kenya's civil services? What is the effect of personal factors on employee additional voluntary pension contribution in Kenya's civil services? What is the effect of industry-specific on employee additional voluntary pension contribution in Kenya's civil services? What is the effect of macroeconomic factors on employee additional voluntary pension contribution in Kenya's civil services personal factors – short-term-thinking-financial-literacy, and demographic-dispositional factors did impact positively on additional voluntary pension fund contributions. High ratings on macroeconomic factors were generally associated with lower voluntary pension contribution. Lower likelihood of voluntary pension contribution was associated with lower ratings of industry specific factors. The impact of personal factors and macroeconomic factors was confirmed at the 95% confidence level but that of industry-specific factors could not be considered at the same level.

CHAPTER 5: DISCUSSION CONCLUSION AND RECOMMENDATIONS

The purpose of this this chapter is to expound on study findings in light of extant literature. Additionally, the chapter provides a conclusion to the study and recommendations that are forthcoming from the discussion considering extant literature.

5.1 Discussion of findings

The study focused on the following objectives: To assess the effect of macroeconomic factors on employee additional voluntary pension contribution in Kenya's civil service. To assess the effect of industry-specific factors on employee additional voluntary pension contribution in Kenya's civil service. To assess the effect of personal factors on employee additional voluntary pension contribution in Kenya's civil service. This section is thus demarcated in keeping with the objectives of the study.

5.1.1 The effect of personal factors on employee additional voluntary pension contributions

The current study reveals that personal factors play a significant role in employee additional voluntary pension contributions. Higher ratings of voluntary contributions are associated with higher ratings of short-term thinking financial literacy factors, indicating that individuals with a better understanding of financial concepts and the long-term benefits of pension contributions are more likely to contribute voluntarily. Conversely, lower ratings of additional voluntary contributions are linked to lower ratings of demographic and dispositional factors, suggesting that individuals who exhibit certain demographic characteristics or dispositional traits may be less inclined to make additional pension contributions.

The current study's findings provide insights into the role of personal factors in employee additional voluntary pension contributions. It reveals that individuals with a better understanding of financial concepts and the long-term benefits of pension contributions are more likely to contribute voluntarily. This finding aligns with the empirical literature on the determinants of additional pension contributions.

Guariglia and Markose (2000) found that personal pension coverage is higher for males compared to females, highlighting the gender disparity in pension participation. The current study supports the impact of demographic factors, such as age, on additional pension contributions, which is consistent with Guariglia and Markose's findings. Therefore, age and gender should be considered when designing policies or interventions to promote additional voluntary pension contributions.

Jacobsen et al. (2014) focused on personal psychological determinants of long-term investments and found evidence for gender differences in stock market engagement. Their research suggests that psychological factors, such as risk tolerance and investment confidence, can influence individuals' decision to contribute voluntarily to long-term savings vehicles like pension funds. The current study also emphasizes the importance of personal dispositional and psychological factors in understanding employees' propensity to make additional pension contributions.

Lisenkova and Bornukova (2017) argue that regional GDP, signaling favorable economic performance, can lead to high income among employees, which can then be channeled towards pension contribution schemes. The current study aligns with this perspective by indicating that lower-income earners are less likely to engage in additional voluntary pension contributions. This highlights the need for tailored interventions and policies to address the financial constraints faced by lower-income individuals and promote their participation in voluntary pension schemes.

Praja et al. (2020) highlight the impact of predisposition factors, such as optimistic inclination and peer pressure, on additional voluntary pension contributions. Their research suggests that individuals who are more optimistic about their financial future and perceive social pressure to save for retirement are more likely to make additional pension contributions voluntarily. Consistent with this finding, the current study indicates that personal factors, including dispositional and psychological factors, should be considered alongside biodemographic factors like gender, age, and income to gain a comprehensive understanding of the determinants of additional voluntary pension contributions.

In summary, the current study's findings complement the empirical literature by reinforcing the importance of personal factors, including financial literacy, demographic characteristics, dispositional traits, and psychological factors, in influencing employees' additional voluntary

pension contributions. It underscores the need for comprehensive interventions and policies that address these various factors to promote greater participation in pension schemes.

5.1.2 The effect of macroeconomic factors on employee additional voluntary pension contributions

The findings of the current study challenge the commonly observed positive relationship between macroeconomic indicators, such as GDP, and pension fund contributions. In contrast to previous research by Lisenkova and Bornukova (2017) on post-USSR countries, which reported a positive relationship, the current study reveals an unexpected inverse relationship. Individuals who perceive macroeconomic factors as impactful are more inclined to rely on obligatory contributions rather than making additional voluntary contributions.

To understand this contextual difference, historical and policy factors must be considered. Thurley and Lucinda (2009) examined pension plan subscriptions in the UK during the 1950s and found that high marginal income and corporate taxes incentivized firms to seek tax savings through pension provisions, leading to increased subscriptions. Policy incentives at the time also encouraged non-cash remuneration alternatives, making pension benefits an attractive option. These historical factors highlight the influence of policy incentives on individuals' decisions to contribute to pension plans.

Additionally, Bonizzi et al. (2020) conducted a study on pension contributions in Colombia and emphasized the importance of policy interventions in shaping contribution behavior. Their research highlighted passive decision-making and a lack of engagement with pension provisions offered by employers, which contributed to a lower likelihood of additional voluntary contributions. However, the influence of macroeconomic factors on pension contributions remained significant. Therefore, policy changes and interventions could play a crucial role in motivating individuals to make voluntary pension contributions and addressing passive decision-making.

The findings of the current study align with the significance of policy adjustments and interventions to promote sufficient and proactive saving for retirement. They however differ from extant findings on account of the observation of non-impact of macroeconomic factors. By addressing contextual factors and perceptions surrounding pension contributions, policy changes

can encourage individuals to make additional voluntary contributions. These interventions can ensure that individuals are actively saving and adequately preparing for their retirement.

In conclusion, the current study's findings challenge the commonly observed positive relationship between macroeconomic factors and additional voluntary pension contributions. It highlights the importance of historical and policy factors in shaping contribution behavior and emphasizes the need for policy interventions to address passive decision-making and promote proactive saving for retirement. By understanding the contextual differences and implementing appropriate policies, individuals can be encouraged to make voluntary contributions and adequately prepare for their future retirement.

5.1.3 The effect of industry-specific factors on employee additional voluntary pension contributions

The current study's findings suggest that industry-specific factors did not have an impact on voluntary contributions. However, it is important to note that the relationship between these factors and additional contributions could not be confirmed due to the predominance of neutral responses among the respondents.

In contrast, Choi et al. (2002) examined the transition from traditional defined benefits plans to defined-contribution plans such as 401K and emphasized the role of passive decision-making and lack of understanding in curtailing additional contributions. They found that employees often adhere to default contribution levels set by their employers without actively making efforts to switch to plans offering higher retirement benefits. This highlights the impact of passivity on eventual earnings and raises concerns about the financial literacy of employees.

Bonizzi et al. (2020) studied the evolution of pension fund demand following pension policy reforms in Colombia and Peru. They observed a substantial increase in the demand for pension plans, regardless of whether they were defined benefits or defined contribution schemes. They found that the growth of pension funds was influenced by the policies governing pension planning instruments and the overall expansion and significance of a country's financial markets. This highlights the influence of policy and market dynamics on the growth of pension funds.

Renneboog, Tr Horst, and Zhang (2008) noted that fund managers prioritize financial value creation over socially responsible investment, despite the preference for such investment strategies among pension fund subscribers. This finding suggests a potential misalignment between subscriber preferences and fund manager behavior.

Bikker et al. (2021) found that an increase in subscribership to a pension fund is associated with decreasing individual asset holdings, indicating a disincentive for higher subscriber numbers and additional voluntary contributions to well-performing funds. This discrepancy raises the need for further investigation into the relationship between fund growth and additional voluntary contributions.

Overall, the current study's findings diverge from the empirical literature in several aspects. The current study did not find an impact of industry-specific factors on voluntary contributions, whereas previous studies have highlighted the role of passive decision-making, financial literacy, and policy and market dynamics in shaping pension contributions. Additionally, the current study did not address the issues of fund manager behavior and the potential disincentives for additional voluntary contributions observed in other studies. Further research is needed to reconcile these discrepancies and gain a comprehensive understanding of the factors influencing voluntary contributions to pension funds.

5.3 Recommendations

Three main recommendations are forthcoming from this study – a need for context-specific qualitative studies on the reason for departure of findings in the current setting; a need for ad hoc solutions to address additional pension fund needs for the population, and finally, broadening of the scope of study to understand the nuances of additional pension fund contributions among private workers in Kenya. The findings from the current study terminate at the observed impact of lack thereof of the factors under consideration. Additional studies focusing on the reasons for departures from are thus necessary to gain a wider understanding of possible interventions that would aid in improving the pension contribution situation in the country. Policy changes leveraging the passive nature of contributors should be considered to raise the amounts contributed towards pension funds. These policy changes should however consider the limited resources that civil servants may have in order to avoid further subjective them to harsh economic conditions. Finally, additional studies focusing on the broader workforce in Kenya should be considered to

shed light on further-reaching solutions that would aid in improving the current shortfalls in contributions to pension funds amidst an aging population. The study further adopted a proportional allocation of sample size respondents; this resulted to unstandardized representation of respondents. Future studies focusing on proportional allocation of respondents are suggested.

5.4 Limitation of findings

Current study findings provide valuable insights into the impact of macroeconomic and personal factors on additional voluntary pension fund contributions, nevertheless, limitations present and should be considered in interpreting the findings. Firstly, the study's findings indicate that the impact of industry-specific factors on pension contributions is not apparent. This suggests that the chosen indicators may not fully capture the complexities and nuances of the industry context. It is however noteworthy that the study was conducted within the specific setting of the Kenya Civil Service, which may have unique characteristics and dynamics compared to other industries. Therefore, generalizing these findings to other sectors should be done with caution. Secondly, the study observes an inverted relationship between macroeconomic factors and additional pension contributions, contrary to previous research. This discrepancy may stem from the specific conditions and socio-economic factors present in the Kenyan context. Hence, it is crucial to conduct context-specific qualitative studies to explore the reasons for these departures and gain a deeper understanding of the underlying dynamics. A composite scale assessing the dependent variable would further be useful in assessing the validity of findings presented in the study.

5.4 Chapter summary

This chapter discusses the findings and their implications in light of existing literature. The study finds that higher ratings of short-term thinking financial literacy factors are associated with higher ratings of voluntary pension contributions. On the other hand, lower ratings of demographic and dispositional factors are linked to lower ratings of additional voluntary contributions. The study revealed that contrary to common observations, higher ratings of voluntary pension contributions are associated with lower ratings of macroeconomic factors. The study suggests that respondents who perceive macroeconomic factors to be impactful are more likely to rely on their obligatory contributions rather than making additional voluntary contributions. Regarding industry-specific factors, the study finds that lower ratings of these factors are associated with a lower likelihood of high voluntary pension contributions. However, the relationship could not be confirmed, and there

is ambiguity and uncertainty regarding how industry-specific factors influence individuals' decisions to contribute to their pension plans. It is thus recommended that context-specific qualitative studies be conducted to understand the reasons for these findings, ad hoc solutions to address additional pension fund needs, and broader studies focusing on private workers in Kenya. The chapter also acknowledges limitations in the findings, including the need for further research and the specific nature of the study's sample.

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Appendices

Apendix1: Ethics Reviews Committee Letter

Strathmore UNIVERSITY

2nd March 2023

Mr Mugi Christopher Weru,
christopher.mugi@strathmore.edu

Dear Mr Mugi,

RE: A Heuristics Approach in Examining the Factors Influencing Additional Voluntary Pension Contribution in the Public Sector in Kenya

This is to inform you that SU-ISERC has reviewed and **approved** your above **SU- master's** research proposal. Your application reference number is **SU-ISERC1569/23.** The approval period is from **2nd March 2023 to 1st March 2024.**

This approval is subject to compliance with the following requirements:

i. Only approved documents including (informed consents, study instruments, MTA) will be used
ii. All changes including (amendments, deviations, and violations) are submitted for review and approval by SU-ISERC.
iii. Death and life-threatening problems and serious adverse events or unexpected adverse events whether related or unrelated to the study must be reported to SU-ISERC within 48 hours of notification
iv. Any changes, anticipated or otherwise that may increase the risks or affected safety or welfare of study participants and others or affect the integrity of the research must be reported to SU-ISERC within 48 hours
v. Clearance for export of biological specimens must be obtained from relevant institutions.
vi. Submission of a request for renewal of approval at least 60 days prior to expiry of the approval period. Attach a comprehensive progress report to support the renewal.
vii. Submission of an executive summary report within 90 days upon completion of the study to SU-ISERC.

Prior to commencing your study, you will be expected to obtain a research license from National Commission for Science, Technology, and Innovation (NACOSTI) https://research-portal.nacosti.go.ke/ and obtain other clearances needed.

Yours sincerely,

for: **Dr Ben Ngoye,**
Secretary; SU-ISERC

STRATHMORE UNIVERSITY INSTITUTIONAL SCIENTIFIC AND ETHICAL REVIEW COMMITTEE
(SU-ISERC)
03-Mar-2023
Email:ethicsreview@strathmore.edu
P.O BOX 59857-00200
NAIROBI-KENYA

Cc: Mr Ambrose Rachier,
Chairperson; SU-ISERC

Ole Sangale Rd, Madaraka Estate. PO Box 59857-00200, Nairobi, Kenya. Tel +254 (0)703 034000
Email admissions@strathmore.edu www.strathmore.edu

Appendix 2: NACOSTI Approval Permit

REPUBLIC OF KENYA

NATIONAL COMMISSION FOR SCIENCE,TECHNOLOGY & INNOVATION

Ref No: **438562**

Date of Issue: **20/March/2023**

RESEARCH LICENSE

This is to Certify that Mr.. Christopher Weru Mugi of Strathmore University, has been licensed to conduct research as per the provision of the Science, Technology and Innovation Act, 2013 (Rev.2014) in Nairobi on the topic: A Heuristic Approach Examining Factors Affecting Additional Pension Contributions in Public Sector In Kenya for the period ending : 20/March/2024.

License No: **NACOSTI/P/23/24320**

438562

Applicant Identification Number

Director General
NATIONAL COMMISSION FOR SCIENCE,TECHNOLOGY & INNOVATION

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See overleaf for conditions

Appendix 3: Questionnaire

Section A Appendix 3: Study Questionnaire

The purpose of this study is to determine the factors affecting employees' additional voluntary contribution to pension schemes in Kenya's civil service. Kindly answer all sections of the questionnaire.

Section A: Biodemographic Information

In which ministry are you employed?

For how long have you been in employment in this ministry?

SECTION B: MACROECONOMIC FACTORS

Kindly indicate your level of agreement with the following statements as guided by the following key: 1- strongly disagree, 2 – disagree, 3 – Neutral 4 – agree 5 – strongly agree.

	Strongly Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly Agree (5)
Economic growth is a significant consideration to persons planning for their pension.					
Unemployment rates are a significant consideration to persons planning for their pension.					
Economic uncertainty is a significant consideration to persons planning for their pension.					
Fiscal policy is a significant consideration to persons planning for their pension.					

Inflation is a significant consideration to persons planning for their pension.					

SECTION C: INDUSTRY SPECIFIC FACTORS

Kindly indicate your level of agreement with the following statements as guided by the following key: 1- strongly disagree, 2 – disagree, 3 – Neutral 4 – agree 5 – strongly agree.

	Strongly Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly Agree (5)
Time taken to access pensions is a point of significant consideration for persons considering plans for their pension.					
Matching contributions by employers are a point of significant consideration for persons considering plans for their pension.					
Automatic employment is a point of significant consideration for persons considering plans for their pension.					
Active choice deadlines are a point of significant consideration for persons considering plans for their pension.					

Growth of funds are a point of significant consideration for persons considering plans for their pension.					
Claim processing period is a significant point of consideration for persons planning for their pensions.					

SECTION D: PERSONAL FACTORS

Kindly indicate your level of agreement with the following statements as guided by the following key: 1- strongly disagree, 2 – disagree, 3 – Neutral 4 – agree 5 – strongly agree.

	Strongly Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly Agree (5)
Routine seeking is a factor of concern in determining approaches to engagement with pension plans					
Emotional reaction is a factor of concern in determining approaches to engagement with pension plans					
Short-term thinking is a factor of concern in determining approaches to engagement with pension plans					
Short-term thinking is a factor of concern in determining approaches to engagement with pension plans					

Financial literacy is a factor of concern in determining approaches to engagement with pension plans					
Disposable income is a factor of concern in determining approaches to engagement with pension plans					
Age is a factor of concern in determining approaches to engagement with pension plans					
Gender is a factor of concern in determining approaches to engagement with pension plans					
Dependents are a factor of concern in determining approaches to engagement with pension plans					
Personal savings a factor of concern in determining approaches to engagement with pension plans					
Pessimism/optimism is a factor of concern in determining approaches to engagement with pension plans					
Peer pressure is a factor of concern in determining approaches to engagement with pension plans					

SECTION E: ADDITIONAL VOLUNTARY CONTRIBUTION

Kindly indicate your agreement or disagreement with the following statement.

	Not at all (1)	Somewhat (2)	Neutral (3)	I do (4)	I certainly do Agree (5)
I participate in additional voluntary pension contribution towards my pension plan.					