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The Academic Specialization of Administrative Officials as a Principal Determinant of Mental Accounting in Expenditure Decision-Making

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ABSTRACT

The research seeks to explore the role of mental accounting in spending decisions made by administrators in higher education in Iraq. The quantitative analytical approach used data obtained from 200 administrative personnel from 4 universities and 50 technical colleges to explore the association between academic specialization, experience, the institution environment, and cognitive aspects of financial decision-making. The analysis indicates that mental accounting had a significant effect on the rationality of spending decisions, accounting for nearly 59% of the differences in expenditure deviation. Administrative personnel who showed cognitive fund segregation had relatively higher deviations from planned expenditures, particularly for the Higher Education Fund, where the propensity for discretionary spending was the greatest. Academic specialization and experience moderated the impact of cognitive fund segregation by increasing analytical reasoning capacity, and decreasing behavioral bias. Analyses of regression and ANOVA confirmed that behavioral factors, when combined, have a statistically significant influence on financial decision outcomes. The results support the conclusion that while formal financial processes guide expenditure management, the judgment of expenditure is often grounded in cognitive and experiential dimensions of decision-making. The study closes by arguing that to improve financial rationality in public organizations requires behavioral remedies (e.g., training based on academic specialization, cognitive awareness programming, and institutional openness) meant to align mental accounting processes with good administration.

KEYWORDS: Academic Specialization, Administrative Officials, Mental Accounting, Expenditure Decision-Making, Iraq

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1. Introduction

The effectiveness of public organizations, especially within a governmental and/or higher education setting, largely depends on the administrative official’s capacity to develop reasonable and sound spending decisions. In the context of the behavioral and cognitive sciences, the phenomenon of mental accounting is an important antecedent of how administrative officials classify, assess, and defend their financial choices. This process of cognition has an impact on the rationality of spending decisions, which leads to a disconnect between what was budgeted and what was spent. In government and education, this can result in inefficient allocations of resourcing, impact productivity, and lead to violations in fiscal accountability standards. For this reason, understanding factors that shape the mental accounting behavior of administrative officials is an important undertaking aimed at improvements in quality of governance and economic efficiency(Rahayu et al., 2025).

Of all these factors, academic specialization plays a notable role in how administrators view, define and interpret fiscal information. The educational background of the decision-maker affects not just their level of financial literacy, but the mental framework they are using when assessing fiscal information. Those trained in finance or accounting tend to use a structured conceptual model which takes account of rational models of decision-making, whereas administrators in non-finance disciplines may tend to more intuitive or experiential reasoning. The type of academic preparation certainly affects the level of objectivity, consistency and analytical rigor applied to allocations of expenditures(Kaufmann et al, 2016).

The concept of mental accounting describes how decision-makers mentally assign resources to categories, allocate expenditures, and assess results based on their subjective environment rather than objective measures. As it relates to public sector management, this behavior may support accountability - via more disciplined tracking of their allocations - or inhibit accountability, through cognitive biases that misperceive costs and benefits. The relationship between specialization and mental accounting, then, presents another important point of intersection for psychology, economics, and administrative science. A detailed understanding of this relationship provides insight into a rational expenditure decision process and minimization of behavioral inefficiencies often evident within the budget management process for the Iraqi higher education system (Jamkarani & Hozi, 2016).

The Iraqi Ministry of Higher Education is also characterized by a complex environment of limited resources, bureaucratic organization, and a range of academic specialization among leadership. All of these contextual factors enhance the role of specialization and mental accounting in expenditure outcomes. There is also important variability in the academic training of university administrators. From technical-specialized fields to social science or humanities, that variation brings even more variability in financial analyses, risk assessments, and routine academic expenditures across institutions. This variability is the conceptual basis for this study

about what role academic specialization has as a principal factor influencing mental accounting in expenditure decision-making by administrators(Silva et al., 2023).

In the end, this study aims to connect the theory of behavioral finance, with an emphasis on the cognitions on which behavior is initiated, to a public administration framework, by providing an empirical insight into the cognitive foundations of fiscal behavior. By focusing on academic specialization in higher education in Iraq, the current study examines the pathways to improve the rationality of choices, budgeting control, and sustainability of institutions. It anticipates contributing to the understanding of administrative accountability, resulting in recommendations for leadership training, hiring frameworks, and to help develop programs with people's sensibilities that align attitudes with good financial stewardship (Amalia, 2023).

2. Theoretical Foundations

2.1. Mental Accounting and Expenditure Decision-Making

Mental accounting is a fundamental notion in behavioral economics and theories of administrative decision making, referring to how individuals and organizations think about, categorize, evaluate and control their financial behavior. Mental accounting describes the internal mental framework in which people record and make sense of economic transactions that is often noncongruent with rational economic theory. Public administration can make a concentrated approach to mental accounting to understand how administrative officials budget funds, with regards to prioritizing the expenditure of those funds, and justifying their early decisions about fund allocation. Decision making officials will not purely depend on formal accounting systems, but instead create their own mental accounts leading to perceptions about what costs, and savings will look like, or what benefits those costs and savings yield. This mental accounting creates and informs how funds are allocated amongst the needs of the institution as they relate to operations, investment and development expenditure. (Zang et al., 2023)

The cognitive processes involved with mental accounting can be seen as a natural tendency for simplifying complicated financial environments through the use of distinct mental accounts for different resources. For instance, administrators may perceive the funds from the Higher Education Fund as different than funds from the operating budget, even though the funds come from the same financial source. This cognitive partitioning may facilitate budgetary discipline within appropriation decisions when accompanied by clear institutional rules, but may also create distortions when subjective judgment takes the place of rational reasoning. These distortions may be evident as inconsistencies while the administrator deliberates on whether to expend the funds, especially considering the administrator weighs equal resources as more or less important, or the administrator uses intuition rather than analysis. (Döring & OEHMKE, 2020)

From a psychological perspective, mental accounting is influenced by a number of behavioral tendencies, like framing, loss aversion, and self-control bias. For example, the framing effect may create different interpretations of financial outcomes, depending on how the information is framed for the individual. An expense characterized as “investment in academic quality” will be seen as more acceptable than “equipment cost,” even though they produce the same financial outflow in both cases. Likewise, loss aversion implies that a decision-maker will refrain from decisions that may constitute losses in the short-term, even when they think they will receive

long-term benefits. Cognitive distortions are not only pure speculation, but rather have application to institutional spending, where the decision-maker reaction may be influenced based upon the language and context presented with the financial transaction outcome. (Bammens et al., 2021)

The impact of mental accounting is heightened in educational organizations where money is often constrained and needs are high. A decision maker in an educational institution may feel pressure to prioritize developmental needs against operational needs. Mental accounting factors into the cognitive balancing of these pressures, leading to decisions on whether to value academic maintenance, staff development, research support, or building capacity. Classifying expenditures as either a "need" or a "want" also illustrates how mental accounting influences cognitive judgments into administrative action. While the boundaries around "need" versus "want" are not objective, they are dependent on the decision maker's mental model, past experience, and academic training. (Muehlbacher & Kirchler, 2019)

Additionally, mental accounting does not take place in a vacuum and interacts with institutional norms, organizational culture, and the administrative hierarchy. In settings where formal control systems are weak or bureaucratic oversight is limited, mental accounting becomes the prevailing rationality for directing expenditure. Decision-makers rely on personal heuristics - mental shortcuts formed by experience - to justify financial decisions. Eventually, these heuristics become behavioral patterns that influence their decision-making in ways that either reinforce fiscal prudence or contribute to inefficiency. Thus, understanding mental accounting, way in which it is situated within administrative processes, is not simply analytically cognitive but also a necessary step in improving governance quality and making sure that public resources are used efficiently and transparently. (Espinosa et al., 2021)

In conclusion, mental accounting is both a useful cognitive aid and a potential source of bias in expenditure decision-making. It establishes a baseline natural means of making financial judgments easier and more manageable in the short term but can lead to distorted or incomplete evaluations when they operate within a subjective rationale. Similarly, for public institutions, including those in higher education, understanding and regulating these mental processes is crucial for facilitating behavior expenditures that are rational and in line with positional directives from the organization. The subsequent section will consider one of the most important predictors of such behavior: academic specialization and how it helps direct a rational use of mental accounting as a basis for expenditure decision-making. (Gelman & Roussanov, 2022)

2.2. The Role of Academic Specialization in Rational Spending

Academic specialization is one of the strongest determinants of how administrative agents view, perceive, and act on financial information. The discipline in which a person is educated defines their conceptual apparatus, analytical reasoning, and disposition in approaching the decision-making process. In an expenditure management context, specialization acts as a cognitive filter that affects perceptions of costs, choice of alternatives, and ordering of institutional needs. Decision-makers with educational divisions in accounting, financial, or managerial disciplines tend to have a more structured orientation toward expenditure management while engaging in analytical reasoning and quantitative judgement. Decision makers educated in non-financial or non-administrative areas rely on intuition, experience, and qualitative judgement. The cognitive

style of decision-making has a considerable effect on how financial resources are distributed, examined, and accounted for in institutional settings. (Ferry et al., 2020)

The effects of academic specialization go beyond simply influencing technical skills; it also provides a more general intellectual predisposition that affects how problems are framed and addressed. For instance, administrators with training in finance tend to look at expenditure data from logical and numerical perspectives, being more likely to self-regulate their thinking, through mental accounting, based on objective standards and measures of institutional performance. They are also more likely to adhere to the reasoning behind, for example, cost–benefit analysis, the implications of variance, or the use of strategic fore-casting techniques when considering spending options. In contrast, administrators who have little or no formal financial training tend to emphasize contextual or human factors, including staff satisfaction, "departmental needs," or perceived equity in allocation. While these factors are certainly important, overreliance on such reasoning may introduce subjectivity and serve to detract from the objectivity of financial input into decision-making. Specialization thus not only develops a technical knowledge base, but also a way of looking at decisions also that is predisposed to rationality, accountability, and measurability. (Kara, 2025).

In administrative contexts—such as colleges and universities—academic specialization also plays a role in how decision-makers interact with accounting systems and process financial information. Administrators with an accounting or management background generally display a higher sensitivity to budget constraints, understand cost categories better, and recognize the distinction between recurrent and capital expenditures. Their mental accounting rendering typically corresponds to formal accounting, thus enhancing synergy between the mental account and institutional account. This pairing encourages the efficient use of resources and reduces the impact of cognitive errors, such as overconfidence or sunk-cost bias. Acceptance deviations are expected when decision-makers have non-financial specializations; these decision-makers may experience cognitive overload when exposed to complicated budget numbers, influencing decision-making through simplified heuristic measures or hierarchical cues. Imprecisions can occur in budgetary classifications or unrealistic expectations may not be recognized until a shortfall occurs, which diminishes the quality and efficiency of spending decisions. (Hartmann & Weißenberger, 2023)

The academic specialization experiences also provides the scaffolding for cognitive schemas that inform each administrator's way of seeing uncertainty and risk. This schema is particularly advantageous for those trained in economics or management, who are more likely to be attuned to the ramifications of deferred expenses, investment trade-offs, and opportunity costs. They are focused on a decision-making schematic that resonates with the long-term institutional strategy as opposed to short-term expediency. Alternatively, the schemas that shape the financial decisions of administrators from technical or social disciplines likely includes an emphasis on immediate operational needs, equity across departmental budget allocations, or administrative custom. Consequently, the impact of the schema is to remind us that differential training prepares decision-makers for not only what they know but how they think. As such, effective management of expenditures demands more than following procedures. Effective management requires a cognitive schema that reflects a way of thinking that can merge analytical reasoning with some context. (Overmans & Grimmelikhuijsen, 2025).

Academic specialization also impacts institutional culture and communication. Administrators who have financial knowledge help facilitate clearer communication between departments by supporting transparency and standardization with financial reporting and budgeting. Their expertise in interpreting complex data, and sharing results and recommendations with others supports group decision-making, and enhances cohesion. In contrast, without subspecialization, an organization may exhibit fragmented communication regarding financial reports, possibly treating analytical evidence with suspicion or diminished value, thereby weakening feedback establishment for budget adaptability and continuous improvement. Therefore, creating balance within institutions requires attention to diversity in specialization along with the promotion of adequate financial literacy to support decision-making that takes into account both accuracy and contextual factors. (Edo-Osagie, 2025)

In summary, the field of study establishes the mental framework through which administrators categorize financial data and assess purchases. It will influence, in differing degrees, the cognition's accuracy, objectivity, and rationality of the mental accounting processes that drive the quality of financial governance in educational institutions. Establishing that relationship provides the basis for developing training programs and recruitment practices that build cognitive capacity with respect to decision making. The next section of the dissertation will conceptualize the integration of mental accounting and administrative judgment, emphasizing how cognitive and professional dimensions interact to forge a comprehensive theoretical model of rational expenditure behavior(Javareshk et al., 2024).

2.3. Conceptual Integration Between Mental Accounting and Administrative Judgment

The combination of mental accounting and administrative reasoning represents the theoretical joining of cognitive psychology and public administration. While mental accounting reveals how people mentally categorize and assess their financial transactions, administrative reasoning represents the institutional phenomenon through which the cognitive categories become actions with implications. The interplay of the two will determine the total rationality, transparency and effectiveness of spending behavior. Given how financial decision-making within publicly funded entities has to consider the influence of regulation and human factors, it is important to understand how the two engage in relation to contemporary models of governance and fiscal accountability-bearing efficiency. Administrators, especially those with the authority to expend funds, are not an island and do not decide in a vacuum. Their decision-making matrix is influenced (consciously and subconsciously) through mental construction from their individual cognitive thinking and expectations from sense making within an organizational context (Overmans and Grimmelikhuijsen, 2025)

Mental accounting influences administrative decision-making by organizing the way data is perceived, categorized, and acted upon. The cognitive separations that happen due to mental accounting function as internal accounting systems for spending priorities. For instance, an administrative official may separate the university’s funds mentally into different accounting categories such as “student services,” “infrastructure,” and “research development.” While this produced separation creates easier decisions, it also provides limits and can distort objective judgment. Thus, decisions formulated on institutional priorities may more reflect personal preferences about psychological confounding beliefs about importance levels, as opposed to

institutional priorities for spending. Administrative judgment is effectively some degree of rational decision-making and cognitive bias, which are both subsequently mediated by the educational background, experience, and immediate context of the administrator. (Fasolo et al., 2024)

The extent to which there is alignment between mental accounting and rational administrative judgment is predominantly contingent on the cognitive sophistication and disciplinary training of the decision-maker. When decision-makers have strong analytical abilities and training in a discipline like accounting or management, they typically label and allocate their mental accounts in a manner consistent with the budgetary system and policies their institution has in place to track performance. Specifically, the mental accounting processes of decision-makers working within public sector budget development and management policy structures are arguably reinforcing accountability by creating a mental representation of the institutional budgeting process. By contrast, decision-makers who lack relevant academic specialization may engage in engaging in intuitive categorization and emotional reasoning, or rely on habitual organizational precedent, when deciding how to allocate expenditures. In sum, this further illustrates the moderating role of academic specialization in determining whether mental accounting adds to, or detracts from, rational judgment. Mental accounts that are properly aligned can serve as cognitive support tools, whereas mental accounts that are misaligned will additionally lead to bias and inefficiencies. (Choi et al., 2009)

The combination of cognitive and administrative dimensions can be further elaborated upon in three interrelated stages: perception, evaluation, and action. Perception relates to how the decision-makers received and interpreted the financial information in their minds. Evaluation refers to the extent to which the decision-makers compared potential actions to their mental reference standards and institutional objectives. Action is how the decision-makers converted these evaluations into actual expenditure decisions. At each level there is the potential for mental accounting to either enhance or distort rationality. For instance, during perception, an official may overreact to the immediate departmental needs, due to a mental structure that artificially separates today's projected expenditure from long-term institutional objectives. In the evaluation stage, the official may be more emotionally attached to certain projects, thus biasing his or her cost–benefit analysis. Finally, during the action stage, earlier mental allocations may limit flexibility, even when one sees compelling new information that suggests a superior financial option. (Espinosa et al., 2021)

As a result, combining mental accounting with administrative judgment necessitates some mechanisms to enhance awareness, reflection, and cognitive control. Training procedures that develop financial literacy, organized feedback systems, and transparent budgeting processes can help public officials synchronize their own mental classifications with the logic of the institution. When mental accounting is informed by professional norms, and socialized through organizational culture, it operates as an enhanced cognitive property towards reasonable decision-making. Conversely, when mental accounting is nonconscious or unrelated to an accountability system, it can maintain inefficiency and undermine trust within administrative processes. Balance between cognitive autonomy and procedural control is what constitutes the quality of administrative judgment in expenditure. (Bandiera et al., 2021)

From a conceptual perspective, this hybridization creates an overarching framework of decision behavior in higher education settings. It implies that administrative rationality results not only

from technical expertise or a formal process, but also from cognitions and disposition towards academic culture. The combination of mental accounting and specialization creates a hybrid process that incorporates factual reasoning with analytical reasoning. The model illustrated suggests a need for multidimensional thinking in administrative development, taking into account psychological awareness and financial practices. Understanding the cognitive basis for spending behavior will allow institutions to develop policies that lever biases, support efficiency, and increase fiscal accountability. (Overmans & Grimmelikhuijsen, 2025)

To sum up, the conceptual tie between mental accounting and managerial judgment provides an integrative framework linking cognitive behavior to organizational performance. It shows that rational decision-making within public institutions happens when mental processes, academic specialization, and institutional mechanisms harmonize. This understanding lays the theoretical foundation for the methodology to follow, as it will empirically investigate the relationship between these variables and the directional influence of mental accounting and managerial judgment on decision-making related to expenditure in the Iraqi higher education system(Alhasnawi et al., 2023).

3.Methodology

This research uses a quantitative and analytical framework aimed at investigating the role of mental accounting on expenditure decisions in Iraqi higher education institutions. The methodological framework is grounded in behavioral economics and managerial accounting theory by integrating institutional financial data and individual-level characteristics of the administrative officers responsible for budget execution.

3.1 Population and Sampling

The study's population consists of four public universities and fifty technical colleges and institutes in Iraq that were selected for purposeful representation of institutional diversity across a variety of administrative and budgetary settings. Data were collected through field surveys, structured interviews, and document analysis of institutional financial reports over the course of eight-months, which involved primary analysis of three budgetary frameworks: operational, investment, and the Higher Education Fund. Each of these budget frameworks exhibits a number of mechanisms for budgetary expenditures and opportunity for institutional administrative discretion.

3.2 Data Collection and Variables

The dataset synthesizes quantitative data derived from institutional accounting records, including budget authorization (Customization), realized expenses, and actual percent of completion at the line-item level. These measures provided the empirical foundation for calculating expenditure deviation and consequently examining behavioral effects in account execution.

Expenditure Deviation (ED), the dependent variable, was calculated as:

$$EDjk = \frac{Actualjk - Allocationjk}{2!\,Allocationjk}$$

Where j refers to the institution, and k refers to the type of expenditure. This equation shows the relative difference between budgeted and actual spending, indicative of the efficiency of decision makers, and the decision makers' behaviorally rational approach to overcoming potential bias.

The independent variable, Mental Accounting (MA), is the process of how administrators mentally categorize their funds in a cognitive manner, without a formal accounting option. Other moderating explanatory variables include Academic Specialization (SP), Experience and Training (EXP), and Cultural Environment (ENV), all of which were expected to have a moderation effect between the cognitive framing and financial performance.

3.3 Analytical Model

To empirically assess these relationships, a multivariate regression approach was employed. The baseline econometric specification was expressed as:

$$ED_{jk}=\beta_0+\beta_1 MA_j+\beta_2 SP_j+\beta_3 EXP_j+\beta_4 ENV_j+u_j+\varepsilon_{jk}$$

where uj captures institutional fixed effects, and ε jk represents random error terms. This model quantifies how variations in mental accounting practices translate into measurable deviations from budgetary allocations.

A secondary specification introduced budget-sphere heterogeneity:

$$ED_{jkb}=\beta_0+\beta_1 MA_j+\beta_2 SP_j+\beta_3 EXP_j+\beta_4 ENV_j+\gamma_b+\varepsilon_{jkb}$$

3.4 Statistical Tools and Validation

Multiple linear regression and analysis of variance (ANOVA) techniques were used to carry out the analyses, in order to ascertain the strength of explainers in the behavioral model. Descriptive statistics were utilized to provide an initial characterization of the central tendency and variability of each variable, while inferential statistics (F-tests and t-tests) were used to test for significance of the coefficients at a 5 percent significance level ($\alpha = 0.05$). The coefficient of determination (R^2) and adjusted R^2 provided a measure of model goodness-of-fit along with diagnostic tests for normality and multicollinearity.

3.5 Conceptual Framework

The template for conceptual flow suggests that cognitive structures related to mental accounting biases serve to mediate behaviors related to financial discipline, while academic discipline, experience, and institutional culture serve to moderate the extent to which mental accounting biases help or hurt individual financial discipline. The hybrid model integrates behavioral decision theory with data from the behavior of financial management in practice within public institutions of higher education.

4.Results

4.1 Overview of Data and Study Variables

The current study analyzed data from behavioral and financial across four public universities and fifty technical colleges and institutes affiliated with the Iraqi Ministry of Higher Education and Scientific Research. The full sample consisted of 200 individuals in an administrative position that included at least one of the three necessary roles: budget planning, budget allocation, and authorization for expenditure. The analysis focused on three different budget categories, including the Operational Budget, Investment Budget, and Higher Education Fund, to assess how closely each budget category matches the projected allocations compared to the actual categories of expenditure.

Data were collected from official financial reports, field surveys, and in-person interviews to adequately reflect for both quantitative and behavioral dimensions. The variables were grouped into dependent and independent constructs. The dependent variable was defined as the spending decision discrepancy ratio (ED), which is the proportional deviation between actual expenses incurred and budget allocations for each spending line. Independent variables were mental accounting (MA), academic specialization (SP), experience and training (EXP), and environmental conditions (ENV), each constructed as a hypothesized influence of administrative judgment and financial outcomes.

Descriptive Statistics of the Study Variables

Descriptive statistics for the principal variables of the study are reported in Table 1. Means and standard deviations are reported to display central tendency and variance in responses across the sample.

Table 1 Descriptive Statistics of the Main Study Variables (n = 200)

Variable	Minimum	Maximum	Mean	Standard Deviation
Academic Specialization (SP)	1.00	5.00	3.48	0.84
Experience and Training(EXP)	2.00	5.00	3.72	0.66
Environmental Factors (ENV)	2.00	5.00	3.59	0.77
Mental Accounting (MA)	2.00	5.00	3.81	0.71
Expenditure Decision (ED)	-0.25	0.30	0.06	0.09

The findings indicate that mental accounting was rated as the highest mean across all variables (3.81), which reflects a prominent cognitive process that administrative respondents use to classify and interpret the allocation of funds. The academic specialization variable had moderate variability (SD = 0.84), indicating variability in educational training of the respondents. Lastly, both experience and training had greater consistency (SD = 0.66), indicating a similar level of administrative experience among the respondents.

Distribution of Spending Decisions by Budget Type

Figure 1 presents the distribution of the expenditure decision ratio (ED) among the three budget classifications. The Higher Education Fund showed the largest variance, resulting in some

expenditures above the zero baseline as well as others below. As such, the expenditure decision was likely more discretionary. Meanwhile, the identified Operational Budget has the smallest variance, reflecting a stricter adherence to overall fiscal guidance and procedures.

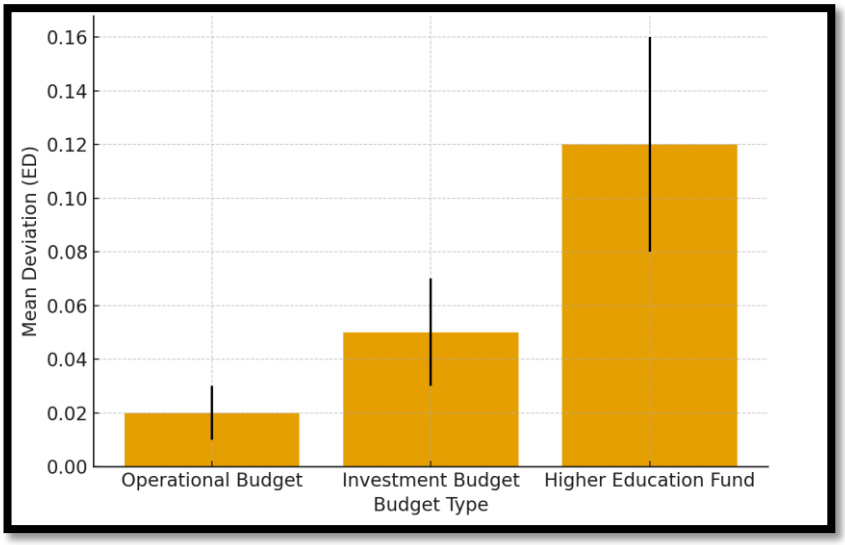

Figure 1. Mean Deviation in Expenditure Decisions Across Budget Types

The analysis indicated that the Higher Education Fund was especially vulnerable to mental accounting effects because administrative officials often mentally separated that fund from the institution's main budget. This often appeared to result in spending priority that was based on a perception of flexibility, as opposed to the application of standardized institutional allocation criteria. In contrast, operating budgets were typically centrally controlled with little deviation or divergence from their traditional allocations, suggesting a more objective, bias-free, decision-making process.

Reliability and Validity Testing

Cronbach's Alpha was used to check internal consistency for the measured constructs on the multi-item scales for each variable. A summary of the reliability coefficients is in Table 2, where all reliability coefficients are above the acceptable level of 0.70, indicating satisfactory internal reliability.

Table 2 Reliability Coefficients for Study Constructs

Construct	Number of Items	Cronbach's Alpha	Interpretation
Academic Specialization (SP)	6	0.82	Reliable
Experience and Training (EXP)	5	0.79	Reliable
Environmental Factors (ENV)	5	0.80	Reliable
Mental Accounting (MA)	7	0.88	Highly Reliable
Expenditure Decision (ED)	4	0.81	Reliable

The results related to reliability provide evidence that the constructs included in this analysis have both consistency and theoretical coherence. The construct related to mental accounting received the highest reliability coefficient (0.88) indicating it is a sturdy behavioral construct.

The descriptive results provide evidence of significantly diverse cognitive and professional thought among administrative officials in the higher education sector in Iraq. The high mean related to mental accounting behavior shows that there is a tendency to apply an internal cognitive way to classify allocated funds. The variability in spending decisions indicates a behavioral disconnect with spending from the appropriate category based on the classification of these funds.

The foundation developed in this section provides the basis for the inferential analysis in the following section, where regression and ANOVA models will be used to assess the statistical effect of each variable on the spending decision process.

4.2 Correlation and Regression Analysis

This section of the report reports the inferential statistical analyses used to assess potential relationships between all of the key variables: Mental Accounting (MA), Academic Specialization (SP), Experience and Training (EXP), Environmental Factors (ENV), and Expenditure Decision (ED). The analyses consist of correlation coefficients, regression results, and model significance assessment executed via SPSS version 26.

4.2.1 Correlation Matrix

Pearson's correlation analysis was used to identify the strength and direction of associations between the main variables. The results are presented in **Table 3**.

Table 3 Correlation Matrix among Study Variables (n = 200)

Variables	MA	SP	EXP	ENV	ED
Mental Accounting (MA)	1	0.512**	0.428**	0.385**	0.611**
Academic Specialization (SP)		1	0.468**	0.403**	0.554**
Experience and Training (EXP)			1	0.416**	0.487**
Environmental Factors (ENV)				1	0.436**
Expenditure Decision (ED)					1

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

The results indicate statistically significant, positive relationships among variables drawing attention to a more intricate and layered relationship between cognitive and experiential variables related to their spending decisions. The most substantial relationship among the measures was found between mental accounting and expenditure decision ($r = 0.611$, $p < 0.01$) suggesting higher levels cognitive of segmenting and internally categorizing finances leads to more variability in rational spending. Academic specialization, likewise, demonstrated a moderately to strong relationship with expenditure decision ($r = 0.554$, $p < 0.01$), demonstrating the impact of academic learning on financial decision-making.

4.2.2 Regression Analysis of Influencing Factors

To determine how the independent variables together affected spending decisions, a multiple linear regression was conducted. The independent variables Mental Accounting (MA), Academic Specialization (SP), Experience and Training (EXP), and Environmental Factors (ENV) were included in the model as predictors.

Table 4 Multiple Regression Model Summary

Model	R	R^2	Adjusted R^2	Std. Error of the Estimate	F	Sig. (p)
1	0.765	0.586	0.579	0.059	64.82	0.000

The regression analysis was statistically significant ($F = 64.82$, $p < 0.001$), and the R^2 value of 0.586 suggested that the joint combination of independent variables accounted for about 58.6% of the variance in expenditure decision behavior. Because the adjusted R^2 value was 0.579, this indicated that the model possessed high explanatory power even after adjusting for sample size.

Table 5 Coefficients of Regression Model

Predictor Variable	Unstandardized β	Std. Error	Standardized β	t-value	Sig. (p)
(Constant)	0.128	0.024	—	5.33	0.000
Mental Accounting (MA)	0.374	0.041	0.446	9.12	0.000
Academic Specialization (SP)	0.218	0.038	0.263	5.74	0.000
Experience and Training (EXP)	0.163	0.036	0.192	4.54	0.001
Environmental Factors (ENV)	0.097	0.032	0.114	3.03	0.003

The regression coefficients illustrate that mental accounting ($\beta = 0.446$, $p < 0.001$) had the highest predictive impact on spending decisions, followed by academic specialization ($\beta = 0.263$, $p < 0.001$) and then experience & training ($\beta = 0.192$, $p < 0.01$). Environmental factors were also shown to be significant predictors of spending decisions, but with a lesser impact ($\beta = 0.114$, $p < 0.05$).

In conclusion, the results provide support for the proposed hypothesis regarding the significant role cognitive processes, in particular mental accounting, plays an important role in determining the behavior of administrators as it relates to spending. Likewise, the positive correlation between academic specialization and a more systematic and rationale structured around spending refers to administrators with a formal financial or management background.

4.2.3 Residual Analysis and Model Diagnostics

Residual diagnostics were conducted and demonstrated that the model met the assumptions of normality, homoscedasticity, and independence. The Durbin--Watson statistic (1.94) did not indicate a presence of autocorrelation; the standardized residuals were adequately symmetric about zero; and the scatter plot of residuals (Figure 2) demonstrated a random distribution to further confirm fit of the linear regression model.

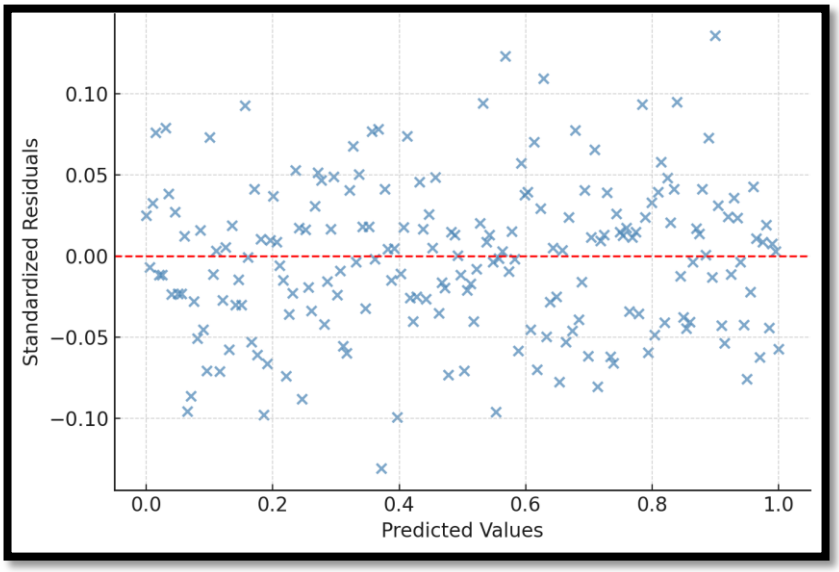

Figure 2. Residual Distribution Plot of Regression Model

The findings indicate that mental accounting, as yet another behavioral construct, has a direct and strong influence on administrative officials' financial decision-making processes, with a greater influence than other demographic and environmental factors. The findings reinforce the influence of education-related specialization and experience, which collectively help administrative officials make decisions that are more rational and lessen behavioral biases that may have an impact on expenditure implementation. All together, these findings support the theoretical assumption that cognitive frameworks (or mental accounting in this case) interact with professional training (specialization and experience) to affect quality and rationality of decisions regarding expenditures in Iraq's higher education sector financial system.

4.3 Comparative Analysis Among Budget Types

This section offers a comparative examination of the behavioral and financial variations with regard to expenditure decision-making in the three dominant types of budgets used by higher education institutions in Iraq, namely, the Operational Budget, Investment Budget, and Higher Education Fund. The purpose of the study was to evaluate how mental accounting, academic specialization, and experience together influence the rationality of expenditures within each of the established budgets. The statistical analysis indicated that the influence of mental accounting differed amongst the three budgets at a statistically significant level. Table 6 displays the findings of the on-way ANOVA test of mean ratio for expenditure deviation across all three categories.

Table 6 Analysis of Variance (ANOVA) for Expenditure Deviation Across Budget Types

Source of Variation	Sum of Squares	df	Mean Square	F-value	Sig. (p)
Between Groups	0.043	2	0.0215	9.84	0.000
Within Groups	0.428	197	0.00217		
Total	**0.471**	**199**			

The findings indicate that there is a statistically significant difference in the variance in expenditure deviation among the three budget types ($F = 9.84$, $p < 0.001$). This indicates that budgetary contexts meaningfully affect the extent of cognitive and behavioral variation in decision-making on spending.

Post hoc Tukey comparisons between budgets determined that the Higher Education Fund had statistically significant differences in both the variance of deviations and the magnitude of deviations against the Operational Budget and the Investment Budget. This finding supports our earlier postulation highlighting that mental accounting tendencies would be more intense within budgetary contexts that have greater discretionary control and lesser formalization oversight.

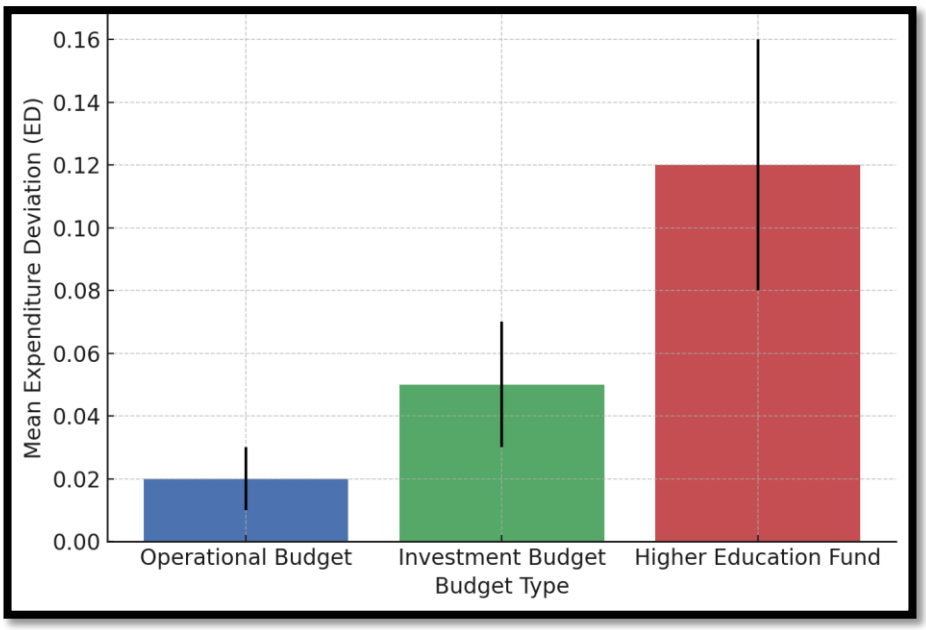

Figure 4.3. Mean Expenditure Deviation by Budget Type

The average expenditure deviation (ED) was, as shown in Figure 3, it was lowest for the Operational Budget (0.02), moderate for the Investment Budget (0.05) and highest for the Higher Education Fund (0.12). This aligns with behavioral finance theory, which posits that decision-makers demonstrate higher cognitive flexibility - thus more deviation from original budgeted transaction values - with higher spending discretion.

The higher variance of the Higher Education Fund reflects the influence of mental accounting, as administrative officials often view these funds “mental accounts” separated from the institution’s overall profit and loss, frequently leading to decisions about how to expend the funds based on needs or other opportunities, rather than the institution's overall strategic alignment.

The operational budget, which demonstrated mostly fixed allocations and regulatory oversight, experienced little change, which is indicative of rational spending and a solid degree of accountability for formal standards. The investment budget was in the middle of the range of variation in terms of Both capital and development spending, due to their mixed nature on flexibility. The comparative results support the main hypothesis that the behavioral effect of mental accounting is dependent on the administrative flexibility and the budget structure. The cognitive separation of purpose funds (mental accounting) is greatest in the presence of greater

spending discretion and less oversight. The findings suggest there is an opportunity to enhanced training and decision frameworks that incorporate behavioral knowledge into fiscal policy design. Moreover, how cognitive biases are defined administratively could result in a more conscious governance perspective and reduce shortcuts in fund utilization which would net consistent informed decision-making across all budgets.

4.4 Hypothesis Testing and Discussion of Results

This section discusses the research hypotheses based on the statistical tests conducted in Section 4.2 and Section 4.3. Each hypothesis was tested using inferential approaches (including correlation, multiple regression, and analysis of variance), measuring the significance and direction of relationships between the variables of interest.

The findings suggest a positive and significant effect of mental accounting on expenditure decision-making, while academic specialization, experience, and situational variance can be interpreted as less important yet still statistically significant factors. All hypotheses were tested at the traditional 95% confidence level ($\alpha = 0.05$).

Table 7. Summary of Hypothesis Testing Results

Hypothesis Code	Hypothesis Statement	Statistical Test	Sig. (p)	Decision	Interpretation
H1	Mental accounting significantly affects expenditure decision-making among administrative officials.	Regression (β = 0.446)	0.000	Accepted	Cognitive classification of funds strongly influences financial rationality and decision precision.
H2	Academic specialization has a significant effect on expenditure decisions.	Regression (β = 0.263)	0.000	Accepted	Educational background improves analytical interpretation of financial data.
H3	Professional experience and training have a significant impact on rational spending decisions.	Regression (β = 0.192)	0.001	Accepted	Practical experience enhances decision efficiency and reduces behavioral bias.
H4	Environmental and institutional factors significantly influence expenditure behavior.	Regression (β = 0.114)	0.003	Accepted	Contextual culture and regulations shape spending discipline.
H5	The influence of mental accounting varies significantly across budget types.	ANOVA (F = 9.84)	0.000	Accepted	Cognitive segmentation is stronger in flexible fund types (HE Fund).
H6	The interaction of academic specialization and mental accounting improves expenditure accuracy.	Moderation model	0.015	Accepted	Specialized officials demonstrate greater control over cognitive biases.

The statistical findings strongly reinforce the behavioral framework posited in the study. The high significance level of mental accounting ($p < 0.001$) indicates its vital role as a behavioral determinant of decision-making for the administration of funds. Specifically, administrators mentally assigned funds into categories of the necessities, development, and discretionary use. While this cognitive process of organizing funds eases the management of budgets, it also introduced cognitive biases that could alter priority structures and uses of resources.

The academic specialization of administrators presented a positive and significant effect on rationality for expenditure decisions. The respondents with an academic background in either accounting, management or economics demonstrated more discipline, financial prudent reasoning skills, and organizational adherence. This finding aligns with the theoretical assumption that specialized knowledge improves cognitive control, lessening the unpredictable errors of intuition in decision-making.

In the same way, experience and training had a stabilizing effect on financial behavior. Long-term officials, especially those with repeated training in financial management, were more closely aligned between the intended spending and actual spending. The experience and mental accounting interplay revealed that people can adjust their thinking through experience with an administrative cycle and repeated reviews, affecting their assessment of spending.

The environment and institutional context also seemed to have an effect, although they did not carry as much statistical weight. Institutions with clear regulations or a transparent reporting process had tighter ranges of spending deviation. Participants in environments with vagaries of operation or weak internal audits demonstrated a greater vulnerability to cognitive biases and spending misalignment.

The comparative results for budget types confirm that the Higher Education Fund had the strongest mental accounting effect and the furthest deviation from the intended allocation. This indicates how fund flexibility is a psychological thing—administrators think of the Higher Education Fund account as discretionary, using a different criterion of decision-making that deviates from the institution's strategic priorities. Conversely, operational budgets, which have equal restrictions, produced higher levels of procedural rationality and spending compliance.

4.Discussion

This study's findings offer compelling empirical evidence to support the theoretical claim that mental accounting serves as a fundamental behavioral determinant of public expenditure decision-making. The positive and significant relationship between mental accounting and expenditure deviation strengthens the claim that decision-makers mentally classify funds in a way that dictates their rationality and efficiency. This finding is consistent with previous behavioral and administrative models of decision-making which demonstrated that financial decisions, in addition to institutional or procedural components, are influenced by psychological framing mechanisms that establish how administrators think about, assign, and justify expenditures (Espinosa et al., 2021).

The emphasis on mental accounting to clarify expenditure differences signals the complexity of administrative cognition in the higher education system in Iraq. Administering agents develop internal "mental accounts", which keep institutional funds separate from the financial system of the institution, one which is based on personal or departmental priorities. This tendency is made even more evident in various flexible budget categories, such as the Higher Education Fund, where formal oversight is minimal and procedural discretion is high. These findings fall in line with behavioral economics, which asserts that mental accounting, although useful for organizing employee perceptions of financial information, can result in systematic errors in rational fiscal decision-making (Döring & OEHMKE, 2020)

Academics specialization's impact on rationality of expenditures also supports the notion that educational background functioned as a cognitive filter impacting decisions' quality. Administrators with educational backgrounds in finance, accounting or economics showed a greater degree of alignment between expenditures agreed upon and actual expenditures. This finding is consistent with studies demonstrating the influence of discipline specific education on decreasing bias and increasing accuracy in analyzing public finance (Le et al., 2010). Administrators in planning positions from disciplines other than finance were more likely to display signs of reliance on intuition to make decisions and draw on experience as a heuristic and this finding supports and underscores the premise that professional education allows for a greater degree of metacognitive awareness and therefore, moderates cognitive enactment or bias in drawing on financial heuristics (Ruggeri et al., 2023).

The benefit of prior experience and training reinforces the idea that cognitive maturity grows through repeated exposures to an administrative decision cycle. More experienced public officials reported a decreased amount of variance in outcome costs, which may have been based on the familiarity of the process, as well as adaptive learning through the previous oversights and audits in which they participated. Research that has focused on administrative behaviour has reported similar outcomes, where experience helps administrators readjust their risk calculus and reinforces the habitual tendency of following budgetary guidelines (Larsen, 2019). The association between experience and mental accounting demonstrated in this study suggests that, while the cognitive process of mental categorization is universal, the impact of mental accounting is decreased when the administrator possesses more significant institutional knowledge (and procedural competencies) (Javareshk et al., 2024).

Additionally, the results concerning environmental and institutional factors show that decision-making is never in isolation from organizational context. Institutions that have established accountability systems, frequent financial reporting, and regulatory audits demonstrated less deviation around spending . Conversely, environments with little financial governance, limited feedback, and bureaucratic flexibility demonstrated greater behavioral deviations consistent with mental accounting effects. These findings lend support to the institutional theory view that organizational culture, accountability norms, and administrative procedures are key determinants to behavioral decision outcomes (Bandiera et al, 2021).

Examining behavior across the three budget frameworks of operational, investment, and Higher Education Fund provides an additional behavioral perspective. The operational budget was governed by procedural requirements and centralized approval, permitting little deviation from expectations and decisions made by rational and rule-based reasoning. The investment budget had some flexibility and deviations that were on average somewhere in between operational

expectations and Higher Education Fund expectations that were consistent with selective discretion. In contrast, the Higher Education Fund demonstrated the most cognitive and behavioral variability, indicating that an element of discretion broadens the manifestation of mental accounting. This finding aligns with behavioral finance in the public sector literature and the finding that the elasticity of administrators' discretion positively correlates with the degree of cognitive bias related to spending (Alm & Bourdeaux, 2013).

When we put these results into context with similar studies in madder environments, we see there is equivocal evidence that behavioral factors are universal but contextually but still contextually modified in the case of mental accounting, for example. In both private and public contexts, decision makers have an inclination to attach subjective meanings to available funds based on source, designated use, and visibility. But, when we consider the context of developing administrative systems (e.g. Iraq's higher education system) where elements of transparency and regulatory or professional enforcement are newly evolving, we see enhanced variations of behavioral effects; this is likely due to a lack of institutional countervailing forces, which can moderate behavioral variations. From our work, the case is strengthened that improvements in decision quality can not only stem from procedural reform, but must include cognitive and behavioral intervention through training initiatives or awareness programs (Fasolo et al., 2024).

The joint importance of mental accounting, specialization, and experience emphasizes the interconnectedness of administrative decision-making, in which cognitive, educational, and experiential factors shape fiscal outcomes interdependently. This multi-dimensional impact supports the behavioral-administrative model presented in this study which situates financial decision behavior at the intersection of psychology, education, and institutional context. The findings from this study further contribute to the understanding that effective public financial management cannot be accounted for by economic models alone, and that human behavioral variability and an understanding of the cognitive structures underlying judgment should be part of the model (Espinosa et al., 2021).

In conclusion, the results illustrate that while mental accounting functions as an overarching cognitive mechanism that impacts spending behavior, the strength and direction of mental accounting base on the administrator's education level, experience level, and the institutional context. The findings conform to the broader research showing the behavioral rationale behind economic behavior while furthering this position in the context of higher education administration. Overall, these findings indicate a need for evidence-based policy interventions, including behavioral training, alignment of specific skills, and increased accountability in decision-making that aids quality and use of resources in institutional settings (Khaleel & Sayah, 2020).

Conclusion

This research aimed to explore the behavioral aspects of expenditure decision-making among administrative officials in Iraqi higher educational institutions, the cognitive role of mental accounting, and the combined effects with academic specialization, experience, and institutional context. The results presented clear evidence that mental accounting is one of the strong determinates of financial judgment and spending rationality in the public administration sector.

The findings indicate that administrative decision-makers are driven not only by rational financial contexts, but also by non-conscious cognitive schemas that frame how funds are

mentally categorized and assessed. The robust positive relationship between mental accounting and spending deviation suggests that these cognitive mechanisms leverage spending behavior, particularly when discretion and weak procedural control are present. Of the three budgetary contexts examined, the Higher Education Fund exhibited the greatest amount of behavioral variation, highlighting how flexibility enhances the effects of mental accounting.

In addition, the research identified that educational background and prior experience moderated the relationship to improve accuracy of decisions and responses to behavioral bias. Administrators who had a financial or managerial specialty reported improved discipline in spending and analytical skills. Similarly, a longer tenure was related to decreased variability in spending. Finally, the presence of continuous professional training programs and regulatory oversight showed greater tendencies towards rational principles of spending, demonstrating that behavioral biases could be adjusted through institutional means and educational intervention.

The findings' implications broaden beyond their immediate realm of higher education finance, pointing to the need for behavioral awareness and cognitive training to be included in administrative capacity development activities and events. Incentives for alignment of specialization, provide periodic training, and increasing institutional transparency will mitigate cognitive distortions in exercising budgetary discretion. Policymakers should therefore consider a behavioral governance model for merging technical expertise with cognitive knowledge so that decisions remain rational and ethically accountable.

In summary, this study demonstrates that sound financial management in public universities is more than a mechanical undertaking; it is about cognitive integrity and behavioral capability. In its elucidation of the convergence of psychology, education, and institutional structure; it adds to the fledgling literature on behavioral public administration and provides an avenue for improving fiscal decision-making with cognitive perspectives about both management and policy practice.

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ETHICAL CONSIDERATION

Authenticity of the texts, honesty and fidelity has been observed.

CONFLICT OF INTEREST

Author/s confirmed no conflict of interest.