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Personality Traits as Predictors of Loss Aversion and Status Quo Bias in Public Procurement Professionals.

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Abstract

Purpose: This study examines whether personality traits (openness, conscientiousness, extraversion, agreeableness, and neuroticism) predict loss aversion and status quo bias among public procurement professionals. These biases can lead to suboptimal decision-making, including attachment to inefficient systems, vendors, and procurement practices.

Methodology: A personally administered survey was conducted with 350 public procurement professionals. Correlation analyses were used to explore relationships between personality traits and the dependent variables (loss aversion and status quo bias). Multiple regression analysis was employed to determine the predictive power of personality traits on these biases.

Findings: The results indicate that personality traits significantly predict loss aversion and status quo bias among public procurement professionals. Specifically, individuals with high neuroticism and conscientiousness scores are more prone to these biases. However, the study found no significant moderating effect of loss aversion on the relationship between personality traits and status quo bias.

Unique Contribution to Theory, Policy, and Practice: This study contributes to the literature by integrating personality psychology with public procurement decision-making. The findings highlight the need to consider individual personality differences in procurement training and hiring practices. Policymakers can use these insights to design interventions that mitigate cognitive biases, such as tailored training programs and structured evaluation frameworks, promoting more objective procurement decisions. Additionally, organizations can leverage personality assessments to optimize team dynamics and reduce the impact of subconscious biases in bid evaluations.

Keywords: *Cognitive Biases, Public Procurement, Personality traits, Loss Aversion, Status Quo Bias, Prospect Theory.*

1. Introduction

Public procurement plays a crucial role in ensuring the effective allocation of public resources, with procurement professionals (bid evaluators) responsible for making decisions that maximize economic value and optimize taxpayer-funded investments (NIGP, 2021; OECD, 2016). However, decision-making in public procurement is often influenced by cognitive biases, which can lead to suboptimal outcomes. One such bias, **status quo bias**, manifests as a tendency to favor existing procurement systems, vendors, or processes due to perceived risks associated with change (Godefroid et al., 2022). This reluctance to deviate from the familiar is particularly pronounced in public procurement, where bid evaluators may fear uncertainty, potential blame for negative outcomes, or disruption of established procedures (Bekir & Doss, 2020).

A key driver of status quo bias is **loss aversion**, a fundamental cognitive bias in which individuals disproportionately weigh potential losses over equivalent gains (Kahneman & Tversky, 1979). In procurement settings, loss aversion may lead professionals to prioritize avoiding perceived risks over maximizing value. For example, bid evaluators may prefer established vendors or traditional procurement methods even when alternative options promise greater efficiency or cost-effectiveness (Balanean, 2017; Uyarra, 2014). While prior research has examined systemic and institutional factors influencing procurement decisions; including regulatory constraints, governance structures, and ethical considerations (Goswami & Wettstein, 2015); relatively little attention has been given to the role of **individual personality traits** in shaping cognitive biases within procurement decision-making.

This study aims to address this gap by examining the relationship between **personality traits and cognitive biases** in public procurement. Specifically, it investigates how the Big **Five personality traits**; openness to experience, conscientiousness, extraversion, agreeableness, and neuroticism; correlate with **status quo bias and loss aversion** among procurement professionals (Ahmad, 2020; Bekir & Doss, 2020; Nicholson-Crotty, 2019). Personality traits can influence an individual's risk perception and decision-making tendencies, making them a potential determinant of biases in procurement evaluations.

While **risk aversion and loss aversion** are often considered distinct, this study adopts an integrated approach, treating them as a unified construct that reflects an individual's propensity to avoid perceived losses under uncertainty (Charpentier et al., 2017). Procurement professionals' resistance to change may stem from both an **extreme aversion to uncertainty (risk aversion)** and a **preference for avoiding negative outcomes (loss aversion)**; both of which can lead to suboptimal decision-making (Coglianese, 2023; Dekel & Schurr, 2014).

Despite the emphasis in procurement literature on systemic and procedural influences, the potential impact of **individual cognitive biases** remains underexplored. Public procurement operates within a complex framework of laws, regulations, and institutional constraints, which are designed to ensure fairness and efficiency. However, procurement professionals bring **individual differences in personality and risk perception** to their roles, potentially affecting the consistency of decision-

making even within standardized processes (NIGP, 2021). While institutions are ultimately accountable for procurement integrity, **understanding how personality traits influence cognitive biases** can provide valuable insights for enhancing decision-making frameworks, training programs, and procurement policies.

1.1 Study Contribution and Research Significance

This study contributes to the existing literature by addressing a largely overlooked area; the intersection between individual psychological factors and procurement decision-making. Specifically, it explores how personality traits influence cognitive biases such as status quo bias and loss aversion among procurement professionals. By focusing on these behavioral dimensions, the study provides a novel perspective that complements existing research in public procurement and behavioral economics. Furthermore, the findings offer practical implications for procurement training and candidate selection, suggesting potential strategies to identify and mitigate cognitive biases during bid evaluations, ultimately enhancing decision-making effectiveness in public procurement contexts.

Identifying the personality traits most associated with procurement-related biases, this study offers practical implications for **hiring, training, and decision-making processes** within public procurement organizations. Findings may inform policies aimed at fostering **rational, evidence-based procurement decisions** while reducing bias-driven inefficiencies.

2. Literature Review

2.1. Theoretical Foundations: Expected Utility Theory vs. Prospect Theory

This study is grounded in two major behavioral economics theories; Expected Utility Theory (EUT) and **Prospect Theory (PT)**; which provide contrasting perspectives on decision-making under risk and uncertainty (Kahneman & Tversky, 1979; Barberis, 2013; Chiu & Wu, 2011; Thomas & Loughran, 2014).

Expected Utility Theory assumes that decision-makers act rationally, selecting options with the highest expected utility based on logical assessments of risk and reward (Changalima et al., 2023). In public procurement, this aligns with competitive bid evaluations, where evaluators systematically compare bids against predefined specifications and award contracts based on economic and technical merit (NIGP, 2021). Theoretically, bid evaluators should act as rational agents, assessing proposals purely on objective criteria to determine the most economically advantageous tender.

However, **Prospect Theory challenges this assumption**, arguing that decision-makers are not always rational actors but instead rely on subjective perceptions of gains and losses from a reference point (Kahneman & Tversky, 1979; Kahneman, 2011). In procurement contexts, evaluators may be influenced by risk aversion, the fear of negative repercussions (e.g., bid protests or supplier underperformance), and psychological biases, leading to decisions that **do not maximize utility but rather minimize perceived loss** (Pettinger, 2018; Chiu & Wu, 2011).

2.2. Cognitive Biases in Public Procurement

The complexity of bid evaluation requires procurement professionals to engage in intricate cognitive processes to weigh multiple factors, including compliance, cost, quality, and risk (Acquisition.gov, 2023; Dekel & Schurr, 2014). The stress associated with these decisions, compounded by **the potential for legal challenges and reputational risks**, increases reliance on heuristics—mental shortcuts that simplify decision-making but introduce **cognitive biases** (Hjeij & Vilks, 2023; Berthet, 2022; Kahneman & Tversky, 1979).

Among the most relevant cognitive biases affecting public procurement decisions are the status quo bias, loss aversion, framing effect, anchoring bias, and confirmation bias. The status quo bias refers to the tendency to prefer existing conditions and resist change, even when superior alternatives are available (Zeckhauser & Samuelson, 1988). In procurement, this bias often discourages evaluators from selecting innovative or unfamiliar solutions due to uncertainty avoidance and risk aversion (Dekel & Schurr, 2014; Love et al., 2008). Closely related is loss aversion, the psychological phenomenon where potential losses are perceived as more impactful than equivalent gains (Kahneman & Tversky, 1979). Within bid evaluation contexts, this can manifest as a reluctance to award contracts to newer or less-established suppliers, stemming from a fear of negative outcomes (Bekir & Doss, 2020; Dekel & Dotan, 2018).

Another critical bias is the framing effect, where decisions are influenced more by how options are presented than by their objective value (Tversky & Kahneman, 1974). In procurement scenarios, evaluators may respond differently to bids depending on whether the information is framed positively (as a gain) or negatively (as a loss), resulting in inconsistencies in supplier selection (Schapper et al., 2006; Cheng et al., 2020). Similarly, anchoring bias occurs when individuals rely too heavily on the first piece of information encountered—such as an initial price quote or the first bid reviewed; when making judgments (Tversky & Kahneman, 1974; Furnham & Boo, 2011). This initial figure becomes a reference point, potentially skewing the evaluation of subsequent bids and leading to unfair comparisons.

Lastly, confirmation bias reflects the tendency to seek, interpret, and recall information that aligns with one's existing beliefs or expectations (Hoffman, 2023). In procurement settings, this bias may cause evaluators to favor bids that conform to their prior experiences, thereby overlooking flaws in familiar vendors' proposals while scrutinizing unfamiliar ones more critically. Such biases can compromise the objectivity, fairness, and competitiveness of the procurement process, ultimately impacting value for money and the integrity of supplier selection.

These biases have **tangible consequences** in public procurement, including **suboptimal supplier selection, inefficient contract awards, and resistance to innovation** (Leisbeth Casier, 2018; Schapper et al., 2006; Uyarra et al., 2014).

2.3. Institutional and Contextual Influences on Procurement Biases

Existing literature has predominantly focused on **institutional biases** in public procurement, such as favoritism, political pressures, and inconsistent evaluation methodologies (Goswami & Wettstein, 2015; Torres-Berru, 2022). However, procurement biases also **vary across organizational levels and sectors**.

Differences across levels and sectors of government can significantly influence procurement decision-making and the manifestation of cognitive biases. For instance, national government agencies often adhere to rigid and standardized procurement policies, whereas local governments typically operate with more discretion in bid evaluations, which can sometimes lead to preferences for local suppliers (Hoekman, 2018; Keulemans & Van De Walle, 2017). Similarly, procurement practices vary between military and civilian contexts. Military contracts tend to prioritize security, efficiency, and confidentiality, frequently resulting in favoritism toward established defense contractors. In contrast, civilian procurement places greater emphasis on public accountability and transparency (Caldwell & Howard, 2014; King & Sekerka, 2017). Sectoral differences also play a critical role; for example, in healthcare procurement, strict compliance with safety and regulatory standards may lead to a bias in favor of large, well-established suppliers (Hanspach, 2023). In the construction sector, the extended timelines and inherent risks of projects often drive decision-makers toward more risk-averse procurement choices (Xue et al., 2014).

Although these systemic factors are well-documented, there remains a **gap in the literature regarding individual-level biases** particularly how **personality traits influence cognitive biases in bid evaluation**.

2.4. Personality Traits and Procurement Decision-Making

The **Big Five Personality Traits model** (Costa & McCrae, 1992) provides a useful psychological framework to examine how individual differences shape procurement decisions. Previous research suggests that personality traits impact **risk perception, decision-making, and bias susceptibility** (Xu, 2020; Dufault, 2023; Busic-Sontic et al., 2017).

Personality traits have been found to influence cognitive biases in decision-making, particularly within procurement contexts. Individuals high in Openness to Experience tend to be curious and innovative, which can reduce their susceptibility to status quo bias (Wehner, 2022; Shi et al., 2016). Their openness may lead them to embrace procurement innovations; however, it may also result in over-optimism toward high-risk vendors. In contrast, Conscientiousness is often associated with rule adherence and meticulousness in decision-making. While this trait supports structured evaluation, it may also increase risk aversion and reinforce status quo bias or loss aversion, especially in ambiguous bidding scenarios (Roberts et al., 2012; Eisenberg, 2023).

Extraversion, characterized by assertiveness and social confidence, may influence procurement evaluators to be more decisive and engaging; however, it can also introduce overconfidence bias and encourage excessive risk-taking (Schaefer et al., 2004; Ahmand, 2020; Bergers, 2022). Those

high in Agreeableness tend to value cooperation and conflict avoidance, which can increase their vulnerability to social biases and risk aversion in supplier selection (Jensen-Campbell & Graziano, 2001; Reizer et al., 2023). Lastly, Neuroticism, marked by emotional instability and anxiety, has been linked to heightened risk aversion and a tendency toward status quo bias, particularly when decisions involve uncertainty or ambiguity (Lommen et al., 2010; Lauriola & Weller, 2018).

Given these personality-linked tendencies, the present study examines how specific traits may **predict the likelihood of procurement evaluators exhibiting cognitive biases such as status quo bias and loss aversion**; factors that contribute to **suboptimal decision-making and resistance to innovation** within public procurement processes.

2.5. Addressing Biases in Procurement: Toward Professionalization and Debiasing Strategies

Efforts to professionalize public procurement through training and certification aim to **reduce subjective bias and increase rational decision-making** (McCue et al., 2018; NIGP, 2021). Initiatives such as **the European Commission's 2017 public procurement package** and the **Certified Public Procurement Buyer (CPPB) and Certified Public Procurement Officer (CPPO) designations** reflect a broader push toward competency-based decision-making (OJEU, 2017). However, professionalization alone **does not eliminate cognitive biases**, as procurement evaluators **still operate within psychologically and institutionally complex environments** (Zhang & Liao, 2024; Cheng et al., 2020).

Research suggests that **structured decision aids, artificial intelligence (AI)-based evaluation tools, and bias-awareness training** can help mitigate biases (Goswami & Wettstein, 2015; OECD, 2016). However, **AI solutions should be critically evaluated**, as algorithmic decision-making can introduce **new biases** rather than eliminate them (Schapper et al., 2006; Theodos et al., 2024).

This study builds on existing literature by examining how personality traits influence procurement decision-making biases. While institutional factors in public procurement have been extensively studied, **the role of individual cognitive biases remains underexplored**. By integrating **behavioral economics, personality psychology, and procurement theory**, this research contributes to a **more nuanced understanding of decision biases in bid evaluations.**

3. METHODOLOGY

This study employed a **quantitative, cross-sectional survey research design** to examine the relationship between **personality traits** and **two critical cognitive biases** in public procurement decision-making: **loss aversion** and **status quo bias**. Additionally, the study explored whether **loss aversion moderates** the effect of personality traits on status quo bias. The rationale for this approach lies in the study's objective to generate empirical insights into how intrinsic psychological characteristics may influence procurement decisions made under uncertainty, ambiguity, and risk—conditions frequently encountered in public sector contracting environments.

The **target population** for this research included certified public procurement professionals, specifically individuals affiliated with two of the most prominent professional bodies in the field: the **National Institute of Governmental Procurement (NIGP)** and the **Universal Public Procurement Certification Council (UPPCC)**. These organizations provide certification, training, and professional standards for a wide spectrum of procurement officials across **municipal, regional, and federal levels of government**. By focusing on professionals within these networks, the study was able to access a population that is both **diverse and experienced**, encompassing practitioners working in sectors such as education, healthcare, defense, infrastructure, and public administration. The inclusion criteria ensured that respondents had practical procurement responsibilities and were currently employed in the public sector.

A **purposive non-probability sampling strategy** was utilized due to the specialized nature of the participant pool. While random sampling was not feasible given the dispersed and credentialed nature of the population, purposive sampling allowed the researcher to focus on individuals whose professional roles made them suitable and qualified to provide relevant data. The survey was distributed electronically through professional procurement mailing lists, forums, and direct outreach within NIGP and UPPCC networks. Participation was voluntary and anonymous, and informed consent was obtained from all respondents at the outset of the survey.

A total of **617 responses** were initially recorded. After conducting data screening procedures; including the removal of responses with missing values, inconsistent answers, or participants who did not meet the eligibility criteria—a final sample of **350 responses** was retained for analysis. This sample size was deemed adequate based on an a priori **power analysis** conducted to determine the minimum number of participants required to detect statistically significant relationships between variables. The retained sample ensured sufficient statistical power for multiple regression and moderation analyses, meeting standard thresholds for effect size (f^2), statistical power ($\beta = 0.80$), and significance level ($\alpha = 0.05$).

The survey instrument comprised three validated measurement tools integrated into a single questionnaire. First, the **Big Five Personality Inventory (BFI-44)** was used to measure five key personality traits: Openness, Conscientiousness, Extraversion, Agreeableness, and Neuroticism. Participants responded to 44 statements using a five-point Likert scale. The scoring procedure involved reverse coding for negatively worded items and averaging scores across each trait domain. Each respondent's **dominant personality trait**; the one with the highest mean score; was identified and treated as a categorical predictor variable.

Second, **loss aversion** was measured using a **Lottery Choice Model** adapted from Bekir and Doss (2020). Participants were asked to make ten sequential choices between paired options representing different risk-reward trade-offs. The point at which a participant switched from choosing the safer (less risky) option to the riskier one was used to classify their loss aversion profile. Participants were coded as **risk-taking**, **risk-neutral**, or **risk-averse** based on their switching behavior.

Third, **status quo bias** was assessed using a **scenario-based instrument**, also developed by Bekir and Doss, involving five real-life procurement decision vignettes. Each scenario presented a set of alternatives, one of which was clearly identified as the status quo option. Participants were instructed to select the option they found most natural or comfortable, and their total number of status quo selections (ranging from 0 to 5) was used as their status quo bias score. The scenarios were carefully constructed to reflect realistic procurement dilemmas, such as vendor selection, budgeting, and resource allocation, to ensure external validity.

Prior to deployment, the survey instrument was pilot-tested with a small group of procurement professionals to assess clarity, coherence, and usability. Reliability was confirmed through internal consistency checks using **Cronbach's alpha**, with all scales demonstrating acceptable reliability thresholds ($\alpha \geq 0.80$). Survey administration was conducted electronically using a secure, GDPR-compliant platform over a four-week period.

Data analysis was performed using **IBM SPSS Statistics (Version 26)**. The data were first cleaned and coded, and all relevant assumptions for multivariate analysis—normality, linearity, homoscedasticity, and multicollinearity; were tested and satisfied. Descriptive statistics were generated to summarize sample characteristics. **Multiple regression analyses** were used to test the direct effects of personality traits on both loss aversion and status quo bias. To test the moderation hypothesis, **hierarchical regression** was employed, with interaction terms created between personality traits and loss aversion levels. Results were interpreted using standardized coefficients, confidence intervals, and significance levels set at $p < 0.05$.

The methodological approach adopted in this study provides a robust and replicable framework for understanding how internal psychological dispositions shape procurement behaviors and preferences. The design ensures both empirical rigor and practical relevance, offering meaningful implications for recruitment, training, and behavioral interventions in public procurement organizations.

4. RESULTS

4.1. Descriptive Statistics

The descriptive statistics provide an overview of the demographic characteristics of the **350 public procurement professionals** who participated in the study. Table 1 presents the mean age of participants as **45.30 years (SD = 11.45)**, with the majority belonging to **Generation X (59.4%)**, followed by Millennials (**25.1%**), Baby Boomers (**8.0%**), and Gen Z (**7.4%**).

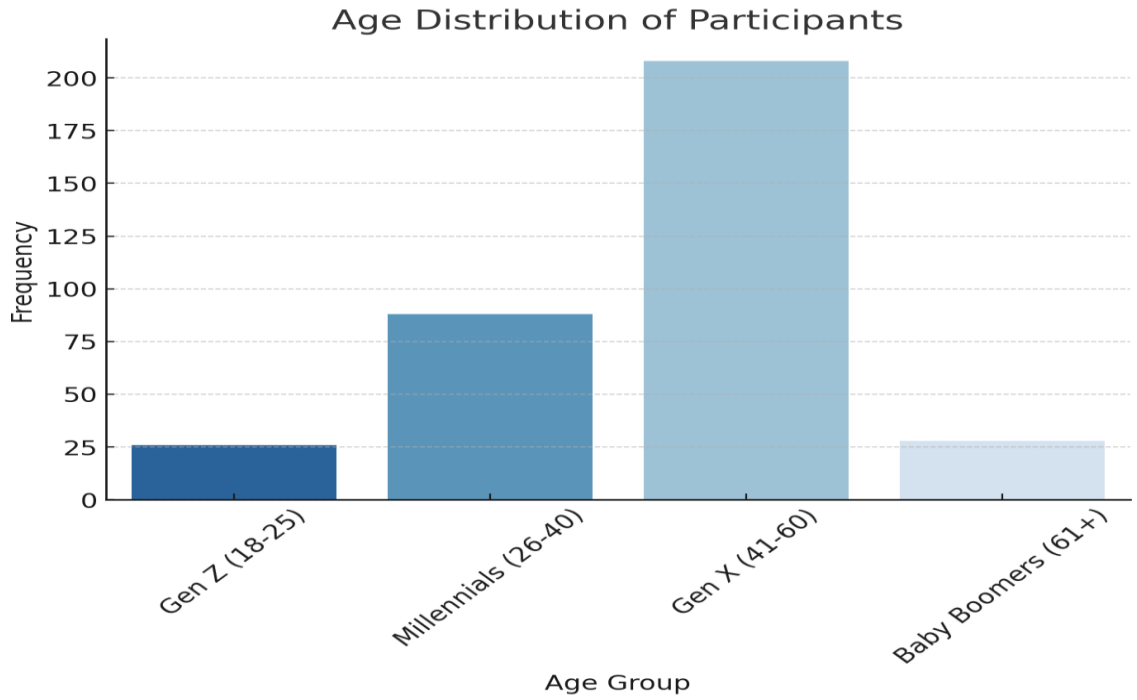
Participants had an average of **11.29 years of public procurement experience (SD = 8.96)**, with the majority categorized as **experienced professionals (55.4%)**. Certification status was nearly evenly distributed, with **51.7% of participants holding professional certifications** and **48.3% lacking certification**.

Table 1: Descriptive Statistics of Study Variables (N=350)

Characteristics	M(Min-Max)	SD	Frequency (f)	%
Age	45.30 (20-68)	11.45		
Age Groups				
Gen Z (18-25)			26	7.4%
Millennials (26-40)			88	25.1%
Gen X (41-60)			208	59.4%
Baby Boomers (61+)			28	8.0%
Years of Public Procurement Experience	11.29 (1-40)	8.958		
Low-Level Experience			82	23.4%
Mid-Level Experience			74	21.1%
Experienced			194	55.4%
Currently Certified				
Not Certified			169	48.3%
Certified			181	51.7%

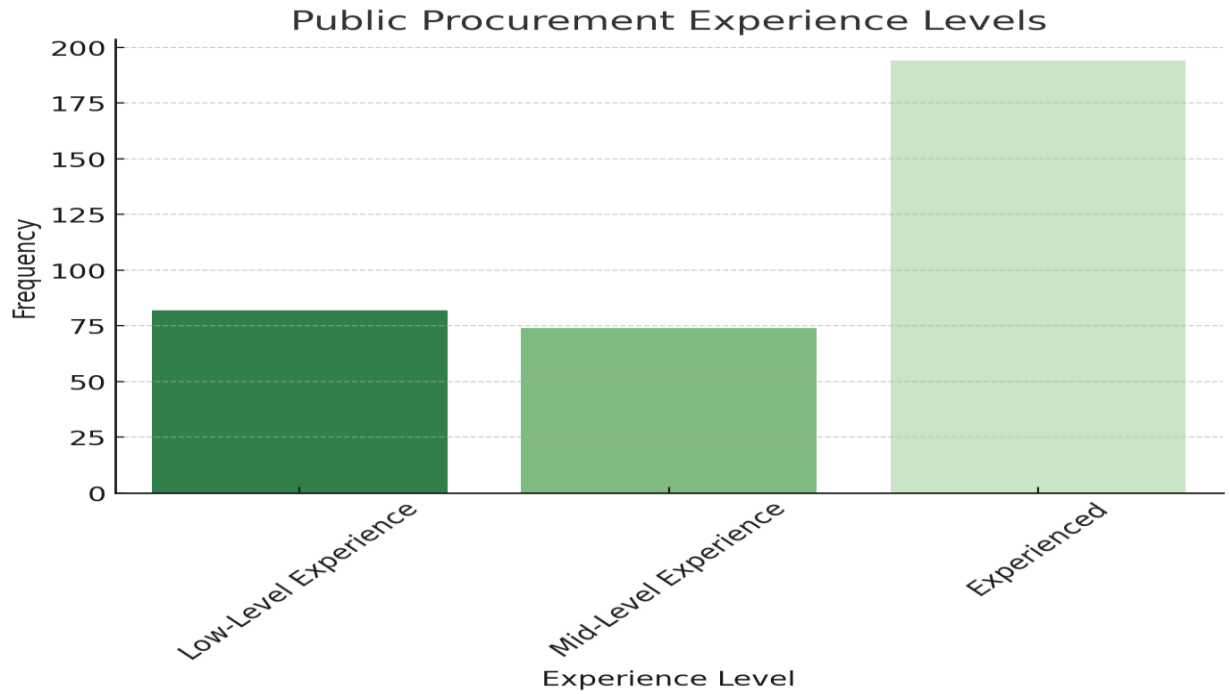
Age Distribution of Participants

The following graph illustrates the **age distribution** of procurement professionals, showing that most participants are experienced professionals from **Generation X**.



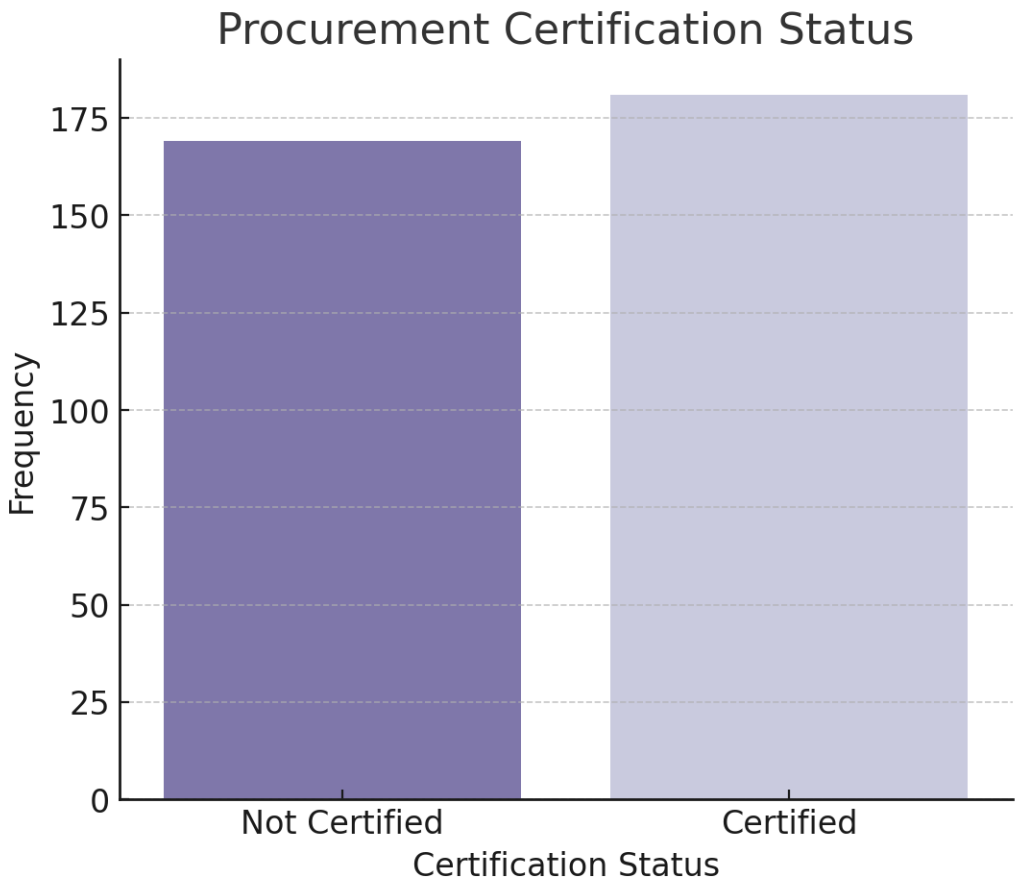
Public Procurement Experience Levels

The next figure provides insights into the **procurement experience levels** of the participants, with a clear majority falling into the experienced category.



Procurement Certification Status

The following graph illustrates the distribution of **certified and non-certified procurement professionals**, offering insights into the professional qualifications of the sample population.



4.2. Correlation Analysis

A **Pearson correlation analysis** was conducted to examine the relationships between **personality traits (PT)** and cognitive biases (**Loss Aversion (LA) and Status Quo Bias (SQB)**). Table 2 presents the correlation coefficients.

Key Correlation Findings

The results revealed that **neuroticism was positively correlated with both loss aversion ($r = .29$, $p < .01$) and status quo bias ($r = .20$, $p < .01$)**, indicating that individuals high in neuroticism tend to exhibit greater risk aversion and a stronger preference for familiar routines or practices. This aligns with existing literature suggesting that individuals with higher neurotic tendencies are more sensitive to potential negative outcomes and uncertainty, which in turn fosters resistance to change (Lahey, 2009; Hirsh & Peterson, 2009). Similarly, **conscientiousness demonstrated a positive**

correlation with both loss aversion (r = .22, p < .01) and status quo bias (r = .13, p < .05), suggesting that structured, detail-oriented professionals may prioritize stability, reliability, and adherence to established procedures in procurement decisions. These findings are consistent with previous research indicating that conscientious individuals are generally more risk-averse and prefer predictable environments where control and order can be maintained (O'Brien & DeLongis, 1996). In contrast, **openness was negatively correlated with loss aversion (r = -0.08, p < .05)**, implying that individuals who score high on openness are more receptive to new ideas, uncertainty, and novel solutions. This is in line with studies by McCrae and Costa (1997), which show that openness is associated with cognitive flexibility and a higher tolerance for ambiguity—traits that may reduce the psychological discomfort typically linked to risk and change in decision-making contexts such as public procurement.

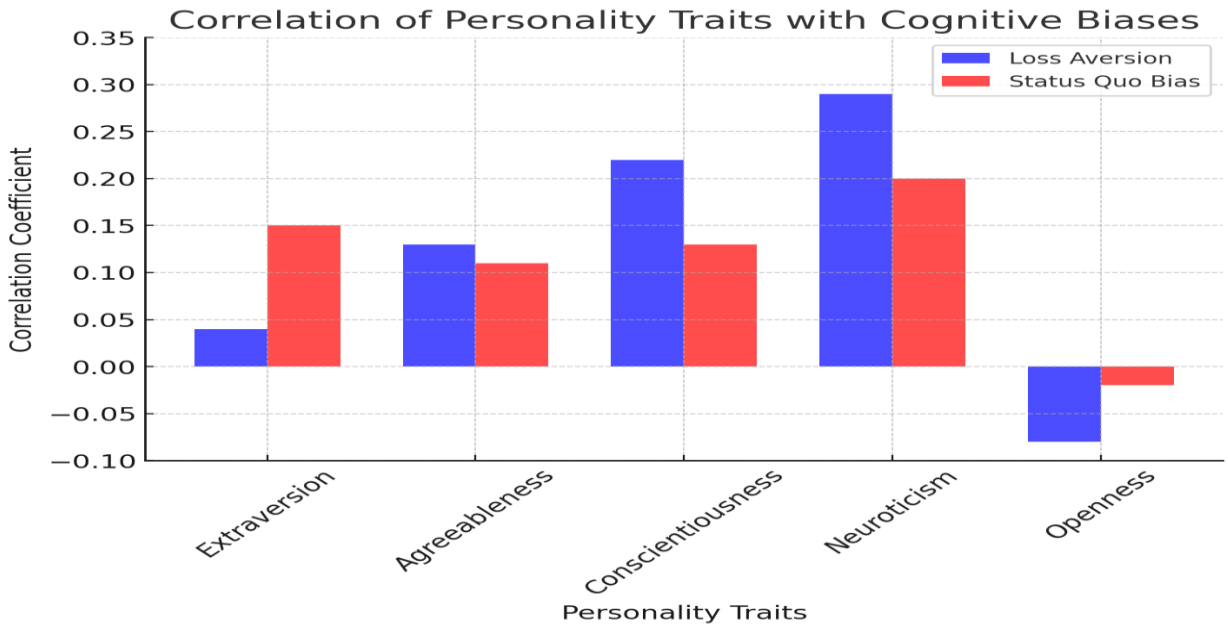
Table 2: Pearson Correlation Analysis (N=350)

Variables	M	SD	LA Correlation	SQB Correlation
Extraversion	3.73	.68	.04	.15
Agreeableness	4.45	.56	.13	.11
Conscientiousness	4.54	.53	.22**	.13*
Neuroticism	3.79	.50	.29**	.20**
Openness	4.24	.47	-.08	-.02

Note: *p < .05; **p < .01

Correlation of Personality Traits with Cognitive Biases

The following figure visualizes the correlation between **Big Five Personality Traits and Cognitive Biases**.



4.3. Regression Analysis: Predicting Loss Aversion and Status Quo Bias

Multiple linear regression analyses were conducted to examine the extent to which **personality traits predict LA and SQB**. Table 3 summarizes the regression model's explanatory power.

The results indicate that:

- **Personality traits accounted for 16.4% of the variance in LA ($R^2 = .164$, $p < .001$)**.
- **Personality traits accounted for 6.9% of the variance in SQB ($R^2 = .069$, $p < .001$)**.

Table 3: Model Summary for Regression Analysis

Variable	R	R^2	Adjusted R^2	Std. Error of the Estimate	F Change	Sig. F Change
Loss Aversion	.405a	.164	.152	.715	13.45	.000
Status Quo Bias	.262a	.069	.055	1.153	5.064	.000

4.3.1 Predicting Loss Aversion (LA)

An **ANOVA test (Table 4)** confirmed that personality traits significantly predicted LA **($F(5,344) = 13.475$, $p < .001$)**.

The regression coefficients (Table 5) indicate:

- **Neuroticism ($\beta = .45$, $p < .001$)** was the **strongest predictor of LA**, suggesting that highly neurotic professionals are **more risk-averse and avoid losses at all costs**.
- **Conscientiousness ($\beta = .33$, $p < .001$)** also predicted LA, reinforcing that individuals who value **structure and responsibility** tend to avoid **uncertainty in procurement**.
- **Openness ($\beta = -0.29$, $p = .002$)** had a **negative impact on LA**, indicating that **high-openness individuals are more comfortable with change and risk-taking**.

Table 4: ANOVA for LA and SQB

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	34.443	5	6.889	13.475	.000
Residuals	175.855	344	.511		
Total	210.297	349			

Table 5: Multiple Linear Regression Analysis for Predicting Loss Aversion (N=350)

Variables	B	SE	t	p	95% CI
Extraversion	.04	.50	.82	.414	[-.06, .16]
Agreeableness	.13	.08	1.69	.090	[-.02, .29]
Conscientiousness	.33	.08	4.01	.000	[.17, .50]
Neuroticism	.45	.07	5.81	.000	[.29, .60]
Openness	-.29	.09	-3.19	.002	[-.47, -.13]

4.3.2 Predicting Status Quo Bias (SQB)

The **ANOVA results (Table 6)** confirmed that personality traits significantly predicted SQB **($F(5,344) = 5.064$, $p < .001$)**.

Table 7 presents the regression coefficients:

- **Neuroticism ($\beta = .49$, $p < .001$)** was the **strongest predictor of SQB**, suggesting that neurotic professionals **resist procurement changes due to fear of negative consequences**.
- **Conscientiousness ($\beta = .28$, $p = .035$)** also predicted SQB, reinforcing the notion that **structured and responsible individuals prefer existing procurement processes over new alternatives**.

Table 6: ANOVA for Status Quo Bias (SQB)

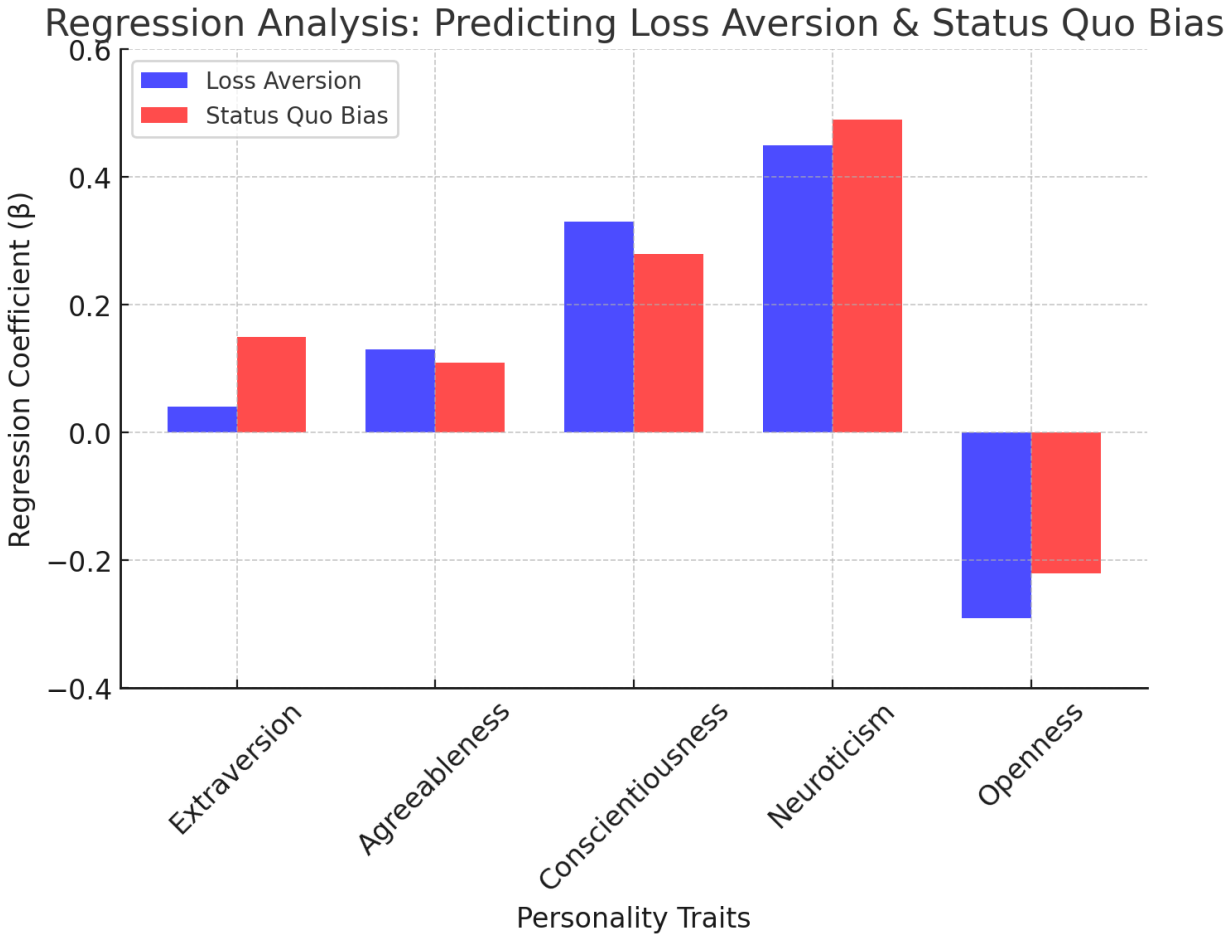
Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	33.654	5	6.731	5.064	.000
Residuals	457.203	344	1.329		
Total	490.857	349			

Table 7: Multiple Linear Regression Analysis for Predicting Status Quo Bias (N=350)

Variables	B	SE	t	p	95% CI
Extraversion	.15	.09	1.61	.107	[-.03, .34]
Agreeableness	.11	.13	.84	.396	[-.14, .36]
Conscientiousness	.28	.14	2.11	.035	[.02, .55]
Neuroticism	.49	.13	3.98	.000	[.25, .74]
Openness	-.22	.15	-1.45	.146	[-.50, .07]

Regression Coefficients for Predicting Loss Aversion (LA) & Status Quo Bias (SQB)

The following figure illustrates the **regression coefficients for LA and SQB across personality traits**.



4.4. Moderation Analysis: The Role of Loss Aversion (LA)

To assess whether **LA moderates the relationship between personality traits and SQB**, multiple regression was conducted (Table 8-12).

Key Moderation Findings

- **LA did not moderate the relationship between conscientiousness and SQB (β = .00, p = .960)**.
- **LA did not moderate the relationship between neuroticism and SQB (β = .00, p = .612)**.

These results indicate that while **LA is an independent predictor of SQB, it does not significantly interact with personality traits to influence resistance to procurement changes**.

Table 8-12: Combined Moderation Analysis

Variables	B	SE	t	p	95% CI
Neuroticism	.20	.07	2.75	.006	[.06, .34]
Conscientiousness	.11	.28	1.61	.108	[-.02, .24]
Risk Aversion	.23	.07	3.55	.002	[.10, .35]
Neuroticism X Risk Aversion	-.04	.08	-0.51	.612	[-.19, .11]

4. DISCUSSION

This study aimed to investigate how personality traits influence cognitive biases specifically, **loss aversion (LA)** and **status quo bias (SQB)**;among public procurement professionals, and whether **loss aversion moderates** the relationship between personality traits and SQB. The discussion below follows a structured step-by-step analysis of key results, with explicit statistical outcomes and links to relevant literature.

1. Personality Traits Predict Loss Aversion (Objective 1)

Neuroticism was the strongest predictor of loss aversion, with a standardized coefficient of **β = .45 (p < .001)**. This finding is consistent with previous studies indicating that individuals high in neuroticism tend to overestimate risks, anticipate negative outcomes, and exhibit greater emotional instability in decision-making contexts (Kahneman & Tversky, 1979; Lauriola & Weller, 2018). This supports the hypothesis (H_5) and validates the theoretical assumption from **Prospect Theory**, which posits that individuals tend to avoid losses more strongly than they seek gains.

Conscientiousness also significantly predicted loss aversion (**β = .33, p < .001**). This aligns with prior research suggesting that individuals high in conscientiousness—who are typically organized, cautious, and goal-oriented; may be more averse to loss in order to maintain stability and meet accountability expectations, especially in high-stakes public procurement environments (Dufault et al., 2023; Maczulskij & Viinikainen, 2016).

Openness, in contrast, negatively predicted LA (**β = -0.29, p = .002**), indicating that individuals scoring high on openness are more comfortable with ambiguity and change. This finding complements studies by Furnham & Chamorro-Premuzic (2004), who observed that openness is often associated with curiosity, creativity, and receptiveness to new experiences; traits that may reduce sensitivity to potential losses.

The overall model for predicting LA was statistically significant (**F(5,344) = 13.475, p < .001**), explaining **16.4% of the variance (R^2 = .164)**. This result supports the first objective of the study and validates H_1 through H_5.

2. Personality Traits Predict Status Quo Bias (Objective 2)

Neuroticism again emerged as the strongest predictor of SQB, with a coefficient of **β = .49 (p < .001)**. This indicates that individuals who are prone to anxiety and emotional instability may be more inclined to avoid change in procurement processes. This is supported by Lommen et al. (2010), who found that high neuroticism correlates with resistance to change and fear of negative outcomes.

Conscientiousness also significantly predicted SQB (**β = .28, p = .035**), albeit to a lesser extent than neuroticism. This result is consistent with the notion that highly conscientious individuals may adhere to standard procedures and resist deviation from established procurement practices, especially when accountability is prioritized over innovation (Nicholson-Crotty et al., 2020).

Other traits; **Extraversion, Agreeableness, and Openness** did not significantly predict SQB, suggesting that resistance to change in procurement is primarily influenced by emotional regulation and responsibility rather than sociability or creativity.

The regression model predicting SQB was statistically significant (**$F(5,344) = 5.064$, $p < .001$**) but explained a smaller proportion of variance (**$R^2 = .069$**) than the LA model. Nevertheless, the results still affirm the second research objective and support hypotheses H_6 through H_{10} in part, particularly for neuroticism and conscientiousness.

3. Loss Aversion as a Moderator between Personality Traits and SQB (Objective 3)

To assess moderation, interaction terms were tested between loss aversion and the two most relevant predictors: **neuroticism** and **conscientiousness**. However, results showed **no significant moderation effect** in either case:

- **Neuroticism × LA** → β = -.04, **p = .612**
- **Conscientiousness × LA** → β = .00, **p = .960**

This suggests that although loss aversion independently predicts SQB (**β = .23, p = .002**), it does not amplify or weaken the effect of personality traits on status quo bias. The result is particularly noteworthy given that previous literature often positions cognitive biases as situational (Ariely, 2008). However, our findings indicate that **stable personality traits may exert a stronger and more direct influence** on procurement resistance than dynamic factors like risk sensitivity.

This outcome does not support hypothesis H_{11}, indicating that the third research objective was not met as hypothesized. Nonetheless, the insight is important, as it **challenges assumptions** that loss aversion universally mediates personality-related decision-making in all contexts.

4. Summary of Findings Relative to Research Objectives

Objective	Result	Supported?
Objective 1: Personality traits predict Loss Aversion	Neuroticism (β = .45), Conscientiousness (β = .33), Openness (β = -0.29)	Yes
Objective 2: Personality traits predict Status Quo Bias	Neuroticism (β = .49), Conscientiousness (β = .28)	Yes
Objective 3: Loss Aversion moderates the PT → SQB relationship	No significant moderation (p > .6)	No

5. Contribution to Literature and Theory

This study provides a meaningful contribution to behavioral public procurement research by demonstrating that **individual psychological factors**, such as personality traits, have **measurable and statistically significant impacts** on procurement biases. In contrast to organizational-level or process-driven models of procurement bias, this research positions **trait-based biases as enduring and individualized**, suggesting a need for nuanced personnel strategies in public procurement.

Moreover, the lack of significant moderation by LA offers a counterpoint to behavioral economics assumptions that **situational risk sensitivity always influences bias formation**. Instead, this study suggests that **personality may act independently** of situational biases like LA; particularly in institutional contexts where accountability and risk aversion are already embedded.

6. Limitations

The Big Five Personality Inventory is extensively researched as a standard scale for personality measurement. Still, it is basically too crude as it tends to oversimplify human personality, thereby reducing its predictive validity in explaining the more complex decision-making behavior. Moreover, given that the focus of the research is on different organizational and national contexts, the applicability of this model entirely draws the Big Five into several doubts. Future research should include this model with other personality assessment tools to make it more comprehensive in understanding decision-making biases.

Another major deficiency of the current research work is that it does not measure suboptimal decision-making processes directly. Rather, it investigates the existing literature to draw inferences on the relationship between cognitive biases and inefficiencies in procurement. A more credible approach would entail delving directly into actual procurement records, particularly in instances when the biases led to flawed decisions or inefficient procurement results.

Self-reported data, which is the standard option in personality testing, is also known to have risks of social desirability bias. This is the tendency for subjects to respond in socially acceptable terms rather than indicatively reflecting their true cognitive and decision-making tendencies. The

mentioned fact brings an implication that such data should be backed up in the future with behavioral experiments or observational data to examine the self-report findings.

Lastly, while individual personality traits are considered in this study as variables, decision-making in public procurement is very much determined by external organization factors. Future work thus must be directed in analyzing and understanding organizational structures, leadership types, and roles of policy environments to give a more comprehensive view of cognitive biases in procurement decisions.

7. Recommendations for Future Research

To address the limitations of this study, future research should adopt a multi method approach by incorporating additional personality assessment tools such as the MBTI, DISC, and True Colors models alongside the Big Five Inventory to better capture the complexity of individual behavior. Researchers should also analyze real world procurement outcomes, such as flawed bid decisions reported by agencies like the GAO, to directly link cognitive biases to procurement inefficiencies. Beyond personality traits, future studies should investigate how external factors such as organizational structures, leadership styles, and regulatory environments contribute to decision making biases. Comparative research across sectors (e.g., national vs. local government or military vs. civilian procurement) and cross cultural contexts would offer a deeper understanding of how biases manifest. Ultimately, an integrated approach that considers both individual and organizational influences is essential for developing strategies to mitigate biases in public procurement.

8. Conclusion

This study contributes to the growing body of literature on public procurement by focusing on how individual-level cognitive biases, particularly those rooted in personality traits like loss aversion and status quo bias, affect procurement decision-making. While existing research has largely emphasized institutional and cultural factors, this paper shifts the lens to unconscious psychological pressures that shape behavior at the individual level. Recognizing and managing such biases can improve decision-making processes, enhance adaptability during organizational change, and support more effective risk management (Kahneman, 2011).

To mitigate these biases, organizations should consider adopting **data-driven evaluation frameworks**, such as **Data Envelopment Analysis (DEA)**, which have proven effective in enabling objective and performance-based assessments of suppliers (Soheilirad et al., 2018; Falagario et al., 2012; Costantino et al., 2011). These tools reduce the reliance on intuition or subjective interpretation, allowing procurement professionals to make more defensible and transparent decisions.

Moreover, while **artificial intelligence (AI)** offers promising opportunities for streamlining procurement processes and minimizing human bias, it must be implemented cautiously. Since AI systems are trained on historical data, they risk replicating existing biases unless actively

monitored and ethically governed (Riddervold et al., 2020; García Rodríguez et al., 2020; Gillom, 2023). Therefore, AI should be viewed as a **complementary tool** rather than a replacement for human oversight. Future research should adopt an **interdisciplinary approach**, combining behavioral science, public administration, and AI to develop bias mitigation strategies that ensure fair, transparent, and accountable procurement practices.

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