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Loan Dynamics and Financial Decision-Making in Public Administration

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Abstract

This study explores the relatively unexamined phenomenon of salary assignment and payment delegations among Italian public employees. Through statistical analysis of a unique dataset from 135 regional agency officials, the research delves into the influence of demographic, occupational, and loan-related variables on their financial decisions. The application of advanced econometric models uncovers significant patterns, such as the association of gender and generational cohort with the tendency to structure loans through salary assignment and the link between employees' professional qualifications and the overall loan duration. Integrating organizational, behavioral, and economic perspectives, the analysis provides a nuanced and multi-dimensional view of the financial decision-making process of public employees. This approach deepens understanding of how public employees balance immediate benefits against future costs in their financial choices within complex and multifaceted decision-making contexts. Overall, the study significantly expands the understanding of the motivations behind the spread of salary assignments in the Italian public sector. The research findings offer notable insights for practical applications and management strategies, contributing to the academic and professional discussion on financial decisions in public administration.

JEL classification numbers: M12; M14; D14; G21; H83.
Keywords: Public Administration; Loan Decisions; Salary assignment; Delegation of Payment; Well-being.

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1. Introduction

The real wage growth has considerably slowed over the past few decades, mainly due to factors such as a decline in the bargaining powers of employees, low productivity growth levels, and pay restraint within the public sectors (Iversen, 1996; Schulten & Müller, 2013). To conceptualize the labor market dynamics, particularly in public finance lending, analyzing the sectoral interactions in earnings and employment choices within both the public and private employment sectors is significant. In this analysis, the focus is on the factors impacting loan or credit access, including the employee profile in terms of private or public employment preference regarding lending capabilities in public administration.

The current paper outlines one of the key features of the Italian credit market loans offered by private banks to the employees of the government sector- mainly the funding arrangements paid off by automatic deduction of pay directly from the paycheck. Both are controlled by mechanisms known in Italy as the assignment of salary (cesione del quinto) and delegation of payment (delegazione di pagamento) which allow the employee of the sector of the state to devote a part of his/her monthly salary to the repayment of a debt through his/her payroll. In turn, these instruments represent the form of the lending by financial institutions being given in the form of the loan to the employees of the sector in general, the salaries earned by the employer in the sector, and repaid by the means of the salary deductions.

In matters of public finance, it is well-known by European policymakers that bad loans and non-performing loans pose a great financial burden (Pancotto et al., 2024). The Italian context, for instance, has not only attracted wide analysis by independent scholars but also by international organizations and banking institutions. This has been due to the fact that non-performing loan stock is steadily increasing and becoming more rigid, leading to the weakening of the Italian banking sector and, consequently, the slowed rate of economic recovery (Accornero et al., 2017; Pancotto et al., 2024). Thus, the analysis of lending dynamics and its interaction with credit flow or loan preferences by individuals is fundamental in finding solutions to avert bad loans and non-performing loan stock as a way to restore Italy's macroeconomic growth and stability. Generally, analyzing the public and private sector wage growth interactions would invaluably help understand the factors that the public sector employers consider for the macroeconomic implications of their wage decisions. But what are the determinants of loan or credit access among Italian public employees? And what is the profile of employees likely to take onerous or financially unsustainable loans that could lead to bad loans or non-performing loans stock in the public finance institutions? These two questions are fundamental to the interest of economic debate, especially on the phenomenon of salary assignment and payment delegations which involve a direct transfer of repayment responsibilities from borrower to employer.

In bank-centered financial systems such as Italy, there are crucial structural factors that could impact credit quality (Baldini & Causi, 2020; D'Auria et al., 1999). For instance, loans are considerably a key financial structure pillar of commercial companies, and commercial credit is regarded as the main activity of banking institutions. Therefore, their relations are deeply rooted in employment sectors. Accordingly, the credit market variables are strongly interlinked with the real factors. This implies that lending, mainly during cyclical downturns, is impacted by structural factors, including private investments salary-based repayment mechanisms such as payment delegations, and expectations, and credit demand (Del Prete et al., 2017).

Understanding these questions from a macroeconomic point of view might be difficult. However, the insights of the results of this particular study can be understood and interpreted through selected economic and organizational theories. Economic theorists allude to the fact that the intertemporal decisions of individuals critically depend on their future expectations and outcomes. Based on classical economic theorists, Smith alludes to the invisible hand, a metaphorical concept of the free market (Stimson, 2004) implying that creditors or employees act within their self-interest in the loan decisions to generate social benefits and public good. Nonetheless, the prospect theory posits that investors, or lenders and creditors, value profits and losses differently, thus placing more weight on perceived gains than losses. Also, the prospect theory of Kahneman and Tversky (1979), the intertemporal choice of Samuelson (1937), and the bounded rationality of Kalinowski and Simon (1957) contextualizes decision-making within the limits of available information and cognitive capacity. Together, these theories create a robust framework for understanding the complex decision-making processes in public administration.

This analysis aims to fill an existing gap in the unexamined phenomenon of salary assignment and payment delegations among Italian public employees. Our research contributes to the solution of the identified phenomenon from the economic point of view. To begin with, this study strategically analyses macroeconomic determinants or variables relating to credit decision preferences. Furthermore, by considering the public and private sectors as exogenous employment choices, this study delves into the influence of the demographic, occupational, and loan-related variables on employee financial decisions through a statistical analysis of a unique dataset of regional agency officials. In such a way, this study elaborates on the probable employee profile associated with onerous and financially unsustainable loans that are, by default, precursors of bad loans or non-performing loans.

The evidence exhibited in this study supports the view that besides credit variations (loan-related), occupational and demographic factors greatly influence the financial decisions of public employees. For instance, Looney and Yannelis (2015) observed that gender and generational cohorts relate to the tendency to structure credit facilities or loans through salary assignments Moreover, results confirm that both the organizational, behavioral and economic perspectives are crucial elements to understanding how public sector employees make financial decisions, particularly balancing the immediate benefits against future costs during their financial choices. The literature further points out the correlation between onerous and unsustainable credit facilities and borrower preferences. Through an analysis of 26 samples in advanced countries between 1998 and 2009, Nkusu (2011, 2021) found a connection between adverse economic conditions and non-performing loan increases, which potentially leads to weakened microeconomic performance. Analytical literature proves beyond doubt that the contextual mechanisms-assigning salary and delegated payments reduce the risk of default by the lender. Nevertheless, lack of careful calibration of these mechanisms against other strict standards of creditworthiness can potentially end up on the part of the borrower with excessive, long-term financial pressure.

2. Literature Review

2.1 Determinants/ Factors of Lending Dynamics or Credit Decisions by Borrowers

One primary concern is how the contribution of this study relates to previous literature. A fundamental contribution to this extant literature is that the study uncovers various factors that influence public sector employees' loan or credit access decisions, giving a profile of those likely to take onerous and financially unsustainable loans leading to non-performing loans in the lending institutions.

In relation to this study, previous empirical studies extrapolated on gender and credit market outcomes as determinants. The study by Asiedu et al. (2012) noted that white race significantly predicted access to credit as well as the cost of loans, whereas gender did not. On the other hand, (Bellucci et al., 2010) found that female firm owners faced tighter credit constraints when acquiring loans or credit facilities in the Italian lending industry, albeit given relatively lower interest rates. However, as argued by Alesina et al. (2013), the Italian Credit Registry data depicted that female borrowers were subjected to higher rates, mainly if the loan guarantors were female. Another cross-country study by Muravyev et al. (2009) found that female borrowers were more likely to be denied or get bank credit rejection, suggesting gender discrimination. Despite other empirical studies contrasting the latter point of view (Aristei & Gallo, 2016; Cowling et al., 2020; Galli et al., 2020; Ongena & Popov, 2016; 2021), gender discrimination disproportionately influenced credit or loaning behavior and motivation as the studies argued. Relative to the above literature, demographic variables, particularly gender, present as a determinant factor that influences the financial decisions of borrowers, thus tentatively presenting a potential research gap that needs empirical investigation. Apparently, the above studies on gender discrimination also alluded to the high cost of credit facilities as a critical factor for credit loan access. In corroborating (Muravyev et al., 2009) sentimented that women let firms (borrowers) pay higher interest rates for their credit facilities, aligned scholars also found that women-led micro-companies paid more overdraft facilities (Alesina et al., 2013), or were subjected to worse credit conditions (Mascia & Rossi, 2017).

With regards to the borrowers' profiles on the preference for financially unsustainable loans, the literature attributes to some macroeconomic and bank-specific factors. Into the insights of macroeconomic determinants of nonperformance loans, Lawrence (1995) attributed to the probability of credit default, suggesting that low-income household borrowers exhibited higher chances of defaulting due to higher unemployment risks. In this accord, the income level of potential borrowers was also a critical factor in determining loan or credit facility access. Similarly, (Rinaldi & Sanchis-Arellano, 2006) contend that the probability of credit default by household borrowers depends on their current income status, as well as unemployment rates, which in turn attributes to uncertain futures of lending due to non-performing loans or unsustainable bad loan decisions. On the same note, Beck et al. (2015) analyzed the role of macroeconomic factors in 75 advanced countries and confirmed the crucial role GDP growth plays in relation to non-performing loan volumes. Insightfully, they highlighted the potential of factors such as share prices, real lending rates and nominal exchange rates as determinants for financial decisions. Berger and DeYoung (1997) evaluated the connection between loan cost efficiency, loan quality and capitalization levels, revealing that low-cost efficiency was associated with an increase in non-performing loans, implying that onerous credit facilities and the financially unsustainable loan preference buyers would favor low-cost efficiency loans. In another comprehensive analysis of sample data of the U.S. commercial and savings banks spanning from 1984 to 2013, Ghosh (2015) established that liquidity risks, higher capital levels, inefficient cost management, low credit quality and large bank size determined loan performance, thus potentially influencing credit facility access by borrowers.

2.2 Previewing Current Lending Context & Technologies

Based on the framework of this study, a thorough analysis of the regulatory context of payment delegations and fifth assignments in public employment is crucial. Key legislative references like DPR 180/1950 and Dlgs 165/2001 provide an essential understanding of the legal bases governing these financial instruments.[2] Payment delegation and fifth assignment are tools for public employees to access loans, with repayments directly deducted from their salary. Payment delegation is also referred to as double-fifth, but requires voluntary concession by employers, thus, the employer retains the full rights to refuse a request for payment delegation. The fifth

[2] Although the financial legal frameworks are core components in this discusson, we have not extrapolated them in the above aggregate (See https://www.finsenas.com/differenza-tra-delega-di-pagamento-e-cessione-del-quinto/ https://www.bosettiegatti.eu/info/norme/statali/2001_0165.htm) As a rule of the thumb, the Banca d'Italia (BI) is mandated to promote security and efficiency of payment mechanisms to ensure the payment services provided to all banks are non-discriminatory, and this is guided by some legal texts as stated i.e. DPR 180/1950 and Dlgs 165/2001, and guided by payment delegation and fifth assignment. The DPR and Dlgs are decrees from the President of the Republic (DPR) relating to banks and postal payments, enforced to provide oversight in specific BI areas of payment systems. For instance, the presidential Decree (DPR 180/1950) regulates the salary-backed loan financing; and this provision allows the borrower to replace the debtor with a third party. In this way, it enables doubling of salary quota assigned, thus additional liquidity can be obtained to support unforeseen events. This provision also allows transfer of a maximum of up to 40% of the income to avoid over-indebtedness. Dlgs 165/2001 provides the general rules and principles on the organization of work in public administrations.

assignment, on the other hand, is a salary-backed loan or pension-backed loans, which must be extinguished through direct deductions on pension or salary. The fifth assignment allows a maximum deduction of 20% of the net salary, unlike the payment delegation that can extend up to 40%, including an additional fifth part. For determining the above limits (1/5 and 1/2 of the salary), reference should be made to the fixed and continuous monthly salary, net of tax, and social security deductions, excluding variable accessory treatment amounts. The loan repayment should be at most 120 months or a duration longer than necessary for the employee to achieve retirement eligibility.[3]

These tools are widespread in public administration due to their security and convenience for both employees and creditors, thanks to direct management of the repayment by the employer. The ease of access to these financial tools, combined with the perceived security of direct repayment management, can lead some employees to undertake financial obligations beyond their repayment capacity. In this context, financial education emerges as a complement and a crucial element. It can raise employees' awareness of various aspects of credit, including costs, interest rates, and inherent risks. This knowledge allows employees to make more considered financial decisions, promoting more effective management of their finances.

In summary, a well-conceived strategy that embraces facilitated access to credit and solid financial education can be a powerful lever to elevate employees' economic well-being. If implemented wisely, such an approach can improve stability and satisfaction in the work context and boost productivity. In a broader perspective, the strategy could also contribute to stimulating economic growth at the local level.

3. Data and Methodology

3.1 Research Design, Sample & Data Collection

The analysis of the inherent lending dynamics, particularly the salary assignment of the a fifth and payment delegations among Italian public employees, is constructed using data from country-level regional agencies. This study followed the quantitative, descriptive-correlational approach to the development of this research and used administrative data to provide insights regarding the patterns of borrowing among the employees in the public sector. Such associations between the socio-demographic, occupational, and loan characteristics were examined with the help of linear and logistic regression models. Linear regression was left to the continuous variables (i.e., installment size) whereas the logistic regression was utilized with the binary variable (i.e. availability of guarantors or the type of loan).

Advanced econometric models were used to uncover significant patterns, such as the association of gender and generational cohort with the tendency to structure

[3] The assignment of the fifth implies that up to a maximum of one-fifth of the paycheck is allowed on the salary or pension deductions, net of any withholdings related to other loans, insurance withholdings or foreclosures, with maximum duration of up to 120 months and minimum of 24 months.

loans through salary assignment and the link between employees' professional qualifications and the overall loan duration. Integrating organizational, behavioral, and economic perspectives, the analysis provides a nuanced and multi-dimensional view of the financial decision-making process of public employees.

This was a quantitative descriptive-correlational study aimed to analyze the dynamics of either the "a-fifth salary assignments", or payment delegations among the employees of a regional agency in Sardinia, who were subjected to loan products or credit facilities by banks as of 2023. In the academia, the term salary assignment as applied is used to refer to a formula that allows the employer to deduct up to a fifth of the salary of the employee against existing loans, but payment delegation refers to a similar practice where the employee delegates the employer to carry out the same. The study deployed both bivariate and multivariate statistical analysis approaches to assess the potential associations between the socio-demographic variables (age, gender, education qualifications) and the employment status variables (job, contract type, seniority levels) of public employees, expanding to other detailed characteristics of the acquired loans or credit facilities (amount, repayment duration, interest, presence of guarantors). An analysis of 135 civil servants was done. This figure was calculated on the basis of available full records of the administrative SAP system at the region which consisted of employees who had loans in 2023. The sample size has not been calculated using a power calculation; instead, it reflects the total number of the eligible cases contained in administrative database, which makes it a census of the target group within the period under analysis.

The sampling that we used was convenience sampling, because the data used was taken out of an already available payroll and loan management system but without further randomization. The sample although non-probabilistic has brought the target population in terms of age, gender and job role. The aim was to obtain a representation of the diversity present in the reference population in terms of job tasks, gender, and age groups. However, the generalizability of findings is limited to the regional context studied and may not apply to broader national or international populations. Although not probabilistic, the sample reflects the proportions observed in the general population of regional civil servants for the socio-demographic variables considered. The limitations of this approach lie in the impossibility of rigorously extrapolating the results to the entire target population and in the possible self-selection bias related to the optional nature of sampling participation. In connection with the lending activity, one should stress that not every applicant is to have the chance to get a loan approved. There will also be rejections that is the outcomes could be a combination of preferences of the borrowers together with the criteria set by the lenders. Hence, the identified disparities can be used to show the borrower behavior or even the preference of the institution in trying to approve the loans.

3.2 Data Validity & Statistical Analysis

For each employee with an active loan, the following information was extracted and appropriately anonymized: type of loan (assignment of the fifth or delegation of payment), date of activation and expiry, number of remaining instalments, amount of the monthly instalment, level of education, year of birth and gender. After consultation with the agency's administrators to identify the most appropriate entries and fields to provide the information necessary for the study, the data were downloaded in Excel format directly from the SAP system. No further data collection was carried out with questionnaires or interviews but was based entirely on the administrative and management data already present in the regional IT system.

To ensure the validity and reliability of the results, the quantitative data extracted from the SAP system was thoroughly cleaned, checked, and cross-checked with other internal information sources. In particular, the final dataset was shared with the office managers responsible for personnel's legal and economic management to carry out congruence checks concerning paper documents with the deeds relating to individual loans. A descriptive analysis of the variable distributions and outliers was also conducted and discussed with the agency's experts to assess their consistency with the reference population's known socio-demographic and contractual characteristics. The final results were subjected to double checks, both from a statistical and documentary point of view, to minimize potential systematic errors and ensure the solidity and reliability of the evidence obtained, with a view to a scientific publication.

In order to analyze data, linear regression was used to examine data on continuous dependent variables (e.g., amount of monthly instalment), and the logistic regressions were used when the dependent variables were binary (e.g., whether there are any loan guarantees or what type of loan contract is taken). Statistical associations were assessed by controlling for possible confounding factors, focusing on gender, age, and education level. Stratified analyses were also conducted to identify potential effect modifiers among subgroups. The statistical models were optimized through a stepwise selection procedure of the variables, evaluating the goodness of fit using the R-square indices and Hosmer-Lemeshow tests. Any violations of the assumptions of linearity, homoscedasticity, and normality of the distribution of residuals were managed through appropriate data transformations or nonparametric models. The present study belongs to a certain regional administrative context, and even though it provides us with some insight regarding the patterns among Sardinian civil servants, any broader generalisations are to be treated with some caution as it was not a random sample, and there might be some regional peculiarities. The results were interpreted with caution in light of the descriptive design of the study and the potential risk of bias from unmeasured variables or the nature of the sampling.

4. Results and Empirical Findings

4.1 Empirical Analysis

Of the data obtained for this study, most of the data analyzed was for the female participants (n=88) representing 65% of data implying that the majority of employees who took credit facilities were women. This descriptive statistic indicates that there is a gendered behavior in loan uptake, but causal explanations are to be evaded as illustrated in Figure 1.

Figure 1: Loan Type Preference by Gender

Professionally, dataset analysis revealed that participants in categories D2 (28 participants), D1(25 participants), C2 (18 participants), and B1 (15 participants) respectively took loans as of the loan data samples analyzed as shown in Figure 2. These balances indicate that there is concentration of loaning on the middle layer of the population of the state workers and it can be explained by stable income and the opportunity to avail of the payroll-backed loans.

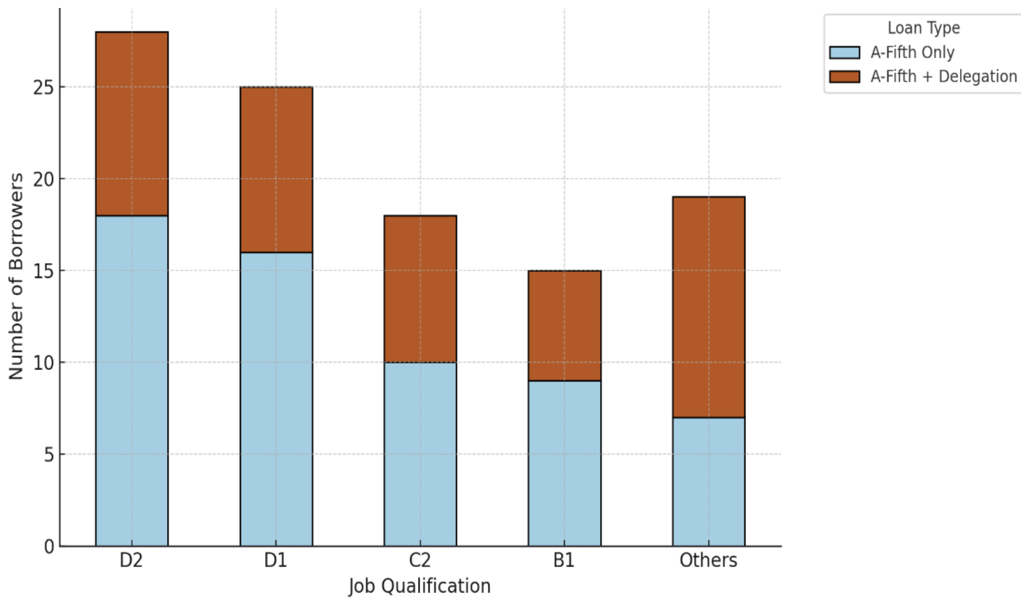


Figure 2: Loan Type by Job Qualification

Education levels among respondents vary, with 46.7% holding university degrees, 34.1% having high school diplomas, and 19.3% with middle school education as shown in Figure 3. This trend shows a skew toward higher educational attainment among borrowers.

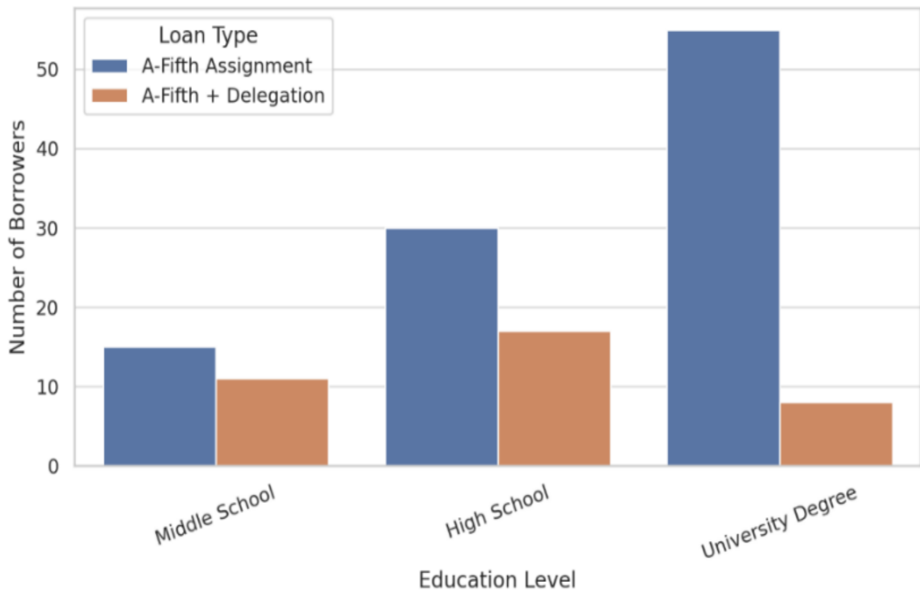


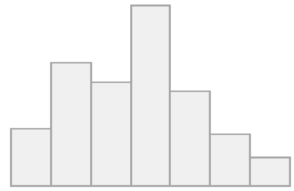
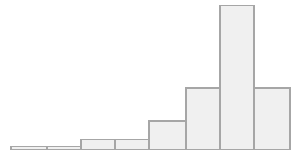
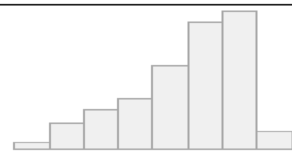
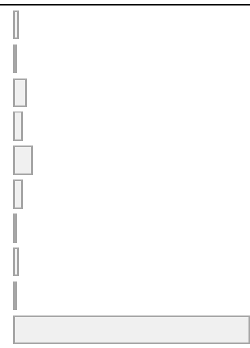
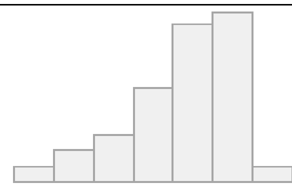
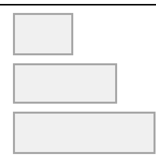
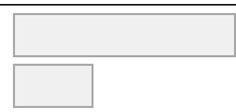
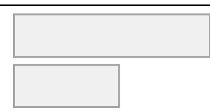
Figure 3: Loan Type by Education Level

According to the Italian credit systems, the most common system employed was 74.1 percent of the respondents used the a-fifth assignment system which entails a loan that is backed by the salary, i.e. whereby the net salary of the worker is automatically deducted up to a fifth of it by the employer to pay the debt. The rest (25.9%) took combination of the salary assignment and payment delegation whereby, a second amount of the salary may be dedicated. Again, this revealed that the legal frameworks were equally crucial variables with regard to determining credit facility access. Details of the empirical analysis results are summarized in Table 1 and Table 2.

Table 1: Sociodemographic characteristics among the study participants

Characteristic	Detail	Count/Value
Gender	Female	88
Gender	Male	47
Average Age (Years)		51.64
Job Qualification	D2	28
Job Qualification	D1	25
Job Qualification	C2	18
Job Qualification	B1	15
Loan Type	Salary Assignment	100
Loan Type	Salary Assignment + payment delegation	35

Table 2: Summary statistics of study participants

	Stats / Values	Freqs (% of Valid)	Graph
Year of Birth	Mean (sd) : 1971.4 (8) min ≤ med ≤ max: 1957 ≤ 1972 ≤ 1990 IQR (CV) : 11 (0)	32 distinct values	
Start Date	min: 2014-07-27 Wed: 2021-11-27 Max: 2023-09-01 Range: 9Y 1M 5D	59 distinct values	
End Date	min: 2024-06-30 Wed: 2031-07-31 Max: 2033-08-31 Range: 9Y 2M 1D	88 distinct values	
Number of installments	Mean (sd): 111.2 (18.9) min ≤ med ≤ max: 48 ≤ 120 ≤ 120 IQR (CV): 0 (0.2)	48: 2 (1.5%) 58: 1 (0.7%) 60: 6 (4.4%) 72: 4 (3.0%) 84: 8 (5.9%) 96: 4 (3.0%) 101: 1 (0.7%) 108: 2 (1.5%) 117: 1 (0.7%) 120: 106 (78.5%)	
Installment amount	Mean (sd): 266.8 (66.5) min ≤ med ≤ max: 90 ≤ 280 ≤ 380 IQR (hp): 86 (0.2)	88 distinct values	
Respondent's Education	Mean (sd): 2.1 (1.1) min ≤ med ≤ max: 0 ≤ 2 ≤ 3 IQR (CV): 1 (0.5)	Middle: 26 (19.3%) High: 46 (34.1%) College: 63 (46.7%)	
Type of loan	Min: 0 Mean: 0.3 Max: 1	Salary Assignment: 100 (74.1%) Salary Assignment + Payment Delegation: 35 (25.9%)	
Gender	Min: 0 Mean: 0.3 Max: 1	Female: 88 (65.2%) Male: 47 (34.8%)	

Regarding loan terms, the number of installment variables averages EUR 111.2 with a standard deviation of 18.9, showing a skewness towards the higher end, particularly at 120 installments (78.5% of cases). The installment amount variable has a mean of 266.8 and a standard deviation of 66.5, ranging from 90 to 380 EUR.

4.2 Regression Analysis

This subsection will give inferential statistics results of five models of regression. The models investigated relations between loan traits and demographics (gender, age, education) and occupational status of the borrower. Model 1 (logical regression) employs logistic regression to explore how gender and year of birth influence loan type preferences, fitting the categorical nature of the loan variable. Though in case of males, the beta was found to be -0.0393 and the probability was 0.29, this value was not significant. Subsequently, the likelihood that a person took out salary assignment loans was a little bit lower in men, but we cannot conclude that there was a significant relationship. Model 2 used the interaction between gender and education and the vehicle installment. All predictors were not statistically significant; e.g. the coefficient of gender was 5.78 ($p = 0.48$; 95% CI: -10.2 to 21.8). This lends credence to the fact that the size of repayment is probably dependent on the size of the loan and not on the nature of the borrower. Model 3 (Poisson regression) tested the factors affecting amount of installment. The presence of male and female category was also significantly related to the number of installments (β = -0. 0409, $p < 0.05$; 95% CI: -0.079 -0.002) indicating a tendency of males to use less installments as part of their preferred repayment periods. Model 3 (Poisson regression) looked into factors that determined the number of installments. The male gender was associated strongly with the short number of installments (beta = 0.0409, $p < 0.05$; 95% CI: 0.079 to 0.002) and there was a tendency of men to lend shorter durations of repayment. Model 4 (linear regression) reasoned the duration of a loan. The type of loan under consideration (dual loan or salary assignment + delegation) was the only significant predictor of a longer duration ($\beta = 149.6$, $p < 0.05$; 95% CI: 32.7 to 266.5), and gender or education level did not perform any significant role. Model 5 entailed the interaction effects. The interaction between the variables namely male, college diploma, and birth year were significant ($b = 0.289$, $p<0.05$), which means younger males with College Level diploma had higher probability to prefer certain loan structures. It can be a generational shift in money management but is to be regarded as a hypothesis that should be tested.

In this regression analysis in Table 3, the relationships between factors like gender, year of birth, and education level are examined in the context of loan characteristics across five models.

Table 3: Regression analysis

	(1)	(2)	(3)	(4)	(5)
	Type of loan	**Instalment amount**	**Number of Instalments**	**Loan duration (days)**	**Type of loan**
Main					
Gender (Ref. Female)					
Male	-0.0393	-3.092	-0.0409*	-134.3	305.8
	(-0.09)	(-0.25)	(-2.26)	(-1.21)	(1.38)
Year of Birth	0.0174	0.581	0.000527	1.187	0.131
	(0.70)	(0.77)	(0.49)	(0.18)	(1.48)
Respondent's Education (Ref. Middle school diploma)					
High school diploma		-6.393	0.00523	42.48	150.6
		(-0.39)	(0.22)	(0.29)	(0.66)
College Diploma		17.29	-0.0308	-74.89	307.3
		(1.05)	(-1.30)	(-0.51)	(1.58)
Type of loan (Ref. Salary Assignment)					
Salary Assignment + Payment Delegation				149.6	
				(1.30)	
Female # Middle school diploma					0
					(.)
Female # High school diploma					0
					(.)
Female # College diploma					0
					(.)
Male #Middle school diploma					0
					(.)
Male # High school diploma					-250.3
					(-0.84)
Male # College Diploma					-568.9
					(-1.80)
Female # Year of Birth					0
					(.)
Male # Year of Birth					-0.155
					(-1.38)
Middle school diploma # Year of Birth					0
					(.)

High school diploma # Year of Birth					-0.0768
					(-0.66)
College diploma # Year of Birth					-0.156
					(-1.58)
Female # Middle school diploma # Year of Birth					0
					(.)
Female # High school diploma # Year of Birth					0
					(.)
Female # College diploma # Year of Birth					0
					(.)
Male # Middle school diploma # Year of Birth					0
					(.)
Male # High school diploma # Year of Birth					0.127
					(0.84)
Male #College diploma # Year of Birth					0.289
					(1.80)
Constant	-35.37	-883.7	3.699	1066.7	-259.4
	(-0.72)	(-0.60)	(1.74)	(0.08)	(-1.48)
N	135	135	135	135	135
F		1.355		0.749	
P	0.779	0.253	0.134	0.588	0.892

Note: t statistics in parentheses

* $p < 0.05$, ** $p < 0.01$, $p < 0.001$

While Table 4 shows overall comparison of all 5 models.

Table 4: Regression Results Summary

Model	Dependent Variable	Significant Predictors	R^2 / Pseudo R^2	Notes
Model 1	Loan Type (Logistic)	None (Gender $p > 0.05$)	0.072	Gender not statistically significant in predicting loan type
Model 2	Installment Amount (Linear)	None	0.138	No significant predictors
Model 3	Number of Installments (Poisson)	Gender ($\beta = -0.0409$, $p < 0.05$)	0.102	Being male predicts fewer installments
Model 4	Loan Duration (Linear)	Loan Type ($\beta = 149.6$, $p < 0.05$)	0.116	Loan type affects duration, demographics do not
Model 5	Loan Type (Moderated Logistic Regression)	Gender # Education # Year of Birth ($\beta = 0.289$, $p < 0.05$)	0.191	Younger, educated males show distinct loan preferences

The analysis provides insights consistent with and contrary to theoretical expectations in financial behavior.

4.3 Quality Assessment and Result Summary

To ensure the validity and reliability of the results, standardized data collection, coding, and processing procedures were followed. In addition, another researcher subjected a random subset of the dataset to a second independent encoding, calculating an inter-judge reliability index. The statistical analysis also verified compliance with the basic assumptions of the models used, pointing out potential problems. Potential biases were monitored and mitigated through the random selection of participants from the administrative database to reduce self-selection, the use of robust statistical techniques to control for confounders, and the critical awareness of researchers concerning their own prejudices through open discussion in the research group. Where substantial risks of bias emerged, the results were interpreted cautiously, avoiding inappropriate generalizations.

The analysis highlighted the influence of demographic and professional factors on the choices regarding the type and conditions of loans. In particular, job qualifications significantly impact the preference between the assignment of the simple fifth and the assignment of the fifth with additional delegation of payment. In addition, while we cannot currently infer causal relationships, the data suggest a potential moderating role of gender and year of birth in borrowing. This study delves into the factors influencing loan decisions, specifically among employees of a regional agency in the Italian public sector. It uncovers how demographic elements like gender, age, and professional aspects significantly shape loan choices and terms. Notably, it reveals gender-specific preferences in repayment periods and the influence of job qualifications on loan types. These findings underscore the intricate link between individual attributes and financial decisions within a regional context of public administration. The study's regional focus, while limiting generalizability, offers targeted implications for policy-making and financial product design relevant to regional public employees. It highlights the need for region-specific financial solutions and communication strategies. Despite its focus, the research contributes valuable insights into financial decision-making processes in regional public sectors, setting the stage for more expansive future research.

Overall, the findings suggest that professional role, age, and gender are influential in shaping repayment preferences and loan type selection. Although it is not possible to make causal conclusions, trends brought out by this analysis can be used in later hypothesis-based research and actual policy formulation. Though administrative inefficiencies are not directly evaluated within the framework of this case, the range of loan preferences and repayment attitudes of the population groups shows that there should also be more flexible and versatile management systems regarding loans. It is therefore proposed to implement technological solutions to automate and standardize loan procedures. This would reduce operational burdens and the risk of errors while ensuring greater transparency and traceability of processes. Digital integration would also allow continuous monitoring aimed at identifying problematic or abusive situations at an early stage.

4.4 Strategic Management and Performance in the Public Sector: A New Horizon

Our research highlights the importance of strategic management in the public sector, as outlined by Bryson et al., (2014), emphasizing the alignment of individual financial decisions with organizational goals. Notably, the need for innovative financial management strategies and performance measures that consider employee demographics and professional specifics emerges, aligning with (Moore, 2021) ideas on public value creation. Customizing loan plans or financial education programs to meet the needs of different employee groups can draw inspiration from (Norton & Kaplan, 1992) providing a framework for assessing the effectiveness of financial policies. This suggests a significant opportunity to improve performance evaluation systems in the public sector, benefiting not only the employees but also the overall efficiency and effectiveness of the organization. This approach paves the way for future research exploring the interplay between individual financial decisions and organizational strategies, offering valuable insights for more effective management in the public sector.

4.5 Discussion

The study explored the dynamics influencing loan decisions among regional public employees, explicitly focusing on salary assignment and payment delegations. The regression analysis highlighted some notable patterns. For instance, gender had a significant association with loan duration preferences, aligning with research on financial behaviors suggesting distinct approaches between genders (Nyhus & Webley, 2001). Males tended to minimize long-term liabilities, preferring shorter repayment periods. Moreover, the role of financial literacy was inferred indirectly as qualifications impacted complex choices between assignment options (Disney & Gathergood, 2013). This underscores how understanding economic concepts shapes decisions. Additionally, interactions revealed generational dimensions, as younger educated males increasingly opted for certain loan types. This evolution challenges static assumptions about financial attitudes. Two main theoretic frameworks were applied to these patterns: bounded rationality concept developed by Herbert Simon and a framework of a public value developed by Moore. Integrating bureaucratic, behavioral, and economic concepts contextualized these decisions within personal capacities and structural bounds (Kalinowski & Simon, 1957). Bounded rationality helps explain why choices may be made with limited information or under cognitive constraints, especially in public systems with layered regulations. The notion of public value creation (Moore, 2021) was used not to infer direct organizational impact from private behavior, but rather to reflect how aggregate employee choices may influence institutional processes such as payroll management or credit delegation systems.

From a general viewpoint, the results highlight the influence of demographic and professional factors on choices regarding loan types and conditions, consistent with cited studies showing gender differences (Nyhus & Webley, 2001) and links between financial literacy and borrowing decisions (French & McKillop, 2016; Huston, 2012). The impact of professional qualifications confirms the perspectives of human capital theory (Muhsam & Becker, 1965), while generational interactions suggest an evolution of financial behaviors over time. By integrating bureaucratic, behavioral and economic concepts, the decisions are contextualized within information limits and cognitive capabilities (Kalinowski & Simon, 1957), while emphasizing the role of social and relational factors (Moore, 2021).

The results highlight the need for regulatory and contractual reforms to optimize loan management and enhance administrative transparency, reduce errors, and support informed choices. The implementation of integrated information systems is recommended to automate and standardize loan-related procedures. Although financial literacy was not directly assessed, the observed educational patterns suggest that targeted training may enhance informed borrowing. Such programs should be tailored to the specific profile and needs of distinct employee target groups.

5. Conclusion

It has been proposed in the present study to find out the demographic base related to loan decisions among the members of the public workforce in the Italian Public Administration in more specific terms salary-backed loans and payment delegations. The review revealed some trends according to which gender, age, and educational level are linked to the differences in selection of loans and preferences on repaying of these loans. The results present a descriptive understanding of the borrowing pattern of civil servants and their need to appreciate heterogeneity among the individuals conducting analysis of their financial choices.

Although the research study does not measure any financial literacy or change of outcome of loans, certain trends indicate the directions that shall be taken by future studies. More specifically, investigations into the psychological, institutional, or contextual determinants of these demographic differences might be studied in the further research. The current research contributes to an alert on more detailed consideration of the structural and behavioral patterns of making loans in the public sector, concentrating on borrowers, their demographics.

5.1 Marketing Implications

The results of this study offer valuable insights for stakeholders in the field of marketing within the Public Administration. First, a regional officer's detailed analysis of lending preferences and trends can guide the creation of personalized financial products. Banks and financial institutions can use this data to develop specific offerings that better align with the needs and demographics of government employees. For example, preference for specific types of loans and repayment terms among certain age groups or education levels may indicate market segmentation opportunities and more targeted targeting strategies. In addition, findings regarding gender and age differences in financial choices can influence communication and promotion strategies. Awareness of these factors will allow marketers to create more effective and resonant messages, contributing to greater engagement and understanding of the services offered. Another crucial aspect is educating and informing civil servants about the loan options available. The results suggest the possibility of developing information campaigns that improve employees' financial knowledge, reducing the risk of inadequate financial choices or over-indebtedness. This could be achieved through workshops, online seminars, or information materials distributed directly to Public Administration agencies. Finally, the propensity shown towards adopting advanced technologies for loan management paves the way for partnerships between public bodies and technology solution providers. The digitalization of lending processes could not only simplify and make loan management more efficient but also create new marketing opportunities through the integration of personalized digital services. In conclusion, the practical application of these research insights can significantly improve both the offering of financial products and the communication and engagement of government employees. The study significantly expands the understanding of the motivations behind the spread of the fifth in the Italian public sector, opening up new research for the future.

5.2 Limitations

While this study offers comprehensive insights into the dynamics of loan decisions and management within a specific region of the Italian Public Administration, it is important to recognize certain limitations. Firstly, the regional focus of the data implies that the findings may be only sometimes generalizable at a national level. The particular characteristics and administrative practices of the Sardinian agency might differ significantly from those in other regions or on a national scale, potentially limiting the broader applicability of the results. Secondly, the use of convenience sampling, while practical, introduces potential biases. The study's participants, drawn from an existing administrative database, may only represent part of the full spectrum of public employees, particularly regarding their financial behaviors and preferences. This could result in a self-selection bias, affecting the validity of the extrapolation of the findings. Additionally, the reliance on administrative and managerial data, while ensuring confidentiality and adherence to ethical norms, may omit nuanced personal insights that could be captured through more direct methods such as interviews or questionnaires.

Furthermore, interviews and focus groups would provide valuable qualitative perspectives to understand the reasons and decision-making processes behind financial choices more deeply. Such insights would facilitate the development of public policies and financial services better focused on real employee needs.

Finally, the study's descriptive-correlational design restricts the ability to establish causal relationships. While significant associations have been identified, it is not possible to conclusively determine the cause and effect between the demographic and professional characteristics of the employees and their loan decision-making processes.

Future research might address these limitations by incorporating a more diverse and nationally representative sample, employing mixed-method approaches, and exploring causal models to deepen the understanding of these dynamics.

5.3 Future research

The findings from this study point to several promising directions for future research. Firstly, exploring how trends in salary assignment and payment delegation requests among public employees of an Italian regional agency compare with those in other national or international contexts could reveal unique dynamics and provide a comparative perspective. Additionally, delving deeper into the impact of variables like family status or psychological factors might offer a more detailed understanding of financial decision-making. Investigating the effectiveness of different intervention strategies, such as financial education programs or changes in loan policies, could provide practical recommendations for improving the financial well-being of public employees. These research directions could not only enhance our understanding of the phenomenon but also yield valuable data for more effective public policies and financial management in the public sector.

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