MJIFM | MAJAPAHIT JOURNAL OF ISLAMIC FINANCE AND MANAGEMENT

Vol. 6 No. 2, 2026, 2835–2845 e-ISSN 2798-0170

THE EFFECT OF DEBT COLLECTION EFFECTIVENESS ON THE LEVEL OF UNCOLLECTED RECEIVABLES AT PERUMDA MUARA TIRTA IN GORONTALO CITY

Iklima Putri Anggai[1]
Universitas Negeri Gorontalo, Gorontalo, Indonesia
iklimaanggai2004@gmail.com

Ronald Soemitro Badu[2]
Universitas Negeri Gorontalo, Gorontalo, Indonesia
ronaldsoemitro@ung.ac.id

Surya Handrisusanto Ahmad[2]
Universitas Negeri Gorontalo, Gorontalo, Indonesia
surya@ung.ac.id

Abstract

This study aimed to analyze the effect of receivables collection effectiveness on the level of bad debts at the Regional Public Company (Perumda) Muara Tirta, Gorontalo City. The research method is a quantitative, associative approach using secondary data from monthly financial statements for the period from January 2020 to December 2024. Sampling was conducted using a saturated sampling (census) technique over 60 months, while the data analysis employed simple linear regression in SPSS. The study findings disclosed that receivables collection effectiveness had a negative and significant effect on the level of bad debts, meaning that the higher the frequency of receivables turnover, the lower the risk of bad debts that must be reserved by the company. The contribution of the collection effectiveness variable explains 29.3% of the variation in the bad debt ratio, while the remaining 70.7% is accounted for by customer economic factors and other factors beyond the scope of this study.

Keywords: Collection Effectiveness, Bad Debts, Receivables Turnover (RTO), Perumda

Vol. 6 No. 2, 2026, 2835–2845 e-ISSN 2798-0170

INTRODUCTION

Regionally Owned Enterprises (BUMD) hold a strategic position as instruments of local government in accelerating the success of regional autonomy, as stipulated in Law No. 23 of 2014 and Government Regulation No. 54 of 2017. Regulatory-wise, these entities carry a dual mandate: to serve as the driving force behind regional economic growth while also providing public services to enhance community welfare. Specifically in the drinking water sector, such as Regional Public Enterprises (Perumda), performance effectiveness is measured by the organization's ability to simultaneously align social and commercial aspects.

In the operation of a drinking water business, services are provided through a post-payment mechanism, which is defined in accounting principles as net credit sales. Although this practice is common, credit sales carry an inherent risk of bad debt, which can erode the company's profits. The management of current assets in the form of accounts receivable becomes highly risky if credit management is not strictly enforced. In line with this, Mulyadi (2017) states that standardized recording and collection procedures are vital elements for minimizing the risk of irregularities in financial management.

The situation at Perumda Muara Tirta reveals a contradictory picture between its external performance and internal conditions. Externally, the company has received an Unqualified Opinion (WTP) from the BPK consecutively; however, internal data reveals an anomaly in the form of a sharp increase in gross trade receivables of 25.84% during the 2023–2024 period. This situation is exacerbated by the establishment of an extremely high allowance ratio for uncollectible accounts receivable, reaching 55.33% of total accounts receivable in 2024. This high ratio reflects management's expectation of massive default risks in the future.

Further analysis reveals a significant concentration of overdue receivables in the residential customer segment, which accounts for 51.37% of total receivables. This issue is driven by inefficiencies in the billing system and limitations in human resource capabilities. The importance of strict internal rules is also emphasized by Agustina Walahe (2013), who notes that weaknesses in internal controls are often the root cause of accumulated arrears. Additionally, Zulna, Novianty, & Hastuti (2021) confirm that personnel competence significantly influences the effectiveness of receivables resolution in credit management.

The phenomenon gap between a positive unqualified audit opinion and a high bad debt provision ratio indicates the existence of information asymmetry regarding the actual effectiveness of the collection process. The use of more

Vol. 6 No. 2, 2026, 2835–2845 e-ISSN 2798-0170

proactive and well-planned collection strategies is necessary to minimize the risk of bad debts, in line with the argument put forth by Khairudin, Alam, & Pangestu (2022).

LITERATURE REVIEW

This study is grounded in Agency Theory and Information Asymmetry Theory, which explain the existence of conflicts of interest and information gaps between local governments as principals and the management of state-owned enterprises (Perumda) as agents (Jensen & Meckling, 1976, as cited in Widyasari et al., 2021). The high level of uncollectible receivables at Regional Owned Enterprises (BUMDs) is viewed as a tangible manifestation of agency costs arising from suboptimal supervision and asset management. In line with Signaling Theory, the effectiveness of collections, proxied by the Receivables Turnover Ratio (RTO), serves as a "positive signal" to reduce information asymmetry and validate the quality of financial reports in the eyes of stakeholders (Spence, 1973 in Zulna et al., 2021). Effective accounts receivable management through disciplined collection mechanisms is a crucial instrument in minimizing financial risk while signaling the organization's performance credibility to the public.

Accounts receivable management aims to balance the profitability of credit sales with the risk of uncollectible receivables. The effectiveness of collections is measured by the speed at which receivables are converted into cash, where a high Receivables Turnover Ratio (RTO) indicates the success of the company's credit policies and collection procedures. Conversely, a slow collection process increases the probability of customer default and triggers the establishment of loss reserves in accordance with the principle of prudence. Robust internal controls, as well as the implementation of regulatory sanctions such as Regional Regulation No. 3 of 2022 and Mayor's Regulation No. 24 of 2023, serve as vital instruments in curbing customer moral hazard behavior. The use of these regulatory sanctions theoretically functions as a disciplinary mechanism to accelerate the collection cycle and minimize the accumulation of past-due receivables.

A number of empirical studies confirm that proactive and well-planned collection strategies can significantly reduce bad debt levels. Khairudin, Alam, & Pangestu (2022) found in their study that accounts receivable management strategies have a significant negative effect on the percentage of bad debt, where increased collection effectiveness can significantly reduce the percentage of bad debt losses. Meanwhile, Lubis, Tambunan, & Pohan (2024) emphasize that an

Vol. 6 No. 2, 2026, 2835–2845 e-ISSN 2798-0170

effective accounts receivable control and management system is a fundamental prerequisite for preventing financial losses in a company. Nevertheless, challenges in the public sector often stem from an average receivables age exceeding normal standards, as evidenced by Widayanti's (2024) observations at Perumda Tirta Binangun, which revealed a decline in effectiveness due to delayed collections triggering fluctuations in the delinquency ratio. This condition is reinforced by Pratama & Handayani (2024), who state that strict collection procedures and periodic creditworthiness analysis have proven capable of materially reducing the uncollectible receivables ratio. Furthermore, Monoarfa et al. (2024) add that human resource capabilities in optimizing working capital components are vital for mitigating discrepancies between funding policies and economic realities on the ground.

Based on the theoretical framework and empirical review, the hypothesis for this study is formulated as follows: H1: The effectiveness of accounts receivable collection has a significant negative effect on the level of uncollectible accounts at Perumda Muara Tirta in Gorontalo City.

RESEARCH METHOD

This study employs a quantitative research method focused on hypothesis testing and the examination of causal relationships among variables through numerical measurement. This study involves the predominant use of numerical data, ranging from data collection and interpretation to drawing conclusions that can be objectively generalized. Waruwu et al. (2025) assert that this method plays a crucial role in generating measurable data, thereby enabling researchers to test theories deductively. Unlike the typical use of questionnaires, this study employs an ex-post facto design by analyzing historical data from monthly financial reports sourced from the internal records of Perumda Muara Tirta, Gorontalo City, covering the period from January 2020 to December 2024.

The population in this study is defined as the entire set of time series data directly related to the observed variables over 60 months. The total population and sample in this study consist of 60 monthly observations. Sampling in this study employs the exhaustive sampling (census) method, a technique where all members of the population are used as observation units. As emphasized by Sugiyono (2020), the use of a saturated sample ensures that generalizations have a very small margin of error because the characteristics of the sample are identical to those of the population. The data collection technique used in this study

Vol. 6 No. 2, 2026, 2835–2845 e-ISSN 2798-0170

RESULTS AND DISCUSSION

Descriptive Statistical Test

The results of the descriptive statistical tests on the independent and dependent variables in this study are presented in the following table:

Table 1.
Results of the Descriptive Analysis

Variabel	N	Minimum	Maximum	Mean	Std. Deviation
Collection Effectiveness (RTO)	60	0.85	2.35	1.696	0.329
Bad Debt Ratio	60	0.0076	0.1522	0.0583	0.0347

Source: Data Processed (2026)

Based on the table above, it can be explained that:

1. The Accounts Receivable Turnover (RTO) variable has a mean of 1.696, indicating that, on average, the company's accounts receivable turnover is approximately 1.7 times per month. The minimum value of 0.85 occurred during the critical phase of the pandemic, while the maximum value of 2.35 reflects the highest collection efficiency.
2. The Uncollectible Accounts Receivable Rate variable has a mean of 0.0583 (5.83%). The range of values from a minimum of 0.76% to a maximum of 15.22% indicates credit risk volatility influenced by customer economic conditions and collection effectiveness.

Classical Assumption Test

Normality Test

The results of the normality test in this study, conducted using the One-Sample Kolmogorov-Smirnov Test, are shown in the following figure:

Figure 1.
One-Sample Kolmogorov–Smirnov Test

One-Sample Kolmogorov-Smirnov Test

		Unstandardized Residual
N		60
Normal Parameters[a,b]	Mean	.0000000
	Std. Deviation	.02935815
Most Extreme Differences	Absolute	.111
	Positive	.111
	Negative	-.047
Test Statistic		.111
Asymp. Sig. (2-tailed)		.064[c]

Vol. 6 No. 2, 2026, 2835–2845 e-ISSN 2798-0170

Based on the test results in the table above, the Asymp. Sig. (2-tailed) value is 0.064. According to statistical rules, since 0.064 > 0.05, it can be concluded that the residual data in this regression model are normally distributed and therefore meet the requirements for further analysis.

Autocorrelation Test

The results of the autocorrelation test using the Durbin-Watson (DW) statistic are as follows:

Figure 2.
Durbin-Watson Statistics

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.541[a]	.293	.281	.02961	1.240

Source: Data Processed (2026)

Based on the table above, the DW value of 1.240 falls within the acceptable range for the company's monthly operational time-series data. Although there are indications of positive autocorrelation, the model is still considered valid because billing patterns across months are naturally interrelated.

The results of the Coefficient test in this study can be seen in the following table:

Table 1.
Coefficient Table

Model	Unstandardized B	Std. Error	t	Sig.
(Constant)	0.152	0.021	7.380	0.000
Efektivitas Penagihan (RTO)	-0.058	0.012	-4.901	0.000

Source: Data Processed (2026)

Based on the data above, the following regression equation is obtained:

$Y = 0.152 - 0.058 X + e$

This equation can be explained as follows:

1. The constant term of 0.152 indicates that if collection effectiveness is 0, the level of uncollectible accounts receivable is 0.152.
2. The regression coefficient for the RTO variable of -0.058 indicates an inverse relationship. Every 1-unit increase in RTO will reduce the level of uncollectible receivables by 0.058 (5.8%).

Vol. 6 No. 2, 2026, 2835–2845 e-ISSN 2798-0170

Hypothesis Testing

t-test

The results of the t-test are used to determine the effect of individual independent variables on the dependent variable. The results of the data analysis are shown in the following table:

Table 2. t-Test

Model	T	Sig.	Conclusion
(Constant)	7,380	0,000	
Collection Effectiveness	-4,901	0,000	**Influential**

Source: Processed Data (2026)

Based on the results of the t-test in the table above, it can be concluded that:

1. For the variable "Accounts Receivable Collection Effectiveness" (X), the calculated t-value is -4.901 with a significance level of 0.000.
2. Since the significance level (Sig.) of 0.000 is less than 0.05, H*o* is rejected and *H₁ is* accepted.
3. This indicates that Accounts Receivable Collection Effectiveness has a negative and significant effect on the Level of Uncollectible Accounts at Perumda Muara Tirta in Gorontalo City.

Coefficient of Determination (R^2)

The results of the F test by comparing the calculated F with the F table and P An analysis of the coefficient of determination is used to measure the model's ability to explain the variation in the dependent variable.:

Table 3.

Coefficient of Determination (R^2) table

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0,541	**0,293**	0,281	0,02961

Source: Processed Data (2026)

Based on the results of the coefficient of determination test in the table above, it can be concluded that:

1. The R-squared value (**R^2**) of 0.293 indicates that the Accounts Receivable Collection Effectiveness variable (X) contributes 29.3% to the fluctuations in the Bad Debt Ratio (Y) at Perumda Muara Tirta.

Vol. 6 No. 2, 2026, 2835–2845 e-ISSN 2798-0170

2. The remaining 70.7% (100% - 29,3%) is explained by other factors outside the scope of this study, such as customers' socioeconomic conditions and tariff policies.

The Influence of Debt Collection Effectiveness on Bad Debt Levels

The results of the hypothesis testing show that the debt collection effectiveness variable has a significance value of 0.000 < 0.05 with a t-statistic of -4.901. In this case, it indicates that debt collection effectiveness has a negative and significant effect on the level of bad debts, which means that the more optimal the performance in accelerating the conversion of receivables into cash, the lower the company's financial risk due to customer default. Every one-unit increase in the Receivable Turnover (RTO) ratio is statistically proven to reduce the bad debt ratio by 0.058 (5.8%) at Perumda Muara Tirta.

From the perspective of Agency Theory, debt collection effectiveness serves as a monitoring mechanism by the management (agent) to protect the interests of the local government as the owner (principal). Effective collection reduces Information Asymmetry by transforming "hidden" information regarding customer collectability into transparent cash flows. Furthermore, according to Signaling Theory, an increase in RTO and a decrease in bad debt ratios send a positive signal to stakeholders that management has implemented systemic improvements, validating the "Unqualified Opinion" (WTP) with healthy financial fundamentals.

The analysis of current conditions reveals that debt collection effectiveness at Perumda Muara Tirta is categorized as "Less Effective" (Kurang Efektif), with a Days Sales Outstanding (DSO) of 126.74 days. This condition is primarily driven by the dominance of arrears in the Household segment, which accounts for 51.37% of the total gross receivables with over 21,000 accounts in arrears. Inefficiencies in conventional collection methods and limited human resource capabilities cause the monitoring process to be reactive rather than preventive. Consequently, the cash collection cycle is hampered, taking an average of 4 months to convert receivables into cash.

Regarding the level of bad debts, the company faces significant credit risk exposure, with the Allowance for Impairment Losses ratio reaching 51.94% of total gross receivables. This high ratio is a logical consequence of an aggressive 25.84% growth in gross receivables between 2023 and 2024, which was not balanced by accelerated cash collection. Furthermore, the accumulation of "chronic" receivables aged over 24 months that have not been permanently written off continues to burden the balance sheet. This high provision reflects

Vol. 6 No. 2, 2026, 2835–2845 e-ISSN 2798-0170

management's adherence to the Prudence Principle and PSAK 71, ensuring that receivables are presented at their net realizable value despite the massive risk of default.

The findings of this study are consistent with previous research by Khairudin, Alam, & Pangestu (2022), which found that proactive collection strategies significantly reduce the growth of bad debt. These findings are also supported by the research of Boroallo, Tangdialla, & Paulus (2024), which confirms that collection efficiency is a vital instrument for public service entities such as Perumda in maintaining liquidity stability. Although the collection variable contributes 29.3% to controlling the level of uncollectible receivables, the remaining 70.7% is influenced by external factors such as economic conditions and the purchasing power of the people of Gorontalo City.

CONCLUSION

Based on the results of the analysis and discussion conducted regarding the Effect of Accounts Receivable Collection Effectiveness on the Level of Uncollectible Accounts at Perumda Muara Tirta in Gorontalo City, the following conclusions can be drawn:

1. The effectiveness of accounts receivable collection has a negative and significant effect on the level of uncollectible accounts at Perumda Muara Tirta in Gorontalo City. This indicates that the more optimal management performance is in accelerating accounts receivable turnover (increasing RTO), the lower the risk of losses due to customer defaults will be.
2. Accounts receivable collection effectiveness contributes a significant 29.3% to explaining the fluctuations in the uncollectible accounts ratio. Although there are other external factors, such as customers' socioeconomic conditions, which account for 70.7% of the variation, internal policies—specifically the intensity of active collection efforts—remain a significant determining factor in maintaining the quality of the company's current assets.
3. The current status of accounts receivable collection effectiveness falls into the "Less Effective" category, with an average Days Sales Outstanding (DSO) of 126.74 days. The high volume of arrears in the Household customer segment, which reaches 51.37%, and the reliance on conventional collection methods are the main obstacles to achieving a healthy cash cycle. The high level of uncollectible receivables reflects the existence of agency costs and information asymmetry between management and equity owners.

Vol. 6 No. 2, 2026, 2835–2845 e-ISSN 2798-0170

REFERENCES

Boroallo, D. L., Tangdialla, L. P., & Paulus, B. B. (2024). Analisis Efektivitas Penagihan Piutang Pada Perusahaan Daerah Air Minum Kota Makassar (Studi Kasus Perumda Air Minum Kota Makassar, Wilayah Pelayanan 2). *Paulus Journal of Research*, 1(1).

Khairudin, F., Alam, S., & Pangestu, M. (2022). Strategi Pengelolaan Piutang Usaha dalam Upaya Menurunkan Piutang Macet pada PT. Perkebunan Nusantara XIV (Persero) Makassar. *Jurnal Ilmiah Ecosystem*, 22(3), 643-652.

Lubis, N. R., Tambunan, M. D., & Pohan, E. F. (2024). Pengaruh Efektivitas Pengelolaan Piutang dan Sistem Pengendalian Piutang terhadap Kinerja Keuangan pada PT. Bank Sumut. *Jurnal Riset Akuntansi dan Bisnis*, 24(1), 1-15.

Monoarfa, R., Hiola, Y., & Ahmad, S. H. (2024). Pelatihan Teknik Perhitungan Modal Kerja Ideal BUMDes. *Mopolayio: Jurnal Pengabdian Ekonomi*, 4(1), 42-49.

Munawir. (2021). Analisis Pengaruh Tingkat Perputaran Piutang dan Tingkat Perputaran Persediaan Terhadap Profitabilitas pada Perusahaan Sektor Industri Dasar dan Kimia yang Terdaftar di Bursa Efek Indonesia Periode 2017-2019. *Jurnal Akuntansi dan Keuangan Methodist*, 2(1), 40-52.

Pemerintah Republik Indonesia. (2017). *Peraturan Pemerintah Nomor 54 Tahun 2017 tentang Badan Usaha Milik Daerah*.

Perumda Air Minum Muara Tirta. (2025). *Data Keuangan Bulanan Perumda Muara Tirta Periode 2020-2024*. Gorontalo: Departemen Administrasi Umum dan Keuangan.

Pratama, R., & Handayani, S. (2024). Evaluasi Manajemen Piutang dan Kebijakan Kredit dalam Meminimalisir Bad Debts pada Perusahaan Daerah. *Jurnal Riset Manajemen dan Bisnis*, 9(1), 22-35.

SPSS Output. (2026). *Analisis Regresi Linear Sederhana: Pengaruh RTO terhadap CKPN pada Perumda Muara Tirta*. Hasil Olah Data Sekunder.

Sugiyono. (2020). *Metode penelitian kuantitatif, kualitatif dan R&D*. Bandung: Alfabeta.

Sugiyono. (2024). *Metode penelitian kuantitatif, kualitatif dan R&D*. Bandung: Alfabeta.

Waruwu, M., Pu`at, S. N., Utami, P. R., Yanti, E., & Rusydiana, M. (2025). Metode penelitian kuantitatif: Konsep, jenis, tahapan dan kelebihan. *Jurnal Ilmiah Profesi Pendidikan*, 10(1), 917–932.

Vol. 6 No. 2, 2026, 2835–2845 e-ISSN 2798-0170

Widayanti, I. H. (2024). *Analisis Pengelolaan dan Pengendalian Piutang pada Perumda Tirta Binangun Kabupaten Kulon Progo*. Skripsi, Universitas Negeri Yogyakarta.