

Do Institutional Pressures Affect Investment Decisions of Small-Scale Recycling Firms in Tanzania?

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Abstract

This paper investigated the effect of institutional pressures on investment decisions of small-scale recycling (SSR) firms in Tanzania. The paper employed Institutional theory to study the effects of coercive, normative, and mimetic pressures on three dimensions of investment decisions namely the choice of specific recycling investments, the share of recycling investment in the portfolio, and the level of diversification within the recycling investment portfolio. The study was based on 400 randomly selected SSR firms. Multivariate probit analysis, ordinary least squares, and ordered logistic regression models were used on the three dimensions of investment decision respectively. The study revealed positive effects of coercive and mimetic pressures and limited influence of normative pressure in the choice of specific waste recycling types. Coercive pressure had a strong positive influence on the recycling investment share in the portfolio. It was also found that mimetic, normative, and coercive pressures have a strong positive influence on the level of diversification within the recycling investment portfolio. These results hold relevance for policymakers and professionals in the field who seek to promote diverse and sustainable investment in recycling within the waste management industry, considering the complex interactions of institutional dynamics.

NG-Journal of Social Development

Vol. 13 Issue 2 (2024)

ISSN(p) 0189-5958

ISSN (e) 2814-1105

Home page

<https://www.ajol.info/index.php/ngjsd>

ARTICLE INFO:

Keyword:

Institutional pressure, investment decision, Small-Scale Recycling Firms

Article History

Received: 14th April, 2024

Accepted: 18th June 2024

DOI: <https://dx.doi.org/10.4314/ngjsd.v13i2.12>

1. Introduction

Investment in recycling is a prerequisite for a transition to a circular economy, a mission of mitigating climate change and protecting the earth's limited resources and biodiversity for future generations (McLennan, 2021). It is also a good investment avenue as waste generation keeps on increasing (Senzige, Makinde, et al., 2014; Senzige, Nkansah-Gyeke, et al., 2014 & Njau, 2014). Given the current level of waste generation in Tanzania, which ranges from 12.1 million to 17.4 million tonnes per year (United Republic of Tanzania, 2020), investment in waste recycling streams is a potential investment opportunity with a positive effect on global climate change. Unfortunately, despite the availability of this investment opportunity, conducive investment climate and incentives provided by the government to attract more investments in various waste recycling, Tanzania's waste recycling rate is still very low. The current Tanzania's waste recycling rate is only 7.8%, which is far less compared from the target set by the African Union, which requires all cities of member states to recycle at least 50% of wastes they generate (UNEP, 2018).

Globally, small-scale recycling firms, famously called scrap dealers are recognised as key participants and investors along the recycling value chain (Conke, 2018) UNIDO, 2019). With the available recycling investment opportunity in Tanzania, it is not clear why there is low investment in this industry? Moreover, what affects investment decisions among small scale waste recycling firms in Tanzania is not known. The benefits from waste recycling may not be realised without knowing what affects it and therefore adopting appropriate strategies to promote the same.

Studies conducted in different sectoral context indicate that institutional pressures affects investment decisions (Depoers & Jérôme, 2020; Gopalakrishna-Remani et al., 2016). Despite these studies being on different sectoral context, they also have shown varying results, which render their use in this context less relevant to knowing what influence investment decisions among small-scale waste recycling firms in Tanzania.

This study was intended to determine whether institutional pressures namely coercive; mimetic; and normative pressures affect the choice of a specific waste recycling investment, the share of waste recycling investment in the portfolio, and the level of diversification within waste recycling investment portfolio.

2. Theoretical foundation

This study is built on insights from (Scott, 1987) neo-institutional theory, stating that institutions shape firms' beliefs by positing institutional influences on managers' behaviours, who usually make decisions for their organisations. Managers are social beings, and for that matter, they are connected to institutional environments, which provide them with a basis for actions and shape their behaviours (Urban & Kujinga, 2017). Thus, before actors decide, they have to consider the influence of various institutions to interpret what actions are legitimately available to them and make their decisions accordingly (Lawrence et al., 2011).

The institutional theory attempts to explain how institutions guide the production of goods and the provision of various services. North (1991) defines institutions as the humanly devised constraints that consist of informal constraints, such as customs and traditions, and formal rules, such as regulations and laws. DiMaggio and Powell (DiMaggio & Powell) argue that in order to obtain legitimacy, organisations within the same field tend to become isomorphic by adopting similar structures and processes. In explaining how institutions guide the actions of managers,

DiMaggio and Powell (DiMaggio & Powell) posit three kinds of institutional pressures influencing behaviours. These are coercive, normative, and mimetic pressures. Likewise, Scott (1995) suggested the three as a possible framework for analysis when examining organisations or organisational change.

These institutional pressures provide guidelines and constrain actions (Scott, 1987). Based on this view; values, laws, and practices related to the waste recycling business in the form of coercive pressures, normative pressures, and mimetic pressures may affect how investors make investment decisions within small scale waste recycling firms.

Coercive pressure arises from the rules that an authoritative organisation or actor sets to enforce desirable behaviours of other organisations or their organisational members (Depoers & Jérôme, 2020; Latif et al., 2020). Coercive pressure provides organisations with coercive constraints and can enforce legal sanctions on those who do not comply. It can also help put in place game rules for individuals and firms' participating in various economic activities. Classical Institutional Theory defines coercive pressures as the pressures originating from institutions in a firm's environment, which directly formulate rules that an organisation needs to comply with. Based on the previous definition, institutions should be powerful enough to directly reward compliance or sanction non-compliance (DiMaggio & Powell, 1983). In our case of waste recycling firms, various institutions such as local and central government, and other local agencies can use their power to impose constraints and regulate firms dealing with waste recycling. Thus, theoretically, investors' perceptions of these laws, regulations, and operations of other institutions related to smooth operations of the waste recycling business may negatively or positively affect their investment decisions within their recycling firms.

Apart from coercive processes, institutions also consist of normative structures and activities that pressure organisational change. Normative pressure refers to social obligation caused by collective expectations in a community (Kim & Stanton, 2016). Normative pressure sets shared values and norms that govern the suitability of organisations' behaviours (Gopalakrishna-Remani et al., 2016).

For firms dealing with waste recycling, their business norms expectations may be accomplished through special requirements from their customers and standard practices established by their business associations. Furthermore, doing business as a choice means of earning life may be perceived positively or negatively by the community. Some carriers are perceived as of higher status than others. In addition, the media plays a big role in drawing the citizens' and investors' attention to a particular phenomenon such as waste recycling as an investment avenue (Urbano & Alvarez, 2014). Such perceptions may affect the decision-making of an investor in waste recycling. Thus, theoretically, investment decisions in the waste recycling sub-sector may be affected by the presence or absence of normative pressures.

Committing funds to a business with the expectation of generating future profits is associated with uncertainties due to an investor's inability to predict the future. A standard response to such uncertainty is for the investor to imitate a given practice because of the favourable results achieved by other firms in the same trade or sometimes because of the popularity of the trade or practice (Latif et al., 2020). Firms also mimic the behaviours of other organisations with which they share important features. Mimetic isomorphism suggests that organisations will follow leading organisations, which have benefited from being the first movers in the industry (Deng & Ji, 2015). Such a strategy is made possible because of mimetic pressures exerted by the

institutional environment (Yigitbasioglu, 2015). Mimetic pressures force organisations to avoid uncertainty and risk (Umemura & Slater, 2021).

Concerning SSR firms' investment decisions, it is theorised that firms decide to invest in the waste recycling industry after seeing other firms succeed and benefit from such business or after hearing that waste recycling is a profitable business. This study, applies institutional theory to study how external factors in terms of pressures can influence firm's investment decision making.

2.1 Empirical review

2.1.1 Coercive pressure and investment decisions

Research on the influence of coercive or regulatory pressure on a firm's decision-making across various sectors has shown mixed results. On one hand, coercive pressure has shown a significant and positive influence on top management decisions across various sectors, such as healthcare analytics adoption (Gopalakrishna-Remani et al., 2016), corporate tax disclosures (Depoers & Jérôme, 2020), and environmental management accounting adoption (Latif et al., 2020).

On the other hand, coercive pressure has shown a more negligible effect (Martínez-Ferrero & García-Sánchez, 2017) or no effect (Masini & Menichetti, 2013) on voluntary decisions. Specifically, on investment choice decision, research by Choi and Yim, (2012) indicated that coercive pressure do not influence IT investment decision making. How are these findings applicable in small-scale recycling (SSR) firms in Tanzania?

About the effect of coercive pressure on the share or size of investment, literatures have shown that investment limitations imposed by regulators can prevent desired investment allocation. For example in a study focusing on institutional pressure and IT investment levels, it was found that coercive institutional pressure positively influences the size of IT investments in firms (Ravichandran et al., 2009). This may imply that on areas of investments that are less regulated or favourable rules and regulations, it is expected that investors will allocate much of their capital in those areas, in absence of other factors.

With regard to the effect of coercive pressure on the level of diversification in the firms portfolio, research have revealed that Government rules and regulations, are very influential firms to adoption of sustainable practices(Masocha & Fatoki, 2018). Similarly, coercive pressure have been shown to promote cross-functional green strategy alignment(Yue et al., 2023). These two strategies can be seen as diversification efforts towards environmentally friendly practices. Hence it can be inferred that coercive pressures can influence the level of diversification within the firm's investment portfolio.

2.1.2 Normative pressure and investment decisions

Normative pressures among organisations usually are derived from the industry and cultural norms. (DiMaggio & Powell, 1983)assert that these normative forces are important because they help enforce compliance structures required for business or professions. Studies indicate that the effect of normative pressures on decision-making varies according to the sectors in which the decision maker's organisation belongs.

(Gopalakrishna-Remani et al., 2016) assert that normative pressure does not influence top management belief on adopting healthcare analytics for improving patient satisfaction scores. In

other studies, normative pressures have positively and significantly affected various decisions in different contexts, such as IT investment, corporate tax compliance, environmental management accounting adoption, and sustainability reporting (Depoers & Jérôme, 2020; Kalyar et al., 2020; Latif et al., 2020; Martínez-Ferrero & García-Sánchez, 2017; Ravichandran et al., 2009).

The reviewed studies focused on the effect of normative pressure on choice or adoption decision making in other sectors, which offer contradicting results. Nevertheless, the effect of normative pressures on specific investment adoption or choice among small-scale recycling firms in Tanzania is not well documented.

Literature about how normative pressures influence investment share in the portfolio are inconclusive too. In a study that explored the influence of culture on the investment decisions of Ghanaians, among other things, it was found that most investment decisions are influenced by belief systems (Bonna & Amoah, 2019). But in another study it was reported that IT investment decisions are influenced by both economic factors as well legitimacy considerations such as conforming to institutional norms (Ravichandran et al., 2009). Nothing has been documented on the effects of normative pressure on investment share of the SSR in Tanzania.

Regarding the effect of normative pressure on the level of diversification, studies indicate that normative pressures positively influence the implementation of external green practices (Díaz & Saeed, 2018). Furthermore, normative pressures have been found to have positive impact on adopting green supply chain management practices (GSCM) practices (Kalyar et al., 2020; Saeed et al., 2018). Here it has been inferred that by implementing multiple practices, is the same as diversifying. Based on the above literature, it can be said that normative pressure may have a positive effect on the level of diversification within firms' investment portfolio.

2.1.3 Mimetic pressure and investment decisions

Previous studies have shown mixed findings regarding the effect of mimetic pressures on a firm's adoption or choice decision-making across sectors. Mimetic pressure have shown to have no effect on IT investment decision (Choi & Yim, 2012). On the other side, mimetic pressure has shown a positive and significant effect on management decisions such as healthcare analytics adoption, corporate tax disclosures, and environmental management accounting adoption (Depoers & Jérôme, 2020; Gopalakrishna-Remani et al., 2016; Latif et al., 2020). Apart from all stated findings, however, the influence of mimetic pressure on investment decisions about choice of a specific waste investment type among SSR firms in Tanzania is not documented.

With regard to how mimetic pressures affect the share or size of investment in the portfolio, there is an inconclusive result. For example, while a study about how imitation influence investment share and prices, did not provide specific results (Masmoudi, 2014); another study found that banks imitate their legitimacy-based groups in branching decisions (Barreto & Baden-Fuller, 2006). In this regard there is a need to explore in the recycling sub sector, on how mimetic pressure can affect the size of investment in that sector.

Finally, regarding the effect of mimetic pressure on diversification, literature have shown that mimetic pressures do influences firms to adopt diversification strategies by leading them to adopt similar behaviours as other organisations in their field (Moreau, 2021; Özbek et al., 2024). For example, Japanese beer companies adopted mimetic behaviours and created a range of products to pursue new consumers and retain existing ones (Umemura & Slater, 2021).

Based on the reviewed literature, it is not evident as to how institutional pressures influence investment decisions among owners of SSR firms. Hence the current study was aimed to explore how institutional pressures affect investments decisions in terms of choice of specific recycling investment, share of recycling investment in the firms' portfolio, and the level of diversification within the recycling investment portfolio.

3. Methodology

This study used cross-sectional data collected from 400 owner-managers of small-scale recycling firms in Tanzania. The firms are located in five Municipalities in Dar es Salaam city namely Ilala, Temeke, Kinondoni, Ubungo and Kigamboni, which made five strata. A stratified sampling method was used to obtain a sample from a sampling frame of 437 firms that are members of the Tanzania Environmental Recyclers Cooperative Society (TERECOSO). Simple random sampling was applied on each stratum to obtain the study sample. The sample composition for each stratum was: 105 for Ilala, 120 for Temeke, 67 for Kinondoni, 73 for Ubungo, and 35 for Kigamboni. These sample sizes ensured that the number of samples selected from each stratum is proportional to the size of the stratum, to allow for a representative sample of the entire population.

4. The Model

Three models were opted to determine the effect of institutional pressures on three dimensions of investment decisions. Dependent variables in line with the three dimensions of investment decisions were: Choice of recycling investments; Share of recycling investment; and Level of diversification within recycling portfolio. The independent variables were institutional pressures namely: Coercive Pressures; Normative Pressures; and Mimetic Pressures. Model diagnostic tests to check for multicollinearity and heteroskedasticity problems were conducted and no threats were found. The variables used and their respective measurement are indicated in Table 1.

Table 1: Variable measurements

Component	Variables	Scale	Reference
Investment decisions	Choice of recycling investments	Nominal scale: 1= invested in specific waste 0=Not invested in specific waste	Massini and Menichetti (2013)
	Share of recycling investment	Continuous scale: the ratio of recycling investment in the portfolio	Cheraghi et al (2019); Masini and Menichetti
	Level of diversification within recycling portfolio	Ordinal scale: 1= invested in one category (No diversification); 2= invested in two (Low diversification); 3= invested in three (moderate diversification); 4= invested in four (high diversification); 5=invested in five categories (very high diversification)	Masini and Menichetti (2013)
Institutional Pressures	Coercive Pressures	Likert scale/ordinal	Krell et al., 2016; (Masini &

	Normative Pressures	Likert scale/ordinal	Menichetti, 2013)
	Mimetic Pressures	Likert scale/ordinal	

Source: Authors' construction (2024)

4.1 The effect of institutional pressures on waste recycling investment choice

The analysis of the effect of institutional pressures on the choice of a specific waste recycling investment was done by using a multivariate probit model due to the nominal scale nature of dependent variable. The model has the ability to use cumulative distribution function of the probit distribution and it is widely used in similar studies (Dimoso & Andrew, 2021; Kitole & Sesabo, 2022; Maddala, 1983; Theodory & Kitole, 2024). The choice of variables used in this study was guided by the institutional theory and previous studies. We consider a regressand variable Y with only two choices (dichotomous) and with its regressors X_k . Since there are multiple investment choices, the model for the log of odds is given by:

$$\sum_{i=1}^N \log Pr(y_i | X_i \beta_i \Sigma) \quad (1)$$

Whereby β_i represents effects of explanatory variable x_i on log-odds that $Y = 1$, while controlling other explanatory variables x_k . That is, $\exp(\beta_i)$ becomes a multiplicative effect on odds of a unit increases on the explanatory variable x_i , when all other variables x_k are constant. The idea behind constructing multivariate probit is by making one of the responses as a base outcome of which all other remaining categories are constructed relatively to it and all responses are not ordered hence any of them can be a base outcome. The parameters were estimated using maximum likelihood.

4.2 The effect of institutional pressures on waste recycling investment share in the portfolio

The effect of institutional pressures on the share of waste recycling investment in the overall investment portfolio of small-scale waste recycling firms was analysed by using the linear regression model due to the continuous scale of measurement of the dependent variable (Kitole & Genda, 2024; Kitole & Utouh, 2024) as shown in Table 1. A multiple linear regression model used is expressed as:

$$Y = a + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_3 X_3 + \varepsilon \dots \dots \dots (2)$$

Where:

- Y is the share of waste recycling investment in the portfolio.
- a is the regression constant or intercept.
- $\beta_1, \beta_2, \beta_3$ are the regression coefficients
- X_1 is coercive pressure; X_2 is normative pressure; X_3 is mimetic pressure
- ε is the error term

4.3 The effect of institutional pressures on the level of diversification within waste recycling investment portfolio

The Effect of owner-managers behavioural factors on the levels of diversification within the waste recycling investment portfolio was analysed by using the ordered logit model. Variable measurements are as indicated in Table 1.

The ordered logit model assumes that there is a latent (unobserved) continuous variable y^* which is related to the observed ordinal variable y_i (Kitole et al. 2023) as follows:

$$y^* = \beta'x_i + \varepsilon_i \quad -\infty < y_i^* < \infty \dots\dots\dots (3)$$

where:

- x_i is the vector of independent variables (coercive pressures, mimetic pressures, and normative pressures).
- β is the vector of coefficients to be estimated.
- ε is the error term, assumed to follow a standard logistic distribution.

The observed variable y_i is determined by the latent variable y^* through a series of threshold

In this study the ordered equity levels under examination have been described as;

$$y^* = \begin{cases} \text{VeryHighdiversification} & \text{if } y_i = 5 \\ \text{Highdiversification} & \text{if } y_i = 4 \\ \text{Moderatediversification} & \text{if } y_i = 3 \\ \text{Lowdiversification} & \text{if } y_i = 2 \\ \text{Notdiversified} & \text{if } y_i = 1 \end{cases} \quad (4)$$

5. Results

5.1 Descriptive Results

The data set used in this study shows that 271 firms, equivalent to 67.75% are single ownership enterprises, while the remaining 32.25% are owned by groups of individuals. This suggests that individual ownership is more prevalent, possibly due to the relatively smaller scale and nature of the recycling business, which may require less complex ownership structures. With regard to the investment choices of recycling firm owners, the data shows that popular recycling options are plastic (76.25%), metals (71.00%), papers (36.50%), and glasses (29.75%). However, it is important to note that e-wastes have the lowest representation, with only 26% of owners selecting this investment category. It should be noted that the choice of waste category is not mutually exclusive, meaning that a firm can choose more than one waste category at a time.

These findings shed light on the current focus and preferences of recycling entrepreneurs, indicating potential areas of specialisation and market dynamics within the recycling industry in Tanzania.

5.2 Empirical Results

5.2.1 Waste Recycling Investment Choice

The effects of coercive, mimetic, and normative institutional pressures on waste recycling investment choice were tested. Table 2 presents the outcomes of the multivariate probit model on the effects of institutional pressure on investment choice regarding waste recycling in diverse categories of wastes, namely, plastics, metals, papers, glasses, and e-waste.

As indicated in Table 2, the findings reveal that the presence of coercive institutional pressure, represented by legal and regulatory pressures, has a positive and significant effect on the choice of investing in recycling of papers, glasses, and e-wastes. Coefficients for these variables are strongly statistically significant (p -value < 0.01). The findings imply that, firms are more likely to invest in recycling of papers, glasses and e-wastes when coercive pressures such as legal or regulatory pressures increase. Such findings suggest that investment in recycling as scrap dealer, apart from being a business opportunity, it offers livelihood opportunities for poor and unskilled population. Taking into consideration that over 70% of sampled firm owners have primary or secondary education, are married, widows or divorced. This makes it financially advantageous for firms to invest to these activities, despite the perception that the coercive pressures are too strict. These findings support the findings by (Latif et al., 2020) that firms facing coercive pressure normally respond positively to the intended behaviour.

Table 2: Multivariate Probit Estimates for the Effects of Institutional Pressure on the Waste Recycling Investment Choice

Variables	Waste Recycling Investment Choice				
	Plastics	Metals	Papers	Glasses	E-waste
Coercive	-0.008 (0.067)	-0.103 (0.066)	0.500*** (0.072)	0.690*** (0.079)	1.124*** (0.101)
Mimetic	0.682*** (0.122)	-0.063 (0.122)	0.713*** (0.131)	0.622*** (0.149)	0.424*** (0.160)
Normative	0.053 (0.083)	0.804*** (0.099)	0.128 (0.082)	0.032 (0.087)	0.055 (0.094)
Constant	-2.168*** (0.555)	-0.945 (0.548)	-5.412*** (0.659)	-5.704*** (0.743)	-6.840*** (0.776)
Observations	400	400	400	400	400
Robust standard errors in parentheses *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$					

Source: Authors' computation (2024)

However, we did not find any evidence on the effect of coercive pressure on choice of investment in plastics and metals recycling. These mixed results on the effect of coercive pressure on choice of investment support the previous mixed results across sectors and context in previous studies (Martínez-Ferrero & García-Sánchez, 2017). That is, positive influence (Gopalakrishna-Remani et al., 2016), no effect (Masini & Menichetti, 2013), and negative effect (Choi & Yim, 2012). This implies that there is no uniform effect of coercive pressure across all firms or sectors. The effect will depend on the nature of investment type the firm would like to invest into.

Regarding the effect of mimetic pressures on recycling investment choices, results show that mimetic pressure has significant positive effect on firm owners' choices to invest on recycling of plastics, papers, glasses, and e-wastes. This is evidenced by the coefficients for mimetic pressure on these wastes being all statistically significant at the $p < 0.01$ level. This means that when there

is a higher degree of mimetic pressure, the likelihood of investing in recycling for these waste types increases. These findings are in line with previous studies but in different contexts, where mimetic pressure has shown a positive and significant effect on various decisions such as healthcare analytics adoption, corporate tax disclosures, and environmental management accounting adoption (Depoers & Jérôme, 2020; Gopalakrishna-Remani et al., 2016; Latif et al., 2020). On the other side, mimetic pressure has shown to have negative but insignificant effect on investing in metals among SSR firms. In other words, there is no evidence to prove that mimetic pressure affects the choice of investment in metal recycling. This is possibly due to high capital needed in metal scrap investments or and the presence of strict laws related to metal scrap dealing, which can discourage people to copy business lines of their peers.

On the other side, normative pressure shows a positive significant influence on the investment choice in the recycling of metals (0.804, $p < 0.01$). This may imply that social norms may have an impact on the choice of investing in the recycling of metals. This may also imply that the choice of investment in recycling of metals may be promoted by an increase in normative pressures such as financing from buyers, participation in business associations, social media or environmental training.

This study results conforms with previous studies, where normative pressures were found to have positive and significant effect on various decisions in different contexts, such as IT investment, corporate tax compliance, environmental management accounting adoption, and sustainability reporting (Depoers & Jérôme, 2020; Kalyar et al., 2020; Latif et al., 2020; Martínez-Ferrero & García-Sánchez, 2017; Ravichandran et al., 2009). For firms dealing with waste recycling, their business norms expectations may be accomplished through special requirements from their customers and standard practices established by their business associations.

More research may be undertaken to gain more insights on why normative pressure influence more investment decisions in metals comparing to other waste categories namely, plastics, glasses, papers, and e-wastes.

5.2.2 Waste Recycling Investment Share in the Portfolio

Investing in recycling was assumed to be affected positively or negatively by the presence of institutional pressures namely coercive, normative or mimetic. Such institutional pressures were sought to have effect on the recycling investment share in the recycling firm's investment portfolio. An OLS model was opted for the analysis due to the measurement scale of dependent variable being of continuous nature. The OLS results are shown in Table 3.

Table 3: Effects of institutional pressure on recycling investment share

Variables	Coefficient (p-value)
Coercive Pressure	0.079*** (0.008)
Mimetic Pressure	-0.013 (0.015)
Normative Pressure	-0.003 (0.011)
Constants	0.361*** (0.069)
Observations	400
R-squared/Pseudo R-squared	0.189

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

With respect to the effect of coercive institutional pressure on the share of recycling investment in the portfolio, results shown in Table 3 indicate that the regression coefficient is 0.079 ($p < 0.01$), signifying a favourable and significant effect of coercive pressure on the share of recycling investment in the firm's investment portfolio. The obtained result implies that with positive enforcement of laws and regulations by responsible organs, firms tend to apportion a big proportion of their investments towards recycling business.

These results are in line with a previous study focusing on institutional pressure and IT investment levels, where it was found that coercive institutional pressure positively influences the size of IT investments in firms (Ravichandran et al., 2009). This may imply that on areas of investments that are less regulated or with favourable rules and regulations, it is expected that investors will allocate much of their capital in those sectors, in absence of other concealing factors.

The coefficients for mimetic and normative institutional pressures are both negative with values of -0.013 and -0.003 respectively, indicating non-statistical significance ($p > 0.05$). This implies that there is no significant effect of mimetic and normative pressures on the proportion of investment allocated toward recycling comparing to other business lines of the same firm.

The review of previous studies on the effects of mimetic and normative pressures on the allocation of investment in a portfolio show inconclusive results. On one hand some such as Barreto & Baden-Fuller, (2006) and Bonna & Amoah, (2019) identifying positive effects. On the other hand, Ravichandran et al., (2009) present conflicting perspectives.

The conflicting findings emphasise the significance of examining contextual and sector-specific influences when analysing the impact of normative and mimetic pressures on investment decisions. It is apparent that normative and mimetic pressures do not have uniform effects on investment decisions across sectors; rather, their influence varies based on the broader context and specific industry characteristics under inquiry.

Furthermore, the complexity of normative influences calls for an in-depth examination, especially in industries characterised by the strong influence of societal norms, cultural values, and institutional credibility. The broad analysis of how these normative pressures interact with economic factors and sector-specific dynamics can offer a more complete insight into the processes underlying investment decisions within the recycling sub sector.

5.2.3 Level of Diversification within Recycling Investment Portfolio

Finally, the study determined the effect of institutional pressure on the level of diversification within SSR firm's investment portfolio using ordered logit model. Five levels were considered, where investment in a single category of waste recycling was considered no diversification; investment in two, three, four or five categories of wastes was considered as having low, moderate, high, and very high levels of diversification respectively (See Table 1).

The findings in Table 4 indicate that all coercive, mimetic and normative institutional pressures have positive and significant effect ($p < 0.01$) on the level of diversification within the recycling investment portfolio. That is, the increased levels of coercive, mimetic, and normative pressure would imply higher levels of diversification and vice versa. As observed before, this also

emanates from the positive effect of institutional pressure on the choice of investment in waste recycling venture.

Table 4 Effects of Institutional Pressure on the Level of Diversification within Recycling Investment Portfolio

Variables	Ordered logit
	Level of diversification
Coercive Pressure	0.805*** (0.095)
Mimetic Pressure	1.099*** (0.175)
Normative Pressure	0.542*** (0.113)
Observations	400
R-squared/Pseudo R-squared	0.123
*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$ Standard errors in parentheses	

Source: Authors' computation (2024)

These results are in line with previous studies, although on different contexts. With regard to the effect of coercive pressure on diversification levels within the recycling investment portfolio, previous studies support the influential role of coercive pressures, particularly government rules and regulations, in driving the adoption of sustainable practices within firms. Studies such as (Masocha & Fatoki, 2018) highlight how stringent government regulations compel firms to adopt sustainable practices. Similarly, research by (Yue et al., 2023) demonstrates how coercive pressures promote cross-functional alignment towards green strategies, which are likened to diversification efforts towards environmentally friendly practices.

The interesting aspect is in the contrast between firm owners perceiving strict recycling laws while also noting a wide variety of investments in recycling. Discrepancies in the enforcement and application of regulations across different regions and industries can account for this apparent inconsistency. Even if laws are considered strict, their enforcement may not always be uniform. Firms are required to comply with these regulations despite potential enforcement issues. For that matter they are able to opt for diversification strategies within their recycling investment portfolio. Basically, the complex interaction among regulations, varying enforcement levels, and firms' strategic responses highlights the dynamics influencing diversification in recycling investments.

Mimetic pressures also play a significant role in shaping diversification strategies within firms. Existing literature, including studies by (Moreau, 2021) and (Özbek et al., 2024), illustrates how mimetic pressures drive organisations to adopt diversification strategies by imitating behaviours observed in other organisations within their industry.

6. Conclusion

In conclusion, the findings of this study provide valuable insights into the effect of institutional pressures on investment decisions in the field of recycling. It can be concluded that coercive pressure, represented by legal and regulatory pressures, has a positive influence on the choice of investment across various waste recycling categories such as papers, glasses, and e-waste.

On the other hand, the study concludes that mimetic pressure, which refers to the tendency to imitate others' actions, does exert a substantial effect on the choice of investment in recycling of plastics, papers, glasses and e-waste. This implies that firms are strongly influenced by the actions or behaviours of their industry peers when making the choice of investing in waste recycling venture. Regarding normative pressure, we conclude that its significance is limited to the domain of metals. This indicates that social norms may have an impact on decision-making specifically in the recycling of metals possibly due to the presence of industry-specific social expectations or standards.

With regard to recycling investment share, we conclude that only coercive pressure has a positive influence in the firms' portfolio proportion. Both mimetic and normative pressures do not influence how firms apportion their recycling investment portion in the portfolio. We further conclude that mimetic, normative and coercive pressure positively influence the level of diversification within recycling investment portfolio.

In summary, these findings contribute to our understanding of how institutional pressures influence investment decisions among SSR firms. The study highlights the positive effects of coercive and mimetic pressure, and the limited influence of normative pressure in the choice of specific waste recycling types. Moreover, there is no uniform effect of coercive and mimetic pressures across all firms or sectors. The effect varies with investment choices. Additionally, it reveals the positive influence of coercive pressure on recycling investment share in the portfolio and the strong positive influence of mimetic, normative and coercive pressure on the level of diversification within recycling investment portfolio. All withstanding however, more research is required to gain more insights on why normative pressure influence more investment decisions in metals comparing to other waste categories namely, plastics, glasses, papers, and e-wastes

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