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# Promotion of Organizational Learning from the Education Committees of Transport Cooperatives

By Andrea Ximena Casadiego Gómez, Genny Torcoroma Navarro Claro & Cindy Paola Pineda López

*Francisco de Paula Santander Ocaña University*

*Abstract-* The initial purpose of the study is to answer the question: What type and styles of learning are promoted in the cooperative transport sector from the work of the education committees? Therefore, from the theoretical foundations, the project achieved compliance with the general objective, focused on knowing the types, styles and characteristics of the organizational learning promoted by the transport cooperatives through the management of the education committee, therefore, a quantitative methodology was applied, applying the instrument to Directors of the four active education committees in transport cooperatives in the municipality of Ocaña. Finally, it is obtained with the results that the most predominant organizational learning is corrective and adaptive, and is represented in the solidarity institutions.

*Keywords: organizational learning, intellectual capital, cooperative, education committees.*

*GJMBR-A Classification: JEL Code: M10, I29*

PROMOTIONOFORGANIZATIONALLEARNINGFROMTHEEDUCATIONCOMMITTEESOFTRANSPORTCOOPERATIVES

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# Promotion of Organizational Learning from the Education Committees of Transport Cooperatives

Andrea Ximena Casadiego Gómez [α], Genny Torcoroma Navarro Claro [σ] & Cindy Paola Pineda López [ρ]

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## I. Introduction

The objective of the solidarity entities is to promote the formation of human capital, above all, to achieve the appropriation of the solidarity aims and values, therefore, without the recognition of the characteristics of organizational learning, cataloged as the capacity that organizations have to generate new knowledge from the creation, organization and processing of information, thereby configuring a culture that generates new capabilities, products and services aimed at improving processes (Angulo 2017, 259-301).

Now, well Zietsma, Winn, Branzei and Vertinsky (2002), (cited in Castañeda and Fernández 2007, 245-254), consider that it is a process in which knowledge is contracted and transferred through three levels: Individual, group and organizational, from there, that the foregoing is a guarantor for knowledge management, understood as the entire set of activities carried out in order to use, share and develop the knowledge of an organization and the individuals who work in it, directing them to the best achievement of their objectives (Bustelo and Amarilla2001, 226-230).

*Author α σ: Francisco de Paula Santander Ocaña University.*
*e-mails: axcasadiegog@ufpso.edu.co, gtnavarroc@ufpso.edu.co*
*orcid.org/0000-0002-8597-3105, orcid.org/0000-0003-3225-9028*
*Author ρ: Corporación de Gestión Empresarial, Investigativa y de proyectos. e-mail: cipapilo.04@gmail.com https://orcid.org/0000-0002-6149-7925*

Organizational learning, nowadays, is considered as a catalyst of competitive scenarios, where it is declared that it is associated both with the change of organizational behavior and the creation of a knowledge base that supports it, of course, it requires ensuring a culture that lead knowledge management under the reference of intellectual capital, as it is understood as the combination of intangible or intangible assets, including staff knowledge, the ability to learn and adapt (Sánchez, MeliánandHormiga 2007, 97-11).

However, and from the need to recognize the organizational learning process, it is necessary to explore and reveal what commitments are established to promote development and correct communication and education about the culture of solidarity existing in them, likewise, support with deductive arguments, for this, This article presents a diagnosis of the current conditions in the promotion of organizational learning of education committees according to the training protocols, also identifies the types, approaches and styles of organizational learning in the education committees of the transport cooperatives.

## II. Theoretical Framework

Next, a list of the theories relevant to the development and fulfillment of objectives is presented.

*a) Theory of knowledge creation Nonaka and Takeuchi*

This model emphasizes that creating knowledge does not consist in having information, but in processing, internalizing it and transforming it into ideas, sharing them taking into account the space in order to carry out effective feedback with all members of the organization. Meanwhile, for Nonaka and Takeuchi (1999), cited in Avendaño and Flores (2016), such knowledge management covers aspects related to the following processes: creation or acquisition, structuring, transformation and transfer of knowledge, until its storage and incorporation into all processes of the organization.

*b) Types and styles of organizational learning*

Organizations must inspire people to verify an aptitude capable of understanding reality and improving shared mental models, for the fulfillment of objectives,



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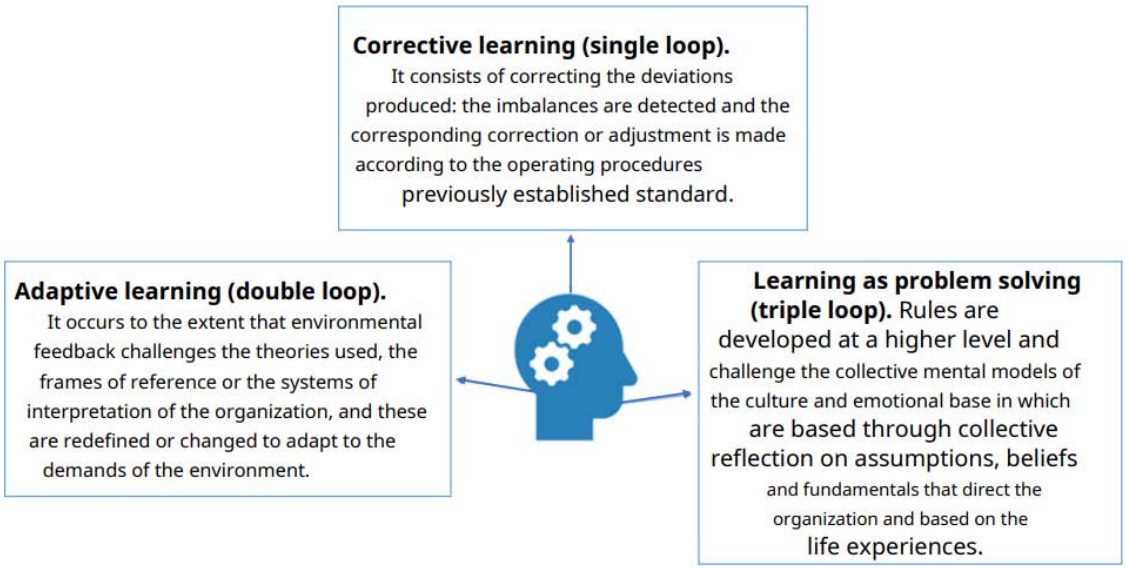
for this, a complete recall of the processes and the way of acquiring and transmitting knowledge is required For this reason, organizational learning is conceived as a process of continuous interaction and discussion, which today generates the following typologies:




*Source: own elaboration adapted from (Alcover and Gil, 2002).*

*Figure 1:* Types of organizational learning

On the other hand, Guns (1998) presents the following types of learning according to the content and conditions of the process:

*Table 1:* Types of organizational learning

| Types of learning |
|---|
| Learning tasks:<br>Concerns how to perform and improve the performance of specific tasks |
| Cultural learning:<br>It centers around the values, beliefs and attitudes that provide the foundation for productive work |
| Team learning:<br>It has to do with how a team works effectively, fostering its learning, growth and maturity |
| Business learning:<br>It concerns the basic business aspects and how to manage teams as micro-businesses. |
| Transformation learning:<br>Focuses on how to achieve significant organizational change |
| Systematic learning:<br>It has to do with the understanding of the systems, the basic processes of the organization, their way of realization and improvement. |
| Reflective learning:<br>It has to do with the questioning and analysis of organizational hypotheses, models and paradigms |
| Strategic learning:<br>It is centered around the basic learning and business strategy of the company |
| Leadership learning:<br>It focuses on how to guide and control individuals, groups, teams, and larger organizational units |

*Source: Taken from (Pirela de Faría and Sánchez de Gallardo, 2021).*

*Note: The table presents information on the types of learning that tend to take place in organizations.*



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c) *Theoretical model of organizational learning of Garzón and Fischer*

This model is aimed at determining how the sources, subjects, culture and conditions for learning are decisive in organizational results, where the ability of the AO, according to the results of the parallel, indicate that the faculty between organizations to learn is directly influenced by sources, conditions and culture, taking individuals, teams and organizations as subjects (Avendaño and Flores 2016, 201-227).

## III. Methodology

The research has a descriptive exploratory quantitative approach, which, according to what is stated by (Hernández, Fernández and Baptista, 2014)It occurs when the research topic is of little study or novel, likewise, information is collected in a single moment and it is possible to describe characteristics of a population, as is the case of the present proposal, where it is intended to determine the management of learning organization by the education committees of the transport cooperatives of Ocaña, Norte de Santander, identifying their typology and characteristics.

The population under study was made up of the four (04) education committees belonging to the transport cooperatives of the municipality of Ocaña, Norte de Santander (Cámara de comercio Ocaña 2020). Of which, the instrument was applied to twelve (12) Directors, that is, two from each education committee, in order to specify the organizational learning culture.

For the construction of results, the following matrix is presented that allowed orienting and fulfilling the objectives:

*Table 2:* Variables operationalization

| Categories: | Variables | Questions |
|---|---|---|
| Types of learning | Corrective Learning (single loop) | When there are problems with the processes that the cooperative executes, the imbalances are detected and the corresponding correction or adjustment is made based on the operating procedures. |
| | Adaptive Learning (double loop) | The cooperative's processes are constantly changing, in order to adapt to the changes demanded by users and the new trends demanded by the environment. |
| | Learning as Problem Solving (Triple Loop) | When problems arise with the activities carried out by the cooperative, they are approached from past situations and experiences to find their resolution. |
| Characteristics of learning by approaches | Strategy-focused learning | Strategies are formulated analyzing the environment of the entity looking for external information according to rational data, deductive logic or numerical calculation. |
| | Inquiry-focused learning | An investigation directed to problems is developed, with limited risks, continuous experimentation, essential information and solutions with little prior reflection. |
| | Learning focused on the standardization and control of information | Information is standardized by controlling routines, imposing constraints of action and thought. |
| | Learning focused on competitive leadership | Develop systematic thinking and help managers discover core competence or critical resource that creates competitive advantage. |
| | Learning focused on the interrelation of information | There is an interactive exchange of information and evaluation of transactions that allow us to see motives and rivals of the firm looking for some area of opportunity and freedom. |
| | Planning-focused learning | Strategic planning (policies, norms and values) is externalized, fostering directional thinking that creates coherence and facilitates work processes. |
| Learning styles | Of experimentation | The committee seeks to promote the creation of strategies that innovate the processes and the provision of the service offered by the |



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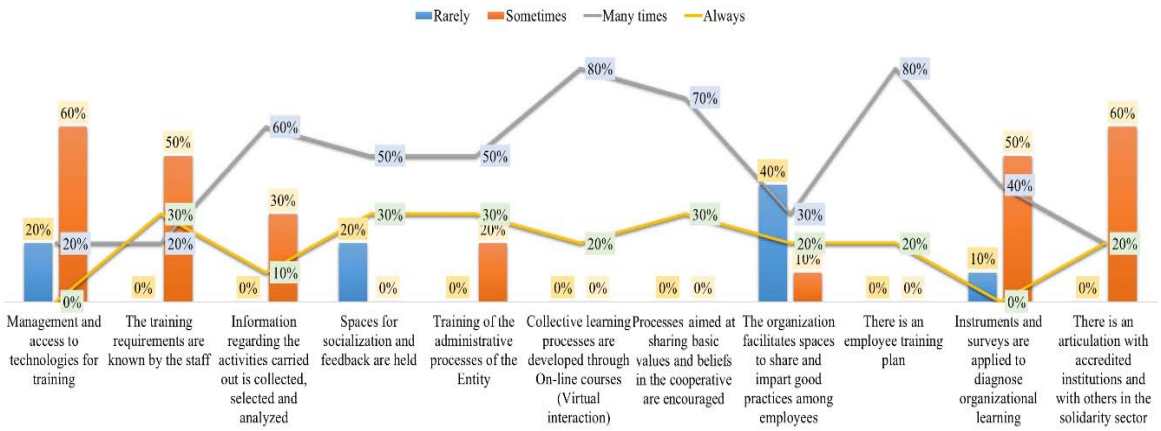
| | | |
|---|---|---|
| | | cooperative. |
| | Acquisition of skills | The cooperative's learning processes are subject to investment in training activities seeking to develop the skills of the collaborators and the entity. |
| | Benchmarking | The models for acquiring skills and learning are based on the knowledge developed by other companies. |
| | Continuous improvement | The committee emphasizes managing learning from experience with certain types of problems. |

*Source: self made.*

*Note: the table presents information regarding the operationalization of variables worked on in the research.*

## IV. Results

Organizational learning is considered one of the most important elements at the business level to obtain competitiveness and productivity, so its promotion from the education committees of the Ocaña transport cooperatives according to the education protocols becomes a fundamental axis for their strengthening in said solidarity sector organizations, in this framework of ideas, below, information is displayed regarding the current conditions of learning and the types, characteristics and styles that have been adopted by transport cooperatives in the actuality.




*Source: self made.*

*Figure 2:* Organizational learning conditions in the education committees of the Ocaña transport cooperatives

At the business level, for there to be organizational learning that contributes to productive development and the generation of competitive advantage, it requires strengthening the intellectual capacity of human resources, since the competitive performance of companies has been directly related to organizational culture, leadership and decision making, therefore, by integrating human capacities and learning threads, superior performance is generated (Garzón and Fisher 2008).

Faced with the generation of spaces for dialogue to promote learning, founding spaces for dialogue in which dialogue is held and ideas are exchanged is essential to maintain a suitable organizational culture and climate. Finally, 60% of the education committees of the cooperatives consider that the analysis and evaluation of processes and activities is essential to examine and detect existing problems, with which it is deduced that carrying out a timely evaluation of business management allows the execution of a comprehensive analysis of the organization.



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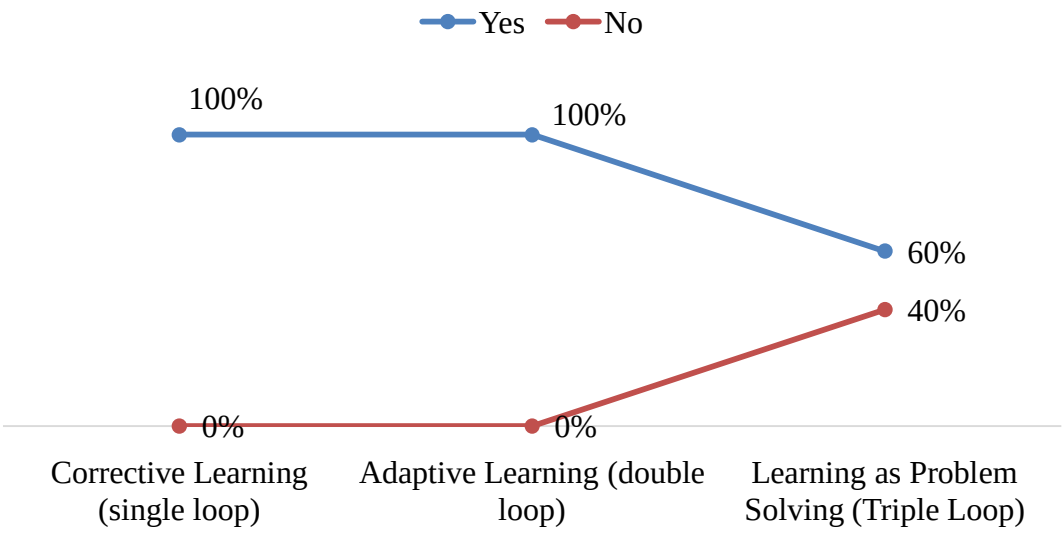


*Source: self made.*

*Figure 3:* Types of organizational learning in the education committees of the transport cooperatives of Ocaña

Based on the information, it is observed that in the education committees of the transport cooperatives of Ocaña, through corrective learning (100%) they manage to obtain growth and institutional development, so that permanently working on their strengthening, that is, making corrections or adjustments to operating procedures, despite the inconveniences that may arise, has allowed them to improve their work methods, also, to adapt to the demands of the environment (adaptive learning) and use learning to provide solutions to problems. problems that usually arise with the activities carried out by the cooperative have been very useful to them.

*Table 3:* Approaches to organizational learning in the education committees of the Ocaña cooperatives

| Learning approach | Characteristics | Yes | No |
|---|---|---|---|
| Strategy-focused learning | Strategies are formulated analyzing the environment of the entity looking for external information according to rational data, deductive logic or numerical calculation. | 90% | 10% |
| Inquiry-focused learning | Research directed to problems is developed, with limited risks, continuous experimentation, essential information and solutions with little prior reflection. | 70% | 30% |
| Learning focused on the standardization and control of information | The information process is standardized by controlling routines, imposing constraints of action and thought. | 80% | twenty% |
| Learning focused on competitive leadership | Develop systematic thinking and help managers discover core competence or critical resource that creates competitive advantage. | 100% | 0% |
| Learning focused on the interrelation of information | There is an interactive exchange of information and evaluation of transactions that allow us to see motives and rivals of the firm looking for some area of opportunity and freedom. | 80% | twenty% |
| Planning-focused learning | Strategic planning (policies, norms and values) is externalized, fostering directional thinking that creates coherence and facilitates work processes. | 100% | 0% |

*Source: Own elaboration, based on information obtained with the application of a survey to the directors of the education committees of the transport cooperatives of Ocaña.*

*Note: the table presents information on organizational learning approaches in the education committees of the Ocaña transport cooperatives.*



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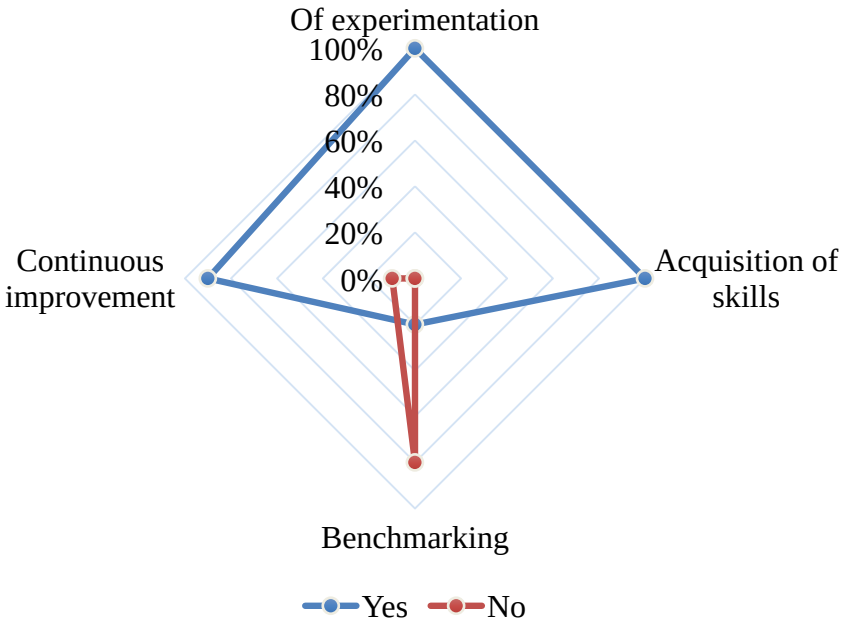
Given that organizational learning is the central axis of every company and one of the tools that helps to improve productivity and competitiveness, recognizing the approaches for the execution of processes and activities is crucial, first of all, because they are assumed risks and secondly, because it leads to the establishment of plans according to the needs and requirements. For the directors of the education committees of the transport cooperatives of Ocaña, learning focused on planning (100%) is the most convenient for externalizing strategic planning, since it offers the possibility of exposing members to policies, norms and values, strengthening the culture and fostering directional thinking.

From this perspective, it is required that learning in cooperatives be seen from different perspectives, taking into account that adaptive behaviors tend to occur on occasions and that other opportunities acquired, so maintaining systematic thinking leads to the creation of competitive advantage. That is, learning focused on competitive leadership (100%).




*Source: self made.*

*Figure 4:* Organizational learning styles present in the education committees of the Ocaña transport cooperatives

Acquiring knowledge through the exploration of the environment in addition to being shared with the members of the company, forges both individual and collective learning, in this sense, giving it a meaningful interpretation helps to better transmit knowledge, in correlation to the data obtained. Faced with the learning style in the education committees of the Ocaña transport cooperatives, it is reflected that in the committees learning is based on experimentation (100%), as they seek the promotion and creation of strategies to innovate processes and improve service delivery. service, but also based on the acquisition of skills.

## V. Discussions

Organizational learning (AO) is an aspect that has been gaining momentum over time, since from this, companies manage to obtain skills to create, transfer knowledge and above all modify their behavior as the market advances, thus becoming a dynamic process when exploring and exploiting information indistinctly at the levels (individual, group and organizational) and working together in favor of business development (Vega, Martinez and Montoya2019), passing the creation of knowledge to be a key element for the generation of productivity and competitiveness which requires processes such as: the creation or acquisition, structuring, transformation and transfer of knowledge, as established by Nonaka and Takeuchi in their theory of knowledge creation.

For the education committees of the Ocaña transport cooperatives, organizational learning is then the means through which they can promote competitiveness based on the ideals, principles and actions that the cooperative possesses in order to face non-existent situations. planned without much difficulty, because in order to adapt to the changes demanded by users and the demands of the environment, they always focus on maintaining adaptive and corrective learning, focused on planning and competitive leadership.

In this framework of ideas, (Garzón and Fisher 2008) from its theoretical model of organizational learning determine that organizational learning at the



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business level has all been influenced by sources, conditions and culture, hence, the fact that managers recognize the learning that best suits the company, the style and its approach will allow them establish strategic actions more focused on reality.

## VI. Conclusions

The present study focused on determine the management of organizational learning by the education committees of the transport cooperatives of Ocaña, with which it is recognized that the current conditions in the promotion of organizational learning (AO) in cooperatives have been subject to the use of technological tools, carrying out training and articulation processes with institutions of the solidarity sector.

Likewise, it is identified that due to the fact that the processes in cooperatives are in constant change, due to the demands of the users and the new trends demanded in the environment, learning is adaptive, and as a result of the inconveniences that are usually presented to Daily corrections or adjustments are made based on operating procedures, so learning is also usually corrective, aimed at solving problems, an issue that has led to learning focused on competitive leadership and planning.

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# A Study on Machine Learning Prediction Model for Company Bankruptcy using Features in Time Series Financial Data

By Akira Otsuki, Shohei Narumi & Masayoshi Kawamura
*Nihon University*

*Abstract-* Based on such methods as a discriminant analysis and logistic regression, corporate bankruptcy prediction models have been developed as a means to determine the soundness of a company's operational status based on its financial statements. However, such analytical methods work with binary variables, and thus, as the only outcome of machine learning, the company in question is considered either likely or unlikely to go bankrupt. However, this is insufficient for business operators who would need to know the possible risk factors of a bankruptcy, allowing them to plan and implement measures to avoid any misfortunes. We have therefore developed a prediction model that not only predicts but also identifies the financial variables that can possibly drive the company to bankruptcy.

*Keywords: machine learning; corporate bankruptcy prediction; time-series financial statement data analysis.*

*GJMBR-A Classification: JEL Code: G33*

ASTUDYONMACHINELEARNINGPREDICTIONMODELFORCOMPANYBANKRUPTCYUSINGFEATURESINTIMESERIESFINANCIALDATA

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# A Study on Machine Learning Prediction Model for Company Bankruptcy using Features in Time Series Financial Data

Akira Otsuki[α], Shohei Narumi[σ] & Masayoshi Kawamura[ρ]

*Abstract-* **Based on such methods as a discriminant analysis and logistic regression, corporate bankruptcy prediction models have been developed as a means to determine the soundness of a company's operational status based on its financial statements. However, such analytical methods work with binary variables, and thus, as the only outcome of machine learning, the company in question is considered either likely or unlikely to go bankrupt. However, this is insufficient for business operators who would need to know the possible risk factors of a bankruptcy, allowing them to plan and implement measures to avoid any misfortunes. We have therefore developed a prediction model that not only predicts but also identifies the financial variables that can possibly drive the company to bankruptcy.**

*Keywords: machine learning; corporate bankruptcy prediction; time-series financial statement data analysis.*

## I. Introduction

It is extremely important for a company and its stakeholders to have a clear understanding of the operational standing of the company. According to Tasaka [1], to identify corporate credibility based on an analysis of financial statements, studies on "credit analysis" began in the second half of the 19th century, and the Great Depression in the 1930s prompted in-depth research into the prediction of bankruptcies in the United States. As stated in Section 2, many bankruptcy prediction models have been proposed in recent years using methods such as a discriminant analysis and logistic regression. However, these analytical methods only return binary outcomes; in most cases, they run machine learning on financial data and predict whether the company in question will or will not go bankrupt. A few existing studies have discussed factors that explain the possible causes of bankruptcy in the given cases. Nevertheless, they either carried out the explanatory consideration manually or employed a different method for the explanatory analysis, falling short of developing a comprehensive (automated) process model. However, from the viewpoint of business operators, knowing those factors that may lead to a bankruptcy is crucial for the preparation of countermeasures. Given this background, we developed a model that facilitates not only a prediction but also the identification of financial variables that may drive the company to bankruptcy.

To evaluate the model, from databases such as kabupro.jp (an online database on listed businesses in Japan), we obtained financial data on financially sound companies and those that went bankrupt. For the operating companies, we referred to the business classification table issued by the Japan Exchange Group, and for each of the 10 primary business categories listed, 10 business entities were randomly selected as the samples. As a result, we verified that the model succeeds in organizing bankrupt companies based on their bankruptcy factors. Furthermore, the model demonstrated its ability to cluster a mixture of sound and bankrupt companies based on their financial patterns, and based on the analyses of financial variables in these clusters, predict specific financial variables that may be exacerbated and lead to bankruptcy.

## II. Existing and Relevant Studies

Considering Japanese companies, this study deals with a bankruptcy prediction model, and this section presents an overview of existing studies on prediction models targeting businesses within the Japanese context. The new aspect introduced in this study will be described with reference to such studies.

Table 2 lists some of the previous Japanese studies on corporate bankruptcy prediction models. Konoet al. [2] plotted the mean values of their data organized by fiscal year and compared their sample data (of bankrupt companies) with the mean values taken from five listed companies to propose a bankruptcy prediction model.

Okubo [3] proposed a model that evaluates the business management status based on eight patterns of combinations of positive (+) and negative (–) values for the chosen variables, as shown in Table 1; for example, if the operating cash flow yields a positive value and the investing and financing cash flows yield a negative value, the company in question is in a sound state of business management and will unlikely to go into bankruptcy.

*Author α: Nihon University, College of Economics, Japan.*
*e-mail: otsuki.akira@nihon-u.ac.jp*
*Author σ: NTT Data System Technologies.*
*Author ρ: MK Future Software.*



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*Table 1:* Company performance assessment criteria (source: [3])

| | ① | ② | ③ | ④ | ⑤ | ⑥ | ⑦ | ⑧ |
|---|---|---|---|---|---|---|---|---|
| Operating CF | + | + | + | + | — | — | — | — |
| Investing CF | + | — | + | — | + | — | + | — |
| Financing CF | + | — | — | + | + | + | — | — |

Ishikawa et al. [4], Mizoguchi et al. [5], and Jiang [6] employed a discriminant analysis and proposed predictive models for binary bankruptcy/non-bankruptcy outcomes based on machine learning using their respective datasets described in the "Data used" column of Table 2.

In addition, Jidaisho et al. [7] used logistic regression to analyze their data, also shown in Table 2, for machine learning and proposed a prediction model for a binary bankruptcy/non-bankruptcy assessment.

Masuyama[8] also analyzed the financial statements of bankrupt companies by chronologically organizing their data, as described in Table 2. They also drew on surveys administered by the Small Business Institute Japan and management improvement plans of individual companies to compare the actions taken to avoid bankruptcy, based on which they attempted to conduct a bankruptcy prediction.

Finally, Saigo et al. [9] developed a model to evaluate companies by applying the discounted cash flow (DCF) formula to the free cash flow. DCF is a valuation method used to estimate the corporate value at certain discount rates based on the future cash flow expected from a business. Saigo et al. specifically addressed SMEs and micro-businesses and discussed measures to improve their corporate value based on the DCF. For example, they described "cutting unnecessary investments" and "optimizing the equity structure" as financial optimization measures to attain the lowest discount rate, which is one of the components of DCF, and "enhancing the business efficiency" and "investing in profitable businesses (business portfolio optimization)" to maximize the corporate value.

Most of the studies above applied machine learning to their respective financial data and attempted to attain binary outcomes between bankruptcy and non-bankruptcy prediction results. Whereas Masuyama and Jiang both went further and considered those factors responsible for bankruptcy, Masuyama only discussed the factors drawing on some case studies, and the latter employed another method to analyze the detrimental factors after using the discriminant analysis for the binary prediction. They fall short of integrating a series of analyses into a single automated process. Therefore, we developed a model that facilitates not only the prediction but also the identification of financial variables that may contribute to the bankruptcy of a company.

*Table 2:* Examples of existing studies on bankruptcy prediction models concerning Japanese companies

| Study title | Prediction model | |
|---|---|---|
| | Analytical method | Data used |
| Yosuke Kono et al.: Discussion on the Possibility of Predicting Corporate Bankruptcy [2] | Plotted the mean values of the data organized by fiscal years and compared between the sample data (of bankrupt companies) and the data taken from five listed companies | 1. Current ratio<br>2. Equity ratio<br>3. Quick ratio<br>4. Monthly sales to current capital ratio<br>5. Fixed assets to fixed liability ratio<br>6. Fixed ratio<br>7. Interest bearing debt to monthly sales ratio<br>8. Return on assets<br>9. Equity ratio |
| Ayaka Okubo: Study on Black-in Bankruptcy Mechanism through Financial Statements Focused on Cash Flow Statement [3] | Developed 8 patterns of corporate financial states according to the combinations of positive and negative values each for operating, investing, and financing cash flows. | 1. Operating cash flow<br>2. Investing cash flow<br>3. Financing cash flow |
| Masaru Ishikawa & Ngai Chung Sze: A Study of Corporate Bankruptcies Based on the Cash Flow Information [4] | Discriminant analysis | 1. Operating cash flow<br>2. Investing cash flow<br>3. Financing cash flow<br>4. Operating cash flow margin: Operating CF/Sales revenue<br>5. Corporate CF to sales ratio: (Operating CF + Investing CF)/Sales revenue<br>6. Total assets to operating CF ratio: |



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| | | |
|---|---|---|
| | | Operating CF/Total assets<br>7. Operating CF to current liability ratio: Operating CF/Current liabilities<br>8. Operating CF to long-term debt ratio: Operating CF/Long-term debts<br>9. Interest-bearing debt to operating CF ratio: Operating CF/Interest-bearing debts<br>10. Free cash flow ratio: FCF/Operating CF<br>11. Profit ratio: Net profit/(Net profit + Depreciation)<br>12. Capital investment ratio: Capital investments/Operating CF<br>13. Operating CF to investing CF ratio: Investing CF/Operating CF<br>14. Cash conversion ratio: Operating CF/Net profit<br>15. Interest coverage ratio: (Operating CF + interest expense amortized + tax)/Interest expense amortized<br>16. Free cash flow (FCF): Operating CF + Investing CF<br>17. Total assets to FCF ratio: FCF/Total assets<br>18. Total liability to financing CF ratio: Financing CF/Total liabilities<br>19. Balance on total liabilities: Balance/Total liabilities |
| Ryuji Mizoguchi & Shunsuke Nakajima: Discriminant Analysis of Companies and Bankruptcy Probability Estimation [5] | Discriminant analysis | 1. (Current assets - Current liabilities)/Total assets<br>2. (Net profit - Dividend - Compensation of board members)/Total assets<br>3. Income before tax/Total assets<br>4. Equity/Total liabilities<br>5. Sales revenue/Total assets |
| Jiang Feihong: Financial Forecast and Cash Flow Information [6] | Discriminant analysis | 1. Operating CF/Sales revenue<br>2. Operating CF/Total liabilities<br>3. Operating CF/Net profit<br>4. Operating CF/Issued shares<br>5. Operating CF/Investing CF<br>6. Operating CF/Financing CF |
| Koji Jidaisho, Hamido Fujita, Masaki Kurematsu& Jun Hakura: Experiment of Risk Prediction on Japanese Companies Using a Bankruptcy Risk Prediction Model [7] | Logistic regression | 1. Current ratio<br>2. Quick ratio<br>3. Equity ratio, etc. |
| Yuichi Masuyama: The Conditions for Corporate Growth in the Context of Corporate Bankruptcy Analysis [8] | Compared the risk management actions between companies that went bankrupt and those that avoided bankruptcy, based on the analysis of the financial statements of bankrupt companies and a survey administered by the Small Business Institute Japan. | 1. Total assets turnover (Sales revenue/Total assets)<br>2. Inventory turnover (Sales revenue/Inventory) |
| Yasuhiro Saigo&Kazutoyo Nakano: A Basic Study on the Cash Flow Accounting Information and Valuation [9] | Corporate valuation analysis model, shown on the right | (CF1/1+r) + (F2/(1+r)2) + (CF3/(1+r)3) +… $\sum_{t=1}^{\infty} \frac{CF_t}{(1+r)_t}$ r: discount rate CFt: cash flow generated in the year *t* |



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## III. Proposed Concept

*a) Definition of bankrupt company and analyzed data*

This study uses the definition of a bankrupt company provided by the Teikoku Databank [10]. We researched bankrupt companies on the Delisting website [11] and obtained the financial statement data of these companies from either kabupro.jp [12] or COSMOS1 [13] (a corporate financial database administered by Teikoku Databank). Regarding the financial statement data of non-bankrupt companies, we referred to the business classification table issued by the Japan Exchange Group and randomly selected 10 companies for each of the 10 primary business categories defined therein. A total of 84 FS data of bankrupt company datasets and 100 FS data of non-bankrupt company datasets were obtained.

Each dataset consists of financial statements of the previous 5 consecutive years, counting from the year of bankruptcy for the 84 bankrupt companies, and from fiscal 2020 for the 100 non-bankrupt companies. Note that, whereas the bankrupt companies were selected to ensure that their corporate sizes and types of trade were unbiased, the same could not be ascertained for non-bankrupt companies because they were randomly selected according to the primary business categories; thus, bias control will be recommended for future evaluative experiments with additional datasets.

*b) Indexes for bankruptcy prediction*

We drew on the data used in the existing studies shown in Table 2, that is, the data in the "Data used" column, based upon which we identified bankruptcy prediction indexes (explanatory variables) for employment in our proposed model. Table 3 lists these indexes, together with the rationale for the choice.

*Table 3:* List of bankruptcy prediction indexes (explanatory variables) for the prediction model used in this study and selection rationale

| Explanatory variable | Selection rationale |
|---|---|
| Current ratio | This expresses a company's liquid assets against its liabilities due within the current year-period, and was chosen because the ratio is considered to decrease as the company nears its bankruptcy. It may be noted that a quick ratio was not selected because the scope of current assets was too narrow. |
| Operating cash flow | This was chosen because it is considered that, in the case of bankruptcy owing to a poor operational performance, the operating cash flow from the main business diminishes. |
| Investing cash flow | This was chosen because the investing cash flow is likely to increase when a company struggles to settle its liabilities, which is attributed to sales of assets such as facilities and company vehicles. |
| Operating cash flow/current liabilities | This indicates a company's ability to settle the liabilities due within the current year from the cash derived from its business activities. This is chosen because the ratio is considered to decrease when the company's performance declines. |
| Inventory turnover (sales revenue/inventory) | A poor performance will lead to a decline in sales revenue, resulting in an increase in inventory (in this case, dead inventory), hence the choice. |
| Operating cash flow/sales revenue | This was chosen because it is possible that bankruptcy may result from a company being excessively short of cash to fulfill its obligations owing to too many illiquid assets such as collectibles despite realizing a large sales revenue. |
| Return on equity (net profit/equity) | Did a bankrupt company practice efficient business management? Was its operating efficiency decreasing over the years prior to the bankruptcy? Knowing the answers to these questions is considered important in formulating preventive measures. |
| Equity/total liabilities | A company likely to go bankrupt undoubtedly has its equity minimized (and in some cases, its liabilities increased), resulting in a decrease in this ratio, and hence the bankruptcy decision. As another reason, it indicates the company's reserve of capital without obligations after offsetting the liabilities. |

*c) Extraction of features from time-series financial data*

We will now describe the model used for extracting the features of each of the aforementioned explanatory variables, observed during a 5-year period. Dealing with time-series data, it is common practice to use the logarithm rate of change (logarithmic return) [14, 15]. However, this cannot be obtained if a negative value is involved when obtaining a natural logarithm. For this reason, we decided to calculate, instead of the logarithm, the rate of change of the financial indexes over a 5-year period, as shown below: In Formula 1, $(Y_t)$ expresses the change rate between the fiscal year t and the preceding year–t1, and $X$ is each of the eight variable specified as evaluation indexes in the previous section.

$$Y_t = \frac{(X_t - X_{t-1})}{X_{t-1}} \quad (1)$$

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We will now discuss a method used to extract the feature values from the trend during the 5-year period ($Y_t$, $Y_{t-1}$, …, $Y_{t-4}$). The following five patterns (① through ⑤) were considered using the current asset data included in Table 3, the results of which are shown in Table 4.

① Arithmetic mean of the negative value change rate: This takes as a feature value the mean value of the change rate over the 5-year period (year-equivalent mean value), as in "($Y_{t-4}$ + $Y_{t-3}$ + $Y_{t-2}$ + $Y_{t-1}$ +$Y_t$)/5."

② Absolute minimum of negative value change rate: This takes as a feature value the absolute minimum of the negative change rates over the 5-year period, as in "min(|$Y_t$|, |$Y_{t-1}$|, … , |$Y_{t-4}$|)."

③ Absolute maximum of negative value change rate: This takes as a feature value the absolute maximum of the negative change rates over the 5-year period, as in "max(|$Y_t$|, |$Y_{t-1}$|, … , |$Y_{t-4}$|)."

④ Sum of negative value change rate: This takes as a feature value the sum of the negative change rates over the 5-year period, as in "sum($Y_t$, $Y_{t-1}$, … , $Y_{t-4}$)."

⑤ Year-equivalent change rate between 4 years before and the final year: This takes as a feature value the change rate in years equivalent to between the first and last years of the 5-year period, as in "( ($Y_t$ - $Y_{t-4}$)/$Y_{t-4}$)/4."

The procedure is as follows: Table 4 represents one company that had articulated differences in the rates of change. Here, "③ Absolute maximum of negative value change rates" had the largest negative value in the reduction of current assets, and was thus selected as the feature value {*FV(Feature Value)*}. The formula is expressed as follows, where $Y_t$ is obtained, as shown in (1).

$$FV = -max\,(|Yt|,\ |Yt\text{-}1|,\ \dots,\ |Yt\text{-}4|)\ ,\ \{Yt,\ Yt\text{-}1,\ \dots,\ Yt\text{-}4\} < 0 \quad (2)$$

Here, *FV* was obtained for each of the eight bankruptcy prediction indices (explanatory variables), which will serve as the input data for clustering in the next section.

*Table 4:* Comparison of methods used to extract feature values from the 5-year trend ($Y_t$, $Y_{t-1}$, … ,$Y_{t-4}$) (unit: 1,000 yen)

| | | Current assets | | | | |
|---|---|---|---|---|---|---|
| | | Final year | 1 year before | 2 years before | 3 years before | 4 years before |
| Y on Y change rate | | 4,977,284 | 3,921,740 | 6,208,416 | 40,249,410 | 981,290 |
| ① | 9.77 | 0.27 | -0.37 | -0.85 | 40.02 | |
| ② | −0.37 | | | | | |
| ③ | −0.85 | | | | | |
| ④ | 39.07 | | | | | |
| ⑤ | −0.25 | | | | | |

*Note: Key to the numbers in a circle:*

① Change rate: Arithmetic mean; ② Absolute minimum of negative change rate; ③ Absolute maximum of negative change rate; ④ Sum of negative change rate; ⑤ Year-equivalent change rate between 4 years before and the final year.

*d) Clustering (Machine learning) model*

We take the FVs obtained for the eight previously described bankruptcy prediction indexes and create matrix data, as illustrated in Table 5, which will be fed into the machine learning (clustering). Note that the rows are equal to the number of sample datasets, and the names of sampled companies (both bankrupt and non-bankrupt) will appear in the first column.

*Table 5:* Clustering model

| Company | Explanatory variable | | | |
|---|---|---|---|---|
| | Current ratio | Operatingcash flow | ・・・ | Equity/Total liabilities |
| A | *FV* | *FV* | *FV* | *FV* |
| B | *FV* | *FV* | *FV* | *FV* |
| … | *FV* | *FV* | *FV* | *FV* |
| *n* | *FV* | *FV* | *FV* | *FV* |

The data in Table 5 are the distance matrix and not the adjacency matrix. The adjacency matrix cannot be used for clustering because distance data are generated between samples (companies). For this reason, we selected a clustering method based on the distance matrix, as advanced by Otsuki [16]. According to this method, the Euclidean distance is obtained based on the principal component scores calculated until the cumulative contribution ratio surpasses 90%, forming a matrix of principal component scores. A silhouette analysis, as shown in (3), is then run on this principal component score matrix, and the number of clusters K is taken at the highest silhouette value at which clustering takes place.



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$$S_i = \frac{b_i - a_i}{max(a_i,\ b_i)} \quad (3)$$

In (3), $a_i$ is the mean distance between point (node) i and other points in the same cluster, which represents the cluster density; and $b_i$ is the smallest mean distance between point i and points in any other cluster than that in which i is a member, representing the dissimilarity to neighboring clusters. This means that, if a cluster partition is applied at the largest mean silhouette value, clustering can be carried out under such conditions in which the clusters are the densest and the most dispersed from one another.

Finally, we describe the modeling and prediction procedures based on this clustering method.

① Modeling procedures: learning datasets (184 companies, with mixed bankruptcy statuses) > normalization > principal component analysis (PCA) > silhouette analysis to determine the number of clusters (K) > clustering with K as the predetermined number of clusters > saving the learning model.

② Prediction procedures: input the dataset (one non-bankrupt company) > normalization using the learning model > PCA using the learning model > predicting the cluster to which the dataset belongs with reference to the learning model. The prediction outcomes are output for each company, and thus each company will have one prediction result.

## IV. Clustering Results and Discussions

*a) Clustering results*

We applied the above clustering model to the data described in section 3.1, and as a result, four clusters were formed. Table 6 shows the member distributions. In the next section, the prediction results are discussed. Here, as in a correlation analysis, if thresholds are assumed as a "ratio of bankrupt companies (%) > = 0.7" for a cluster with a high likelihood of bankruptcy and a "ratio of bankrupt companies (%) < = 0.3" for a low likelihood, then a non-bankrupt company is interpreted as not likely to go bankrupt if the company's input dataset belongs to Cluster 1, whereas it is likely an interpretation if the dataset falls within Cluster 3 or 4.

*Table 6:* Member distribution resulting from the clustering

| Cluster No. | No. of members | Bankrupt companies | Non-bankrupt companies | Ratio of bankrupt companies (%) |
|---|---|---|---|---|
| 1 | 100 | 26 | 74 | 0.26 |
| 2 | 36 | 21 | 15 | 0.58 |
| 3 | 41 | 32 | 9 | 0.78 |
| 4 | 7 | 5 | 2 | 0.71 |

*b) Corporate bankruptcy prediction using sample datasets*

We ran the process ② prediction (test) using sample financial statement data for non-bankrupt companies 1 and 2, the results of which are shown in Figures 1 and 2, respectively. As indicated by the star symbols, Company 1 (Figure 1) belonged to Cluster 1, whereas Company 2 (Figure 2) belonged to Cluster 3.

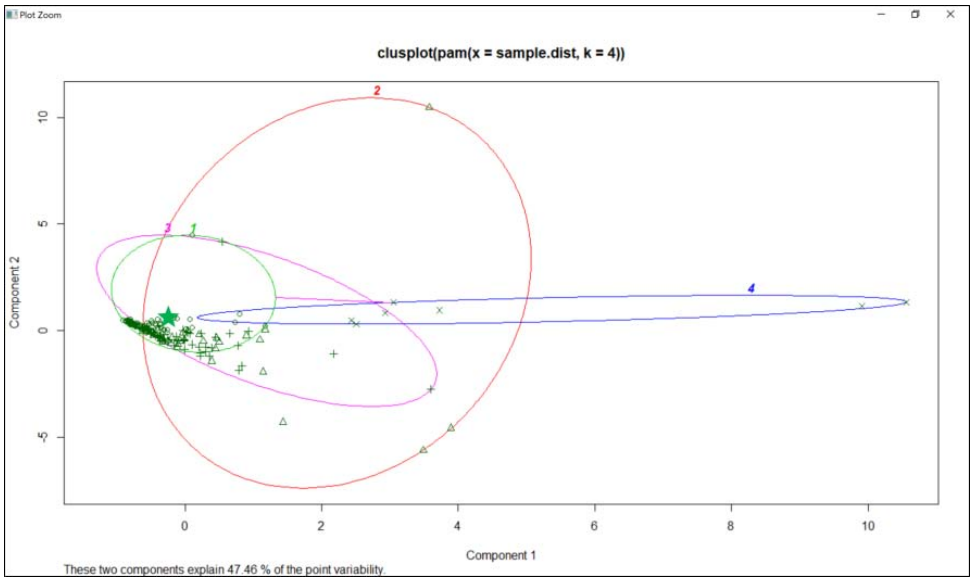


*Fig. 1:* Clustering result (non-bankrupt company 1)



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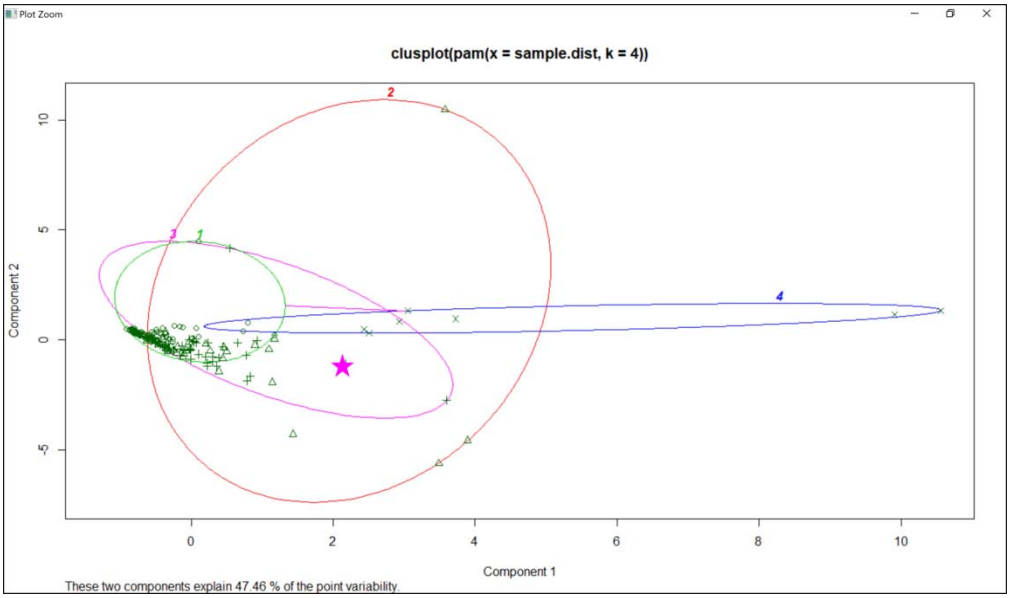


*Fig. 2:* Clustering result (non-bankrupt company 2)

The member features of Cluster 1, to which Company 1 belongs, are illustrated in Figure 3. On the horizontal axis, non-bankrupt companies are arranged toward the left, and bankrupt companies are arranged toward the right. The vertical axis represents the group mean value of the maximum change rate of the negative absolute values. Whereas the bankrupt companies in Cluster 1 are characterized by an outstanding change rate for investing cash flow (investment_cash_flow_dmax), the ratio of bankrupt companies is the lowest of the four clusters, which leads to an interpretation that non-bankrupt company 1 has little risk of bankruptcy.

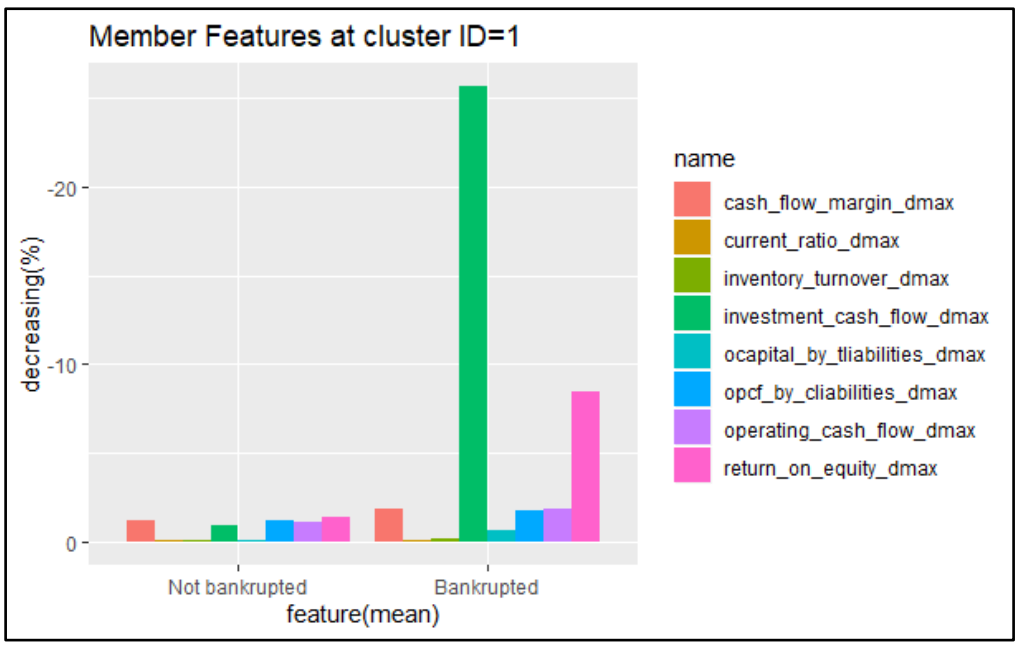


*Fig. 3:* Member features of Cluster 1

Figure 4 shows the member features of Cluster 3, where non-bankrupt Company 2 belongs. The markedly high contributing factor of the bankrupt company group in Cluster 3 is the return on equity (return_on_equity_dmax), followed by the investing cash flow (investment_cash_flow_dmax). Given that the ratio of bankrupt companies in this cluster is 78%, as indicated in Table 6, it is interpreted that Company 2 can be at risk of bankruptcy if its return on equity and investment in cash flow decline, suggesting the need to consider countermeasures in relation to these factors.



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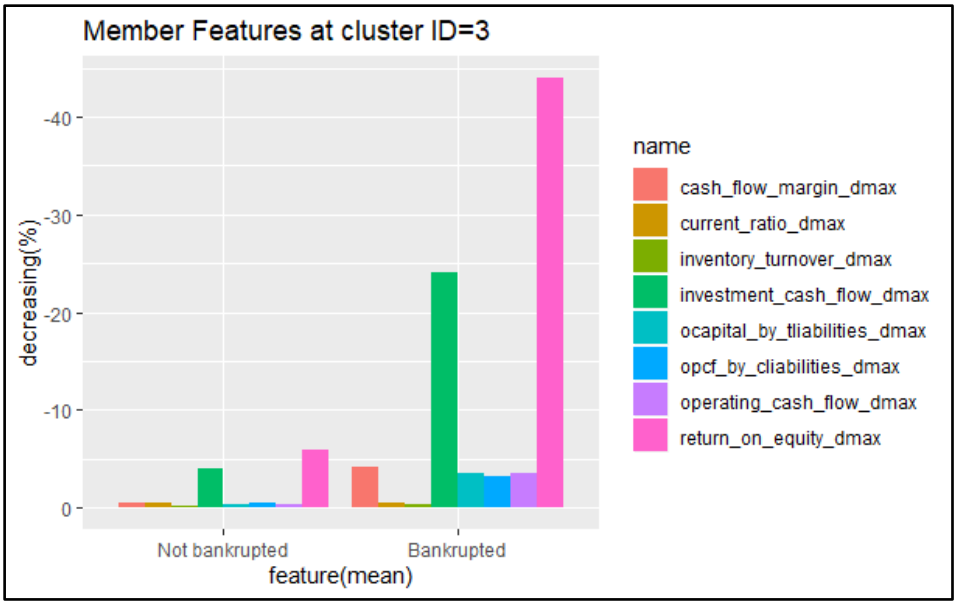


*Fig. 4:* Member features of Cluster 3

## V. Conclusion

By extracting feature values from chronologically ordered financial data used in machine learning, this study sought to develop a prediction model that not only predicts a bankruptcy during a binary judgment, but can also identify the financial variables that are likely to drive a company into bankruptcy. The evaluation test using sample data was successful in that the model clustered bankrupt companies according to the explanatory factors for their bankruptcy. Non-bankrupt companies were also grouped into clusters with the corresponding risk factors of bankruptcy. Thus, the study demonstrated that this model of cluster analysis, based on feature values taken from time-series financial statement data, is effective in predicting and identifying risks of future bankruptcy.

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# Discussion on Fintech Adoption Research

By Tewogbade Shakir

*Introduction-* Financial industry including its services and deliveries have witnessed rapid transformation in the recent years due to advancement in technological tools. The reasons are not far-fetched, as there are needs for readily available services that are fast, convenient and more efficient. More also, the combination of the financial services and technology has deepened financial inclusion at ease. Aside alternative digital channels provided by traditional banks to deliver fintech-like services, the common Fintech brands are Stripe (U.S), Coinbase (US), Monzo (UK), Revolut (UK) Flutterwave (Nigeria), Paystack (Nigeria), Lendingkart (India), Instamojo (India),Lufax (China), WeLab (China), Yoco (South Africa) and Zoona (South Africa).

Fintech is the deployment of technology to aid financial transactions such as payments, transfers and lending. They make financial services easier to use, cheaper in most cases, reliable and within consumers reach.

*GJMBR-A Classification: JEL Code: M19*




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# Discussion on Fintech Adoption Research

Tewogbade Shakir

## I. Introduction

Financial industry including its services and deliveries have witnessed rapid transformation in the recent years due to advancement in technological tools. The reasons are not far-fetched, as there are needs for readily available services that are fast, convenient and more efficient. More also, the combination of the financial services and technology has deepened financial inclusion at ease. Aside alternative digital channels provided by traditional banks to deliver fintech-like services, the common Fintech brands are Stripe (U.S), Coinbase (US), Monzo (UK), Revolut (UK) Flutterwave (Nigeria), Paystack (Nigeria), Lendingkart (India), Instamojo (India),Lufax (China), WeLab (China), Yoco (South Africa) and Zoona (South Africa)..

Fintech is the deployment of technology to aid financial transactions such as payments, transfers and lending. They make financial services easier to use, cheaper in most cases, reliable and within consumers reach.

Basically, adoption of Fintech will depend on degree of perceived benefits and perceived risk. Fintech services are readily adopted when the perceived benefits are greater than the perceived risk. Perceived benefits and perceived risks have been classified to different numbers by various researchers under various theories such as Technology Adoption Model (TAM), Elaboration likelihood Model (ELM), Unified Theory of Acceptance and Use of Technology (UTAUT), Theory of Reasoned Action (TRA) and Diffusion of Innovation Theory. Typical fintech adoption research will be carried out utilizing benefits such as ease of use, usefulness of services, financial/economic benefit such as pricing, social influence, speed of transaction (seamless) and convenience. Also, perceived risk is often considered under financial risk (loss of fund), regulatory risk (uncertainty in case of legal issues), security and privacy (how secured and vulnerable is the fintech platform and exposure of personal information) and operational risk (failure in system, processes). Combining the benefits and risks, benefit-risk system (valence level) is drawn to show level of Fintech adoption. Aside perceived risks, others mitigants in Fintech adoption is trust and fintech brand. Fintech adoption research is quantitative in approach while relationship among variables is explore numerically. Investigative hypotheses is developed along the research focus and they will be tested to show significant and non-significant relationships.

*Such investigative research does the following:*

1. Confirm the rate at which Fintech services are adopted.
2. Identify differences between variables that influence the behaviour of fintech adoption.
3. Give full consideration to effect of perceived benefits and risks as they set disparity.
4. Bias in adoption of fintech services (payments, microlending, wealth management, insurance, health service, account opening and investments) at the expenses of others.
5. Ascertain constraints faced by financial consumers while they are using Fintech services.

## II. Literature Review and Theoretical Background

As noted by Alt et al 2018, fintech exist when financial services are combined with delivering technologies. The overall aim is to coordinate activities and processes in a standardize manner such that intended financial tasks are performed efficiently. Many theories have been applied to justify adoption of Fintech among financial consumers such as Theory of reasoned action (TRA), Technology Acceptance Model (TAM), Diffusion Theory and Unified Theory of Acceptance and Use of Technology (UTAUT). Most researchers in the recent years focus more on UTAUT which has more power to absorb complex research questions and objectives. Review will be made of TAM model as one of the theories which were combined to invent UTAUT. Also, TRA, Theory of Planned Behaviour TPB and Theory of Perceived Risk are often integrated to justify constructs used for perceived risks in some research hypotheses. Diffusion Theory is itemized to actually reveal different levels of technology adopters and justify why everybody will not adopt technology at the same time. This can be used to study adoption behaviour and pattern.

### a) *Technology Acceptance Model (TAM)*

The theory was developed by Fed Davis in 1989 in his doctoral thesis at MIT. TAM has been judged as the most widely used theory in Information System to back adoption of various innovation and invention in Financial Technology. The popularity and widely acceptance of the theory is due to the fact that the theory was particularly invented to study adoption and implementation of technology that financial transactions relied on. The whole system of the model is unambiguous and simple to use. Dave in his TAM

*Author:* *e-mail: pingcommercial@gmail.com*



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theory, itemized system uses as feedback that is supported by motivation from the users where this motivation further depends on stimulus from the environment.

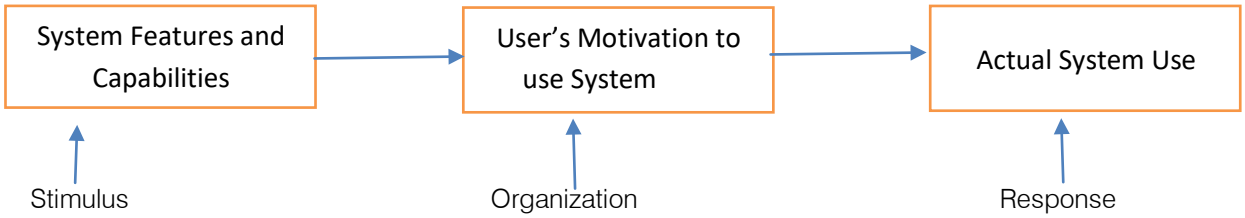


*Figure 1:* Background graphics depicting TAM (Davis, 1985)

Motivation from user is divided to three which are

1. Perceived Ease of Use (PEOU) – level at which individual financial users expect the target system is used effortless
2. Perceived Usefulness (PU) – belief by user that making use of the new system will enhance his/her performance and value will be delivered
3. Attitude toward using the system

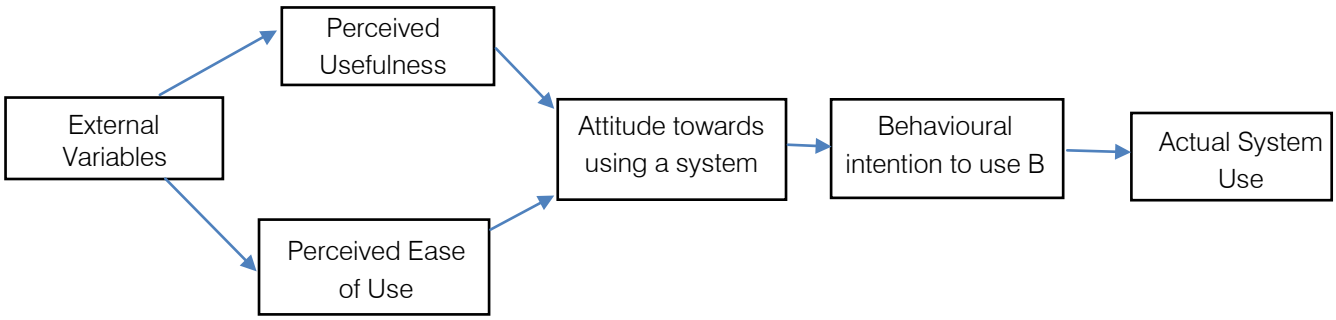


*Figure 2:* Advanced Graphic display of TAM by Davis 1989

TAM model has been used in many investigative research across the globe such as evaluation of e-learning systems acceptance by teachers by Shafeek 2011, study of online shopping behaviour by Zhou et al, acceptance of e-commerce with consideration of trust and perceived risk by Parlou 2003. Most research studies have shown reliable results in the various application of the model. As beautiful and widely accepted as TAM theory is, the weakness lie in the fact that social and organization factors were not accommodated in its construct. Perhaps these two factors have considerable impact in influencing innovation in technology and its adoption.

*b) Theory of Reasoned Action, Theory of Planned Behaviour and Theory of Perceived Risk*

Theory of Planned Behaviour is an extension of Theory of Reasoned Action while TRA stated the important role attitude takes in consumers intention to engage in some behaviours (Ajzen 1991), TPB extends the theory by adding perceived behavioural control (Taylor & Todd, 1995). This indicated existence of factors that can aid or hinder performance of a certain behaviour. Some behaviour of an individual performance depends on personal intention which is affected by attitudes and subjective norms (Sanayei & Bahmani, 2012). Conclusively Ajzen and Fishbein 1977, affirmed that an individual with strong believe in positive outcomes will exhibit positive attitude about the behaviour, while negative attitude will be shown when individual expects negative consequences such as loss in perceived risk. Perceived risk is uncertainty that might lead to loss in future. Theory of perceived risk was initially proposed by Bauer in 1960 to describe consumer behaviour considering perceived risk in subject term. Over the years, more studies from Cox (1964, 1967), Rich (1964), Cunnigham (1967), Amdt (1968) and Schiffman 1972, Lutz and Reilly (1973) among others have elaborated the concept of perceived risk. It was commonly seen as factor that has adverse effect on perceived intention by consumers. In accordance with Ryu (2018) claim, perceived risk is splitted into four classes which affect Fintech adoption behaviour.

1. Financial Risk
2. Security Risk
3. Operational Risk
4. Legal Risk

The proposed research questionnaire can bedrafted based on these four classes of the perceived risk.



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*Table 1:* Typical questionnaire based on integration of TRA, TPB and Theory of perceived risk

| |
|---|
| **PERCEIVED RISK (PR)** |
| **1.** Financial losses are likely to occur when I am using Fintech services |
| **2.** I am worried about my personal financial information when using Fintech services |
| **3.** someone might easily have access to my financial information when I am set up on Fintech platform |
| **4.** fintech companies are often far away to resolve issue on time in case of potential financial losses |
| **5.** there is a legal uncertainty for Fintech users as it is not easy to sue Fintech companies |

*c) Unified Theory of Acceptance and Use of Technology*

UTAUT was founded by Venkatesh and others in 2003 based on eight other theories to investigate the effect of many factors on individual intention and acceptance of new technology. The theories combined to form UTAUT are

1. Theory of Reasoned Action (TRA) by Fishbein & Ajzen 1975
2. Technology Acceptance Model (TAM) by Davis 1989
3. Motivational Model (MM) by Davis et al 1992
4. Theory of Planned Behaviour (TPB) by Ajzen 1991
5. Model of Personal Computer Utilization (MPCU) by Thompson et al 1991
6. The Social Cognitive Theory (SCT) by Bandural 1986
7. Innovation Diffusion Theory (IDT) by Rogers 1995
8. Combined TAM and TPB Model by Taylor and Todd, 1995

The unified model has four constructs to visualize user acceptance and behaviour of usage of new technology:

1. Performance Expectancy – User expect better performance for using the new technology. This is analogous to perceived Usefulness in TAM theory.
2. Effort Expectancy- easiness in using the new technology. Perceived ease of use. According to Venkatesh et al, 2003, this is situation when user believes that the new technology will be easy to operate and use. No doubt, effort expectancy is positively associated with performance expectancy. Thus, overall system will improve if it is easy to use (Davis 1989)
3. Social Factors – factors from immediate environment (friends, colleagues, family) affecting the user's behaviour
4. Facility Conditions: When users belief in existence of robust tools and infrastructure supporting the new technology.

Aside the constructs, UTAUT has four key moderating variables which display interaction among themselves at various stages of the constructs. They are Age, Gender, Education and Voluntariness of use. They moderate the effect of independent variables on dependent variables in the study of technology adoption.

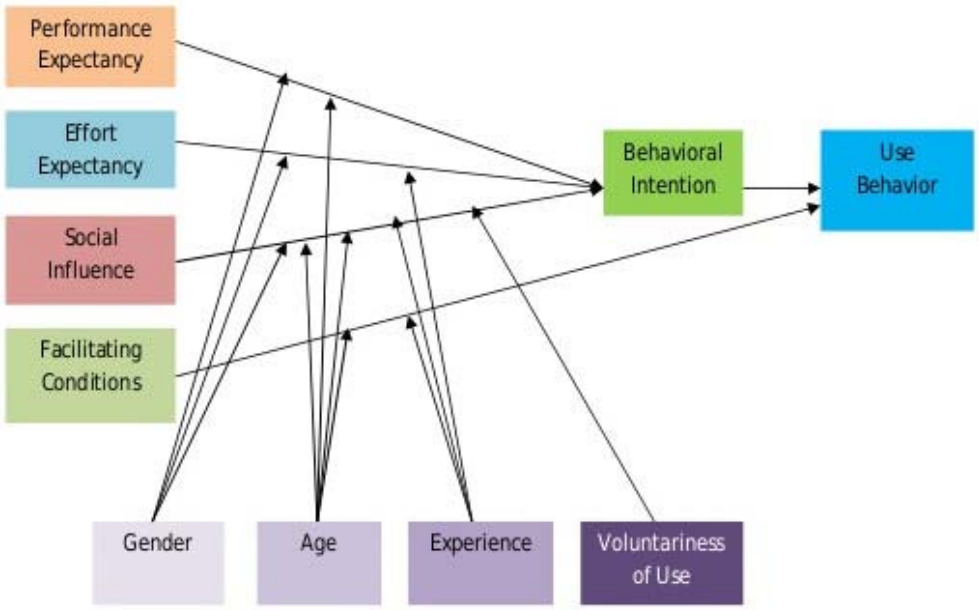


*Figure 3:* Graphical description of UTAUT Model

The research questions and objectives are tied to four constructs in UTAUT model to measure Fintech adoption.



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*Table 2:* Typicalresearch questionnaire using UTAUT constructs

| |
|---|
| **PERFORMANCE EXPECTANCY (PE)** |
| 1. Using Fintech products can make banking and transaction activities convenient |
| 2. I can make use of Fintech services without any restriction based on time and location |
| |
| **EFFORT EXPECTANCY (EE)** |
| 1. It is easier to initiate and conclude transactions using Fintech services |
| 2. it is easier to personally set up Fintech platform and learn its usage without the use of manual |
| |
| **SOCIAL INFLUENCE (SI)** |
| 1. I will make use of Fintech services if my friends and relatives are using it |
| 2. I will make use of Fintech services if my colleagues/business partners/clients/suppliers are using Fintech services |
| |
| **FACILITY CONDITIONS (FC)** |
| 1. The availability of basic facility to support Fintech services make it easy to access Fintech services |
| 2. The availability of basic facility to support Fintech services make it easy to initiate and conclude transactions using Fintech services |
| 3. The readily available of basis facility to set up Fintech Services influences the adoption of Fintech for various transactions |

UTAUT has been condemned by few researchers in their works such as Bagozzi Richard 2007 and Li Jerry 2020 due to many variables embedded in UTAUT be default and make outputs ambiguous. Perhaps UTAUT has been successfully utilized by many technology adoption investigation studies across the world such as study of perceptions of some individuals in Northern Finland toward mobile services by Koivumaki et al 2007, study of factors contributing to mobile learning adoption among museum staffs in England by Welch et al 2020 and Social Media adoption by selected non-profit organization in United States by Curtis et al 2020. Also, the core UTAUT model was extended and well utilized in some studies like influence of online social support on network information technology usage by Lin and Anol 2008, Model of acceptance with peer support (MAPS) Sykes et al 2009 and study of gender differences in mobile internet acceptance by Wang and Wang 2010. Thus, with UTAUT and other theories (TRA, TAM, IDT) we will be able to investigate empirically why some users are ready and willing to adopt new technology in their financial transaction while others are skeptical.

Few Existing research on Fintech services adoption.

The following are few notable research works on Fintech adoption in chronological order.

*Table 3:* Existing researches on Fintech Adoption

| S/n | Research Title | Author (s) | Year |
|---|---|---|---|
| 1. | Factors influencing the adoption of Internet Banking | S. Naimi Baraghani | 2008 |
| 2. | Applying Theory of Perceived Risk and Technology Acceptance Model in the online shopping channel | Huang Jing-Wen and Yong-Hui Li | 2009 |
| 3. | Extending the Unified Theory of Acceptance and Use of Technology | V Venkatesh, J. Thong, Xin Xu | 2012 |
| 4. | Understanding Benefit and Risk Framework of Fintech Adoption: Comparison of Early Adopters and Late Adopters | Hyun-Sun Ryu | 2018 |
| 5. | An adoption of Fintech Services in Malaysia | Tun-Pin Chong<br>Keng-Soon William Choo<br>Yen-Sun Yip<br>Pui-Yee Chan<br>Hong-Leong Julian The<br>Shwu-Shing Ng | 2019 |



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| | | | |
|---|---|---|---|
| 6. | Adoption Intention of Fintech Services for Bank Users: An empirical examination with an extended technology acceptance model | Hu Z. D | 2019 |
| 7. | Factors Influencing attitudes and intention to adopt financial technology services among the end-users in Lagos State, Nigeria | Yusuf Opeyemi Akinwale & Adam Konto Kyari | 2020 |
| 8. | Perceived Risk Factors affect intention to use Fintech | Ooi Chee Keony | 2020 |
| 9. | Fintech Revolution, Perceived Risks and Fintech Adoption: Evidence from Financial Industry of Pakistan | Asima Saleem | 2021 |
| 10. | Evaluating Drivers of Fintech Adoption in the Netherlands | Rasheedul Hassan Muhammad Ashfaq Lingli Shao | 2021 |

Many existing researches on Fintech such as those listed above have shed light on various aspects of user's intention to adopt Fintech services. Empirical investigations have been used to justify the common theories starting from TRA, TPB, TAM, Diffusion theory, motivational model, Model of Personal Computer Utilization (MPCU), Social Cognitive Theory (SCT) and UTAUT. Some of these works have been outside Nigeria to show Fintech adoption. Baraghani in 2009 investigated adoption of of internet banking within the context of Iran using extended TAM model with TPB. The main constructs in the research are Perceived Usefulness (PU), Perceived Ease of Use (PEOU), Trust and Intention to Use. Just like Baraghani's work, Yong-Hui et al integrated Theory of Perceived Risk (TPR) with TAM to study online shopping behaviour among 637 respondents in 2009. While TAM constructs such as PEOU and PU show positive influence on adoption, the TPR showed negative influence on PU and intention of respondent to shop through online channel. The research was performed in Taiwan. Similarly, Asima 2021 study on Fintech adoption in Pakistan was done using TPR and TAM. Hyun-Sun Ryu 2018 framework on Fintech adoption deviated from TAM and concentrated on benefit-risk of financial users to model adoption in Korea. The constructs on perceived benefits are monetary value, convenience and seamless transaction. These are PEOU and PU in another form.in actual fact, TAM constructs have captured PU (value-monetary/non-monetary) and PEOU (convenience/seamless transaction) in different forms in many existing researches in Fintech adoption. UTAUT progressed from TAM with additional constructs such as Social Influence and Facility Conditions aside Effort expectancy (PEOU) and Performance expectancy (PU). These additional constructs are very important to show impact of other people on financial users and contribution of supporting facility on user's readiness to adopt Fintech services. For example, the work on adoption of Fintech services in Malaysia carried out by Tun-Pin Chong and others in 2019 did utilized UTAUT but was silent on the construct of facility condition. They introduced other constructs-Security which capture risk and Perceived Enjoyment.

## III. Methodology (Research Design)

Research philosophy deals with ultimate beliefs guiding and supporting activities in an investigative study. There are various classes of philosophies in research area; the choice of what to be used depends on what the study is all about. As claimed by Sauders et 2007, research philosophy is the first stage to be handled in any research process which is focusing on creation of knowledge and entire nature of the knowledge. It is pertinent to select appropriate research philosophy in order to get every other stages right. The four main philosophies in shallow context are

1. Pragmatism
2. Positivism
3. Realism
4. Interpretivism

The most suitable philosophy for the proposed research on Fintech adoption is Interpretivim. Aside being commonly used in research philosophy in complex business studies, it is utilized to interpret potential financial user's intentions, perceptions and their actions with respect to Fintech services. As confirmed by Remneyi, 1998, interpretivism is seen as means of monitoring reality behinds selected situation. Most researches in Fintech adoption intend to study adoption pattern without any generalization of the outcomes.

*a) Sampling*

i. *Sample Size*

There are various ways of determining sample size as justified in past researches. Some are calculative while others follow rule of thumb. The first approach to our sample size as sample to variable ratio. Hair et al, stated the preserved ratio to be 15. Since our



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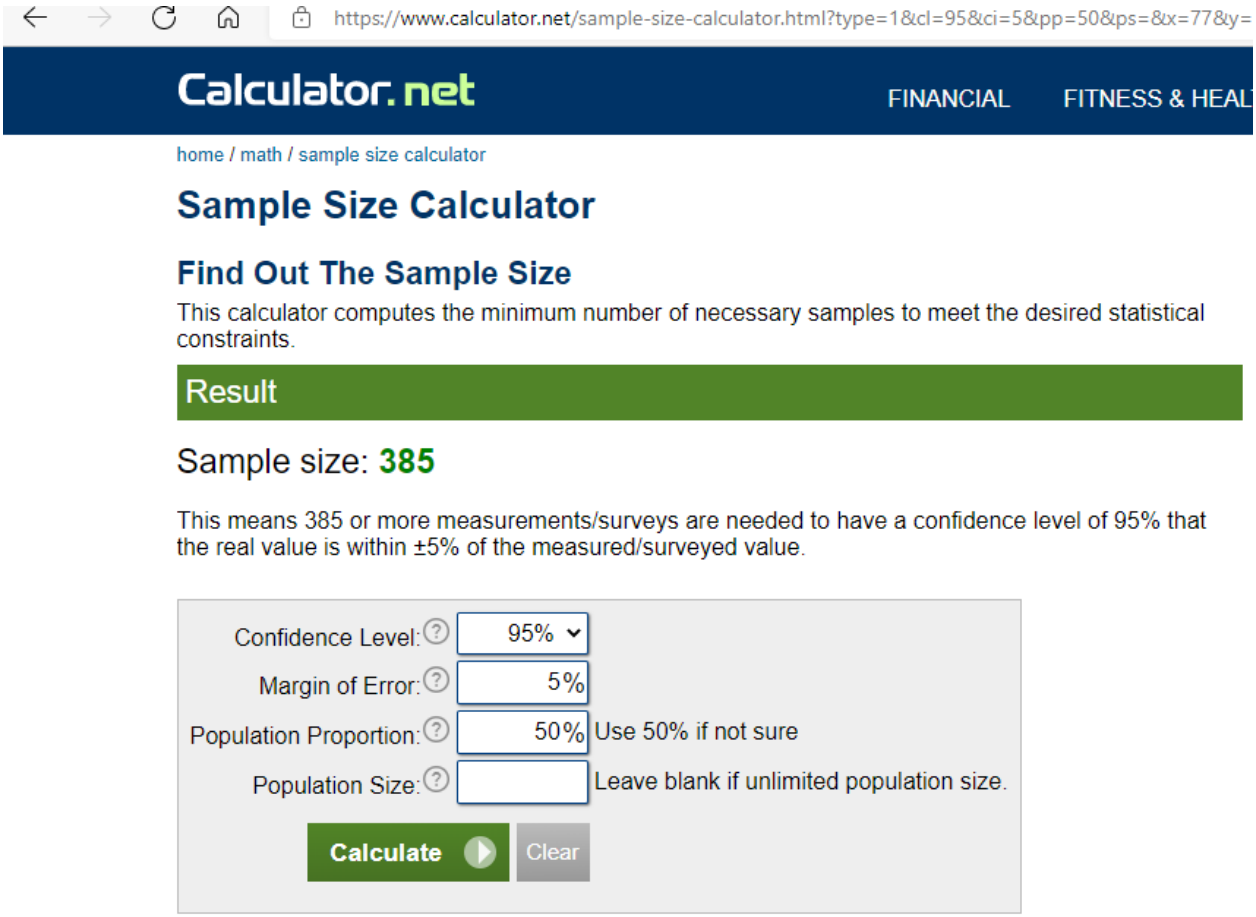
independent variables in six then our sample size can be range between 90 and 120. Another advantage of sample to variable ratio is that the research is interpretative in nature and generalization of final outcome is not necessary. Calculator.net launched in 2015 is commonly used sample size calculator just like Raosoft Sample size calculator and KMT (Krejie & Morgan, 1970). Many researchers like Amzat et al 2017, Cruz et al 2014 and Fernades et al 2014 testified to ease of use and its satisfactory outcomes. Making use of calculator.net with the applicable parameters is shown below. With this, the number of respondents for the research work will produce confidence level of 95%. Fintech adoption study is quantitative and Structural Equation Model is often used in treating the linkages among the constructs and the dependent variable, thus sample size below 200 will not be suitable (Kline 2005 and Kline 2016).




*b) Methods of Data Collection*

For proper conduct of fintech adoption research study, empirical data will be collected using questionnaire survey approach. Questionnaire survey is very suitable for acquiring data in Information Science as related by Chen Lin, 2019. Bryman, 2013, a questionnaire survey will allow us collect large amount of data needed for this investigation in order to appropriately mask behaviours of fintech users. Questionnaire can be easily processed statistically and result analyzed with much convenience. The research will make use of convenient sampling technique to carry out the survey. Convenient sampling is efficient, simple to use and implement as questionnaire will only be shared among users that are conveniently available for the study. Convenience sampling is regularly used in the field of social science due to its proximity, accessibility, willingness and quick response (Jager et al, 2017).

Most fintech adoption research is to analyze important factors which impact adoption of Fintech services. The investigation to analyze behavioural intentions of users will be achieved empirically by collecting data through survey method. Specifically, survey method is chosen, being a quantitative data collection technique used to collect data that are close-ended in nature from selected respondents. Many research studies in Fintech adoption subject area used quantitative research methodology as claimed by Noofa et al, 2020 and thus, most researches align with that stand. The survey questionnaire will be prepared by the researchers and administer to financial users on the field. The questions will be interval-based (Likert Scale).

The key segment of the questionnaire will be drafted to investigate the factors influencing the user adoption of Fintech services based on model selected (TAM, UTAUT, TRA, TPB and TPR). Each item bundled



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under the factor questions is delivered in Likert format. Most study use 7-point Likert scale. This will improve reliability to optimum level (Joshi et al, 2015).

*c) Sampling Method*

The sampling method to be used commonly used in Fintech adoption research is convenience sampling. The investigator (s) prioritized selection of the respondents based on users that are much willing and ready to complete the questionnaire. It is a non-probability method used by researchers to make sample from people that are in a close proximity (Etikan et al, 2016). Also, large sample size is needed to form research deduction based on convenience sampling.

*d) Sample Research Hypothesis*

Research hypothesis are formulated from the constructs of the selected model. Sample below is shown below

*Table 4:* Typical research hypothesis

| Hypothesis Number | Hypothesis | Linking Models to Research Questions |
|---|---|---|
| H1 | Performance Expectancy will have significant influence on use intention of Fintech services among financial users. | *Performance Expectancy as mentioned in UTAUT which is analogous Perceived Usefulness in TAM model* |
| H2 | Effort expectancy will have significant influence on use intention of Fintech services among financial users | *Effort Expectancy as mentioned in UTAUT which is analogous Perceived Ease of Use in TAM model* |
| H3 | Social influence will have significant influence on use intention of Fintech services among users | *As stated in UTAUT model to measure influence from family, friend and colleague* |
| H4 | Facility conditions will have significant influence on effort expectancy of Fintech services among users | *As stated in UTAUT model to measure robustness of the new technology in when compared to its ease of use.* |
| H5 | Facility conditions will have significant influence on use intention of Fintech services among users | *As stated in UTAUT model to measure robustness of the new technology in when compared to its usefulness* |
| H6 | Perceived risk will have a significant influence on use intention among financial users | *Based on TPR model* |
| H7 | Education level plays the moderating role in research model concerning users' intention to use financial services | *Based on Diffusion model* |
| H8 | Financial risk is positively associated with its perceived risk among users | *Based on TPR model* |
| H9 | Security risk is positively associated with its perceived risk among users | *Based on TPR model* |
| H10 | Operational risk is positively associated with its perceived risk among users | *Based on TPR model* |
| H11 | Legal risk is positively associated with its perceived risk among users | *Based on TPR model* |

*e) Validity and Reliability*

In order to make sure content validity and survey questions are relevant and suitable, pilot test is carried out. This will be reviewed by expert against targeted measures. Also, all proposed constructs is tested using Cronbach alpha coefficient for acceptability.

| Cronbach Coefficient | Internal Consistency |
|---|---|
| 0.9 and above | Excellent |
| 0.8 – 0.9 | Good |
| 0.7 – 0.8 | Acceptable |
| 0.6 – 0.7 | Questionable |
| 0.5 – 0.6 | Poor |

In many research work, confirmatory factor analysis is used to test model. Also, convergent validity and discriminant validity is carried out. Convergent validity will show correlation extent of multiple indicators for a specific variable. This is done by measuring average variance extracted (AVE). AVE measures of the sample should be greater than 0.5 to indicate convergency in applicable constructs. Discriminant validity indicates no linkage between each variable (measures of each variable can be distinguish from one another). It is tested by evaluating that AVE is greater than the squared interscale correlation for all constructs.

Similarly, composite reliability (CR) and Cronbach's alpha is used to test internal consistency of the data collected. For the proposed model to show good internal consistency CR should be greater than 0.7 and Cronbach's alpha should be greater than 0.8 (Fornell & Larcker, 1981).



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# L'EQUITE SALARIALE ET LA DEVIANCE LIEE A LA PROPRIETE AU SEIN DES PME CAMEROUNAISES

By *MOUNGOU MBENDA SABINE PATRICIA, MAITRE DE CONFERENCES, UNIVERSITE DE YAOUNDE 2, CAMEROUN. NANGLO ELIZABETH, PH.D, UNIVERSITE DE MAROUA, CAMEROUN. MATH MAZRA, MAITRE DE CONFERENCES, UNIVERSITE DE MAROUA, CAMEROUN*

*Universite de Maroua*

*Introduction-* Dans les pays du tiers monde, où la grande entreprise n'a pas joué pleinement son rôle dans la croissance économique, les PME deviennent la pierre angulaire pour l'envol de l'industrialisation. Elles sont aujourd'hui dans ces pays un moteur de développement économique et de création d'emploi. Le Cameroun n'est pas à la marge de cette bataille. En fait, depuis plus d'un demi-siècle, l'Etat fait des efforts énormes pour doter le pays d'entreprises efficaces soit en réduisant les charges fiscales, soit en créant d'organismes d'aides à la création et à l'émergence d'entreprises privées (BC-PME1, FOGAPE2 1 La Banque Camerounaise des Petites et Moyennes Entreprises 2 Le Fonds de Garantie pour la Petite Entreprise, etc.). Ces multiples efforts montrent que le développement des PME reste la voie idoine de développement socioéconomique des pays du tiers monde en général et du Cameroun en particulier.

*GJMBR-A Classification: JEL Code: M00*




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*MOUNGOU MBENDA SABINE PATRICIA, MAITRE DE CONFERENCES, UNIVERSITE DE YAOUNDE 2, CAMEROUN.*
*NANGLO ELIZABETH, PH.D, UNIVERSITE DE MAROUA, CAMEROUN.*
*MATH MAZRA, MAITRE DE CONFERENCES, UNIVERSITE DE MAROUA, CAMEROUN.*

## Introduction

Dans les pays du tiers monde, où la grande entreprise n'a pas joué pleinement son rôle dans la croissance économique, les PME deviennent la pierre angulaire pour l'envol de l'industrialisation. Elles sont aujourd'hui dans ces pays un moteur de développement économique et de création d'emploi. Le Cameroun n'est pas à la marge de cette bataille. En fait, depuis plus d'un demi-siècle, l'Etat fait des efforts énormes pour doter le pays d'entreprises efficaces soit en réduisant les charges fiscales, soit en créant d'organismes d'aides à la création et à l'émergence d'entreprises privées (BC-PME[1], FOGAPE[2], etc.). Ces multiples efforts montrent que le développement des PME reste la voie idoine de développement socioéconomique des pays du tiers monde en général et du Cameroun en particulier.

Cependant, ces PME sont au prise par des employés déviants. En plus de leurs ressources limitées elles se trouvent confrontées aux obstacles liés à leur développement dû au comportement anti-organisationnel affichés par leur personnel. Bennett et Robinson (2000) dans leurs études antérieures estimaient le taux de prévalence de ces comportements contreproductifs entre 50 % et 75 % alors que des études plus récentes menées par Bennett et al., (2018) et Marasi, (2014), font état d'un accroissement de ce taux de l'ordre de 90 % du fait de l'engagement d'une proportion inquiétante des employés dans au moins une forme de déviance au travail. Par exemple, deux tiers des employés américains affirment avoir abusé de congé de maladie et adopté d'autres formes des déviances organisationnelles (Harper, 1990). Un tiers des employés américains ont rapporté qu'il leur est arrivé de voler leur employeur (Harper, 1990). Harvey et al (2016) estiment à 3.5 milliards de dollars le coût des déviances pour les employeurs. Tandis que, le vol ou les fraudes commis par les employés seraient responsables de 20 % des fermetures d'entreprises aux Etats unis (Coffin, 2003).

Il est important de mentionner dans le cadre de ce papier que la littérature existante en matière de déviance est occidentale et porte généralement sur les grandes entreprises au détriment de la petite dimension ; faisant ainsi des PME un champ de recherche très peu exploré. Pourtant, des écrits historiques et sociologiques l'ont évoquée notamment ceux de Becker (1963) et Nootens (2007), en s'intéressant particulièrement aux phénomènes de sabotage. Si le concept de déviance organisationnelle à fait l'objet d'une pléiade d'études dans d'autres contextes, il demeure que dans le contexte africain en général et camerounais en particulier, le champ reste peu défriché. Les rares travaux sont ceux réalisés par Begne (2012) qui analyse sous l'angle de la relation d'agence les comportements déviants des dirigeants d'entreprises publiques au Cameroun, Moungou et Bekono (2013) qui ont montré que les déviances, considérées sous l'angle des mauvaises pratiques observées dans le système de passation des marchés publics contribuent dans certains cas à la performance. En outre, ces travaux ne visent pas le contexte spécifique des PME et encore moins leurs pratiques de GRH notamment leurs relations avec l'équité salariale. Ainsi, pour approfondir ce champ d'étude, le présent papier a pour objectif d'examiner l'influence de l'équité salariale sur la déviance liée à la propriété des employés dans les PME camerounaises.

Notre article est structuré de la manière suivante : nous présentons tout d'abord le cadre théorique relatif aux notions d'équité salariale et de déviance liée à la propriété. Ensuite, les approches méthodologiques, qualitative pour l'étude exploratoire et quantitative, seront exposées. Enfin, la présentation/ discussion des résultats, ainsi que leurs implications théoriques et managériales.

## 1. Cadre Théorique et Hypothèses de Recherche

Cette partie est consacrée à l'analyse conceptuelle des notions d'équité salariale et de déviance liée à la propriété et à la formulation des hypothèses de recherche à partir d'une revue de littérature et des verbatims issus de l'enquête exploratoire.

### *1.1. La déviance liée à la propriété*

La déviance peut s'appréhender certes comme un écart marqué à la règle ou à la norme, mais aussi comme une transgression et un facteur de dysfonctionnement de l'organisation (Honoré, 2006). Elle est conçue ainsi de façon négative, car elle traduit le fait d'individus dont les comportements volontaires

[1] La Banque Camerounaise des Petites et Moyennes Entreprises
[2] Le Fonds de Garantie pour la Petite Entreprise



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menacent le bien-être de l'organisation et/ou de ses membres (Robinson et Bennett, 1995).

Par ailleurs, nous ne saurons parler des déviances liées à la propriété sans faire allusion à la déviance organisationnelle qui est définie par Robinson et Bennett (1995), comme des actes volontaires qui nuisent ou qui ont le potentiel de nuire aux organisations. Cette famille des comportements déviants au travail est subdivisée en deux catégories:

– *la déviance liée à la production:* défini par Hollinger et Clark (1983, p. 333) comme un « *comportement qui viole les normes formelles prescrites afin d'obtenir une quantité et une qualité de travail minimale*». Autrement dit, ce sont des comportements qui englobent toutes les actions visant à réduire la quantité et/ou la qualité du travail accompli. Il s'agit des comportements contre-productifs dont le niveau de sévérité est faible et qui visent l'organisation pouvant se manifester par des pauses abusives ou plus longues que nécessaire, des absences répétées, l'adoption des cadences ralenties ou travailler intentionnellement plus lentement, le gaspillage de ressources, etc. Bien que le niveau de sévérité soit faible les coûts induits peuvent être importants (notamment des coûts de production).
– *la déviance liée à la propriété:* défini également par Hollinger et Clark (1983, p. 333), comme un « *comportement non autorisé résultant en dommages concernant la propriété de l'organisation, que ce soit sa propriété tangible (les équipements) ou intangible (la qualité du service à la clientèle) ».* En d'autres termes, ce sont des comportements portant atteinte à la propriété de l'entreprise c'est-à-dire, impliquant des dommages ou l'appropriation des biens d'une organisation sans autorisation préalable. Ou mieux encore, elle correspond à des comportements qui portent atteinte au patrimoine de l'entreprise.

Ils se caractérisent par un niveau de sévérité élevé et ciblent l'organisation. Ils se manifestent sous forme de vol de produits, la surfacturation des frais de remboursements, la falsification des comptes, le vandalisme ou le sabotage d'équipement, l'absentéisme, le vol des équipements appartenant à l'organisation, etc. C'est donc cette dernière catégorie de déviance organisationnelle qui fera l'objet de ce présent article.

### *1.2. L'équité salariale*

Bien qu'étant ancien, le concept d'équité continu à susciter un engouement pour bon nombre de chercheurs. Ainsi, d'un point de vue étymologique, le terme "équité", du latin "aequitas désigne une forme d'égalité ou de juste traitement. Elle est également perçue comme la qualité constante à attribuer à chacun ce qui lui est dû où encore c'est le caractère de ce qui est fait avec justice et impartialité.

Adams (1963) quant à lui, appréhende l'équité comme un processus de comparaison sociale au cours duquel l'individu compare son propre rapport rétribution / contribution avec celui d'une autre personne ou d'un groupe de référence donné.

Enfin, Meltz (1989) définit l'équité comme un traitement juste des êtres humains sur un lieu de travail, c'est-à-dire dénié d'arbitraire, de discrimination et de favoritisme.

L'équité salariale quant à elle est définie par Peretti (2010), comme une rémunération perçue comme équitable par rapport à un groupe de pairs. En d'autres termes, l'équité salariale est un salaire égal pour un travail de valeur égale. Dans le cadre de ce papier nous retiendrons la définition de Peretti (2010) de l'équité salariale. Toutefois, il n'existe pas à ce jour de définition qui fasse l'unanimité. En effet, même la définition de base du «traitement équitable[3] » n'a qu'un caractère formel. La question de savoir si deux situations sont jugées égales ou inégales l'une par rapport à l'autre dépend des critères de valeur sous-jacents. Le concept d'équité a donc toujours besoin d'être défini.

### *1.3. Hypothèses de recherche*

#### 1.3.1. *Equité externe et déviance liée à la propriété*

Selon le modèle de Robinson et Bennett (1997), l'iniquité (injustices) en milieu de travail figure parmi les offenses ou provocations qui conduisent les individus à adopter des déviances liées à la propriété. En gestion de la rémunération, trois types de référent sont reconnus comme étant principalement importants d'après Thériault et St-Onge, (2000) : l'équité externe, l'équité interne et l'équité individuelle.

Pour Thériault et St-Onge (2000), l'équité externe fait référence à la perception de justice à l'égard de la rémunération qui résulte de la comparaison avec des emplois similaires se trouvant dans d'autres organisations. Des études empiriques ont montré que l'absence de cette équité est particulièrement associée au roulement du personnel (Wade *et al.,* 2006). Par contre, l'étude de Levine (1993) a montré que les travailleurs recevant des salaires supérieurs comparativement à la moyenne du marché avaient moins tendance à adopter des déviances liées à la propriété au sein de leur entreprise. De plus, l'étude de Scholl *et al.,* (1987) a montré que l'équité externe prédit plus fortement l'intention de rester au sein de l'organisation que les autres formes d'équité liées à la rémunération. Car, un employé qui perçoit une équité externe est fidèle à son entreprise et n'adopte aucun type de comportement déviant. Pourtant, un individu inéquitablement rémunéré par rapport à un référent

[3] C'est-à-dire traiter l'égale de manière égale et l'inégale de manière inégale.



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externe vit une grande tension qui l'incite à poser des actes déviants, notamment des déviances liées à la propriété. C'est ce qu'affirme le répondant « A » qui nous confie ceci: « *… en cas d'iniquité salariale sur le plan externe, je rentre avec des choses appartenant à mon entreprise ou bien je vandalise les équipements…* ». Le répondant « E » va également dans le même sens en disant ceci : « *une rémunération inéquitable après une comparaison sur le plan externe me conduit vers le vol des équipements, le sabotage du matériel…* ». Ainsi, prenant en compte les éléments mobilisés dans la littérature, nous formulons l'hypothèse suivante :

*H1: L'équité externe influence négativement la déviance liée à la propriété.*

1.3.2. *Equité interne et déviance liée à la propriété*

L'équité interne fait référence à la rémunération en fonction de la valeur de chaque poste dans une même entreprise. Elle permet de déterminer ce que rapporte chaque poste dans l'organisation. Elle a trait aux comparaisons entre les emplois à l'intérieur d'une même organisation, pour déterminer l'apport de chaque emploi à la réalisation des objectifs de l'organisation. En d'autres termes, l'équité interne se réfère à la relation entre les différents emplois de l'organisation. Selon Thériault et *al.,* (2000), le degré d'équité interne perçu a un effet sur la stabilité de la main d'œuvre, la satisfaction des employés et sur la productivité.

C'est le caractère gênant de l'iniquité qui pousse les salariés à chercher à restaurer ou réclamer la justice. La sous-équité est source de la dissonance cognitive. Suite à cette dissonance cognitive, le salarié en situation d'iniquité va chercher à améliorer sa situation pour défendre sa considération tandis que l'exploiteur le fait pour surmonter son sentiment de culpabilité (Peretti et Benraiss, 2004). Dans ce sens, cherchant à rétablir l'équilibre, l'individu agit sur ses contributions ou rétributions. En fait, lorsque l'action de rééquilibre consiste à agir sur ses contributions, l'entreprise va se plonger dans la situation où elle évolue avec des salariés démobilisés (présents-absents) (Thévenet, 2000). Par conséquent, l'entreprise va subir des coûts visibles (perte de productivité, de créativité) ou cachés (non-qualité, absentéisme) puisque les salariés en situation inconfortables refusent de s'investir dans leur travail (Guérin et wils 2002). L'entreprise peut subir d'énormes pertes liées à la déviance organisationnelle lorsque l'action de rééquilibre portes sur les rétributions (Martin, 2016).

De ce fait, le salarié en sous équité sur le plan interne peut alors réduire sa contribution Par plusieurs actes tels que:

le sabotage illustré par le répondant « H » qui nous confirme que : « *en cas d'une rétribution considéré inférieure à un référent interne qui occupe le même poste que moi, je décide de me rendre justice en dégradant volontairement les équipements* ».

le vol comme l'indique l'interviwié « D » « *…le vol constitue pour moi un moyen de me rendre justice en cas de perception d'un salaire qui ne me satisfait pas…* » etc. Fort de ce constat et des éléments mobilisés à la fois dans la littérature et dans l'étude exploratoire, nous formulons l'hypothèse suivante :

*H2: L'équité interne influence négativement la déviance liée à la propriété.*

1.3.3. *Equité individuelle et déviance liée à la propriété*

Pour maintenir un bon climat au travail et être satisfait des employés, le système de rémunération de toute organisation doit donner à chaque employé le sentiment d'être traité à sa juste valeur (Adams, 1965; Peretti, 2004). Il doit y avoir existence d'une classification des emplois et d'une échelle des salaires, de manière à récompenser uniquement le mérite et à ne pas susciter des contestations de la part des autres employés; « *à compétence égale salaire égal* ». C'est dire que, chaque organisation devrait gérer équitablement du point de vue rémunération tous ses employés ayant la même qualification, le même niveau de responsabilité, de performance, etc. En somme, l'équité individuelle qui vise à assurer le juste positionnement des employés en fonction de leurs années d'expérience, de leurs compétences ou de leur rendement prend alors toute sa valeur au sein de toute organisation pour son bon fonctionnement.

Roussel (1996) estime que, la motivation de l'individu à produire des déviances liées à la propriété, naît de l'état de tension provoqué par le sentiment d'iniquité qu'il peut ressentir à la suite des comparaisons du ratio rétribution/contribution. Cherchant à réduire ou à éliminer cette tension, l'individu réagit et déploie des efforts pour y parvenir. La motivation qu'il va trouver pour rétablir l'équilibre entre son ratio et celui de ses points de repère le conduit à des comportements et à des attitudes multiples qui peuvent être éventuellement contraires aux intérêts de son entreprise. C'est ce que pense le répondant « A » puisqu'il nous dit ceci « *…quand ma contribution comparée à ma rétribution est supérieure, je cherche à rétablir l'injustice soit en sabotage des biens appartenant à l'entreprise, en m'appropriant des biens appartenant à l'entreprise, en pillage des biens de l'entreprise, en mentant sur mes heures d'arriver et de départ, en divulguant des informations erronée aux collègues, etc*. ». Tous ces comportements déviants liés à la propriété permettent à l'individu d'accroître les contributions de son référent ou accroître ses propres rétributions et ainsi rétablir l'équité de leur ratio rétributions/contributions. De cette revue de la littérature, nous pouvons formuler l'hypothèse H3 suivante :



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*H3: L'équité individuelle influence négativement la déviance liée à la propriété.*

## 2. Approche Méthodologique et Mesure des Variables

Dans le cadre de cette recherche, nous avons opté pour une démarche hypothético-déductive dont l'objectif est de tester le modèle de recherche à l'aide des données issues d'une enquête quantitative. Toutefois, une étude exploratoire a été menée *a priori* dans le but de délimiter la problématique de l'étude et mieux contextualiser les hypothèses de recherche. Dans cette section nous mettrons en relief les différents aspects méthodologiques relatifs à l'étude exploratoire et à l'étude quantitative.

### *2.1. Etude exploratoire*

#### 2.2.1. *Objectif de l'étude exploratoire et collecte des données*

L'étude exploratoire est une étude à caractère explicatif qui s'intéresse à la compréhension et non à la mesure des comportements. Elle permet de poser les jalons, permettant une étude ultérieure plus importante et représentative. Dans le cadre de cet article, elle a permis de se familiariser avec le problème de recherche. En effet, il s'agissait de mieux cerner le sujet, de cadrer la problématique, d'affiner les hypothèses de recherche et de prendre en compte les idées qui n'ont pas été pas abordées dans la littérature (Usunier et *al*., 2000). Ainsi, le but de notre étude exploratoire était de mieux contextualiser les notions d'équité salariale et de déviance liée à la propriété selon les particularités des PME camerounaises.

Les données issues de cette enquête ont été récoltées à partir des entretiens semi-directifs réalisés auprès de 8 employés des PME camerounaises. Le guide d'entretien ayant permis cette collecte comporte trois thèmes y afférent à l'équité salariale et à la déviance liée à la propriété. (Voir le tableau n°1).

*Tableau n° 1:* synthèse du guide d'entretien (thèmes et principales questions)

| Thème 1: Comprendre les préoccupations des salariés sur l'équité salariale |
|---|
| 1. Pour vous à quoi renvoie le fait d'être rémunéré avec équité ? |
| 2. Pour vous à quoi renvoie le fait d'être bien traité au sein de votre entreprise ? |
| 3. Pour vous qu'est-ce qui vous permet de savoir que vous êtes bien rémunéré ? |
| 4. Faites- vous des comparaisons sur le plan salarial avec d'autres employés. Si oui, avec les employés appartenant à votre entreprise ou ceux appartenant à d'autres entreprises? Pourquoi ? |
| **Thème 2: Indicateurs de l'existence de la déviance liée à la propriété au sein des PME** |
| 1. Gaspillez-vous les biens de votre entreprise ? |
| 2. Rentrez-vous avec des biens appartenant à l'entreprise ? |
| 3. Endommagez- vous volontairement le matériel ou les équipements de votre entreprise ? |
| 4. Pouvez-vous nous dire ce qui vous pousse à adopter ce type de comportement ? |
| **Thème 3: Relation entre l'équité salariale et la déviance liée à la propriété** |
| 1. Existe-t-il un lien entre votre conduite dans l'entreprise et votre rémunération ? Pourquoi ? |
| 2. L'application de l'équité sur le plan salarial vous incite-t-elle à adopter des comportements productifs (bon comportement) dans votre entreprise ? |
| 3. En cas d'une rémunération qui ne vous satisfait pas par rapport au travail que vous fournissez, que faites-vous pour rétablir cette injustice perçue ? |

*Source: auteurs.*

### *2.2. Etude quantitative*

Nous mettrons en exergue dans cette section l'approche méthodologique adoptée dans le cadre de l'étude quantitative, en l'occurrence l'instrument de collecte des données, l'échantillon de l'étude, la méthode d'échantillonnage et les outils statistiques. Nous décrivons également la mesure des variables de notre modèle empirique; notamment la variable explicative et la variable expliquée.

#### 2.2.1 *Echantillonnage et outil de collecte des données*

La population ciblée par cette enquête est constituée de l'ensemble des employés de petites et moyennes entreprises camerounaises. Qui, selon les informations fournies par l'Institut National de la Statistique (INS) du Cameroun, en 2016, représentent 98% du tissu économique de ce pays.

Par l'absence d'une base de données des PME au Cameroun, nous avons constitué un échantillon de 409 employés issus de ce type d'entreprise suivant la méthode dite de choix raisonnée. Cette sélection s'est faite sur la base de leur accessibilité et de leur disponibilité à fournir de l'information au moment de l'enquête. Sur les 409 questionnaires administrés en face à face, seuls 374 ont été exploités soit un pourcentage de 91,44 %. Les 35 non-réponses sont représentatives des réticences des enquêtés sous le



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prétexte du manque de temps et de la sensibilité du sujet. Les données ainsi collectées ont fait l'objet d'analyses et d'interprétations grâce au logiciel SPSS IBM. L'enquête s'est déroulée du 10 décembre 2019 au 07 janvier 2020 dans les villes de Yaoundé, Maroua, Garoua, Ngaoundéré, Douala.

2.2.2. *Mesure des variables*

Cet article a deux types de variables : explicative et expliquée. Elles ont été mesuré respectivement sur la base de deux échelles de mesure de Likert à cinq point que nous avons adapté à notre étude allant de « Nettement inférieur » à « Nettement supérieur » et la deuxième échelle mesurant notre variable expliquée va de « Jamais » à « Toujours ».

La variable explicative (équité salariale) est appréhendée dans ce travail par trois dimensions : l'équité externe, l'équité interne, l'équité individuelle. En référence aux critères d'évaluation de l'équité salariale adapté de Shaw et Guta (2001), Benraiss et Peretti (2001), deux (02) items ont été retenu pour mesurer l'équité externe, deux (02) autres items ont permis de capter l'équité interne et enfin quatre (04) items ont permis de saisir l'équité individuelle. Un exemple d'item est *: « En comparant mon salaire à ma qualification dans mon entreprise, mon salaire est : ».*

Par contre, la variable expliquée (déviance liée à la propriété) est mesurée par neuf (09) items provenant de plusieurs instruments de mesure existants (Spector et al., 2006 ; Skarlicky et Folger 1997 ; Robinson et Bennett 1995 ; Neuman et Baron 1998). Nous avons procédé ainsi afin de compiler le maximum de comportements différents possibles. Un exemple d'item relatif à cette variable est : *« Vous rapportez à la maison des choses qui appartiennent à votre entreprise sans permission* ».

En effet, ces items sont générés par les échelles de mesure sus-évoquées et les entretiens exploratoires qui ont permis d'affiner ces mesures

2.2.3. *Méthode d'analyse*

Comme techniques d'analyse dans ce travail, nous avons fait appel à la régression linéaire multiple. Ainsi, après vérification des corrélations bivariées des facteurs issus des ACP, il en ressort que, les valeurs de corrélation de Pearson de tous les facteurs sont inférieures au seuil de 0,8 d'après Lind et al., (2007) avec des significativités de 0,000. On peut alors conclure qu'aucune corrélation bivavariée n'est significative. Les facteurs sont donc homogènes entre eux. Par conséquent, nous avons pris en compte tous les facteurs et effectuer l'analyse de régression. Le modèle économétrique de l'influence de l'équité salariale sur la déviance liée à la propriété se présente comme suit :

$$Y_1 = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \varepsilon$$

$Y_1$ = Déviance liée à la propriété ;
$X_1$ = Equité externe ;
$X_2$= Equité interne ;
$X_3$ = Equité individuelle ;
$\beta_{0...n}$ = La constante ;
$\varepsilon$ = Terme d'erreur.

## 3. Présentation des Résultats et Discussion

Nous présentons successivement dans cette partie les différents résultats obtenus de nos analyses et d'autre part la discussion de ces résultats.

*3.1. Présentation des résultats*

3.1.1. *Matrice des corrélations*

*Tableau n°3:* Matrice des corrélations entre les variables

| Variables | Equité externe | Equité interne | Equité individuelle | Déviance liée à la propriété |
|---|---|---|---|---|
| Equité externe | 1 | | | |
| Equité interne | 0,521** | 1 | | |
| Equité individuelle | -0,622** | 0,723** | 1 | |
| Déviance liée à la propriété | -0,534** | -0,529** | -0,584** | 1 |

**La corrélation est significative au niveau 0.01 (bilatéral).

Une analyse en composantes principales nous a permis de retenir quatre facteurs à savoir : l'équité externe, l'équité interne, l'équité individuelle en ce qui concerne la variable explicative (équité salariale) et un facteur quant à la variable expliquée (déviance liée à la propriété). La régression linéaire multiple entre l'équité salariale et la déviance liée à la propriété nous conduit aux résultats suivants :

3.1.2. *Mise à l'épreuve des hypothèses*

Nous procédons ici à une vérification des hypothèses.

*Tableau n° 4:* Récapitulatif du modèle de régression entre l'équité externe, interne, individuelle et la déviance liée à la propriété

| Variables | R | $R^2$ | $R^2$ ajusté | F de Fisher | Sig | β 1 | β 2 | β 3 |
|---|---|---|---|---|---|---|---|---|
| Valeurs | 0,614 | 0,377 | 0,372 | 74,503 | 0,000 | -0,172 | -0,153 | -0,348 |

*Source: Auteurs.*

A la lecture du tableau 4 ci-dessus récapitulant le modèle entre les différentes dimensions de l'équité salariale et la déviance liée à la propriété, nous constatons à travers le coefficient de corrélation de



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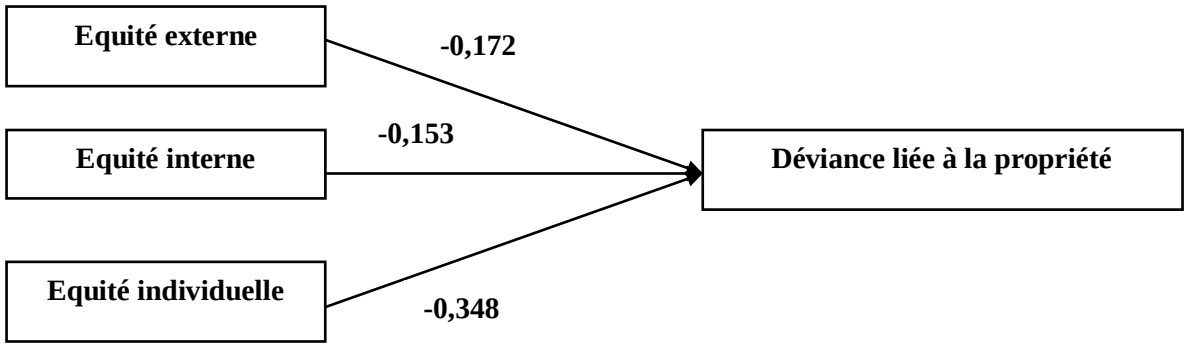
0,614 qu'il existe une relation forte entre ces variables. De plus, le coefficient de détermination de 0,372 signifie que 37,2 % de la variation de la déviance liée à la propriété est expliquée par l'équité externe, interne et individuelle. Enfin la robustesse du modèle est donnée par le F de Fisher qui est de 74,503 au seuil de signification de 0,000. Avec son (**β = -0,348**) la variable équité individuelle explique plus la déviance liée à la propriété suivie de l'équité externe et enfin de l'équité interne. Le signe des différents bêtas attestent de l'effet négatif de l'équité salariale sur la déviance liée à la propriété.

*Figure n° 1:* Modèle de l'influence de l'équité salariale sur la déviance liée à la propriété




*Source: auteurs.*

*3.2. Discussion*

Il ressort de notre étude que, le traitement équitable au niveau de la rémunération contribue significativement à l'adoption des bons comportements par les employés (Fall, 2014) puisqu'ils ont tendance à comparer leur situation à celle des autres (Adams, 1965 ; Peretti, 2004). Par conséquent, ces individus motivés seront en mesure de déployer des comportements productifs dans l'intérêt de l'organisation. En d'autres termes, nos résultats soutiennent qu'une allocation de ressources respectant les normes d'équité (Leventhal, 1976 ; Deutsch, 1985 ; Kellerhals, 1995) est un déclencheur de certains comportements clés chez les salariés d'une PME en rendant ceux-ci plus productif au travail. Or, lorsque les individus s'estiment sous-rétribués comparativement à leurs contributions au sein de la PME, ils ont tendance à agir de façon à réduire l'écart entre la situation actuelle et la situation désirée, à savoir obtenir des rétributions qui correspondent à leurs contributions (Adams, 1965; Robinson et Bennett, 1997). Au cas où les salariés font face aux situations de sous ou de sur-équité, ils vont avoir un ressentiment dans le premier cas et de culpabilité dans la seconde (Adams, 1965). Ce qui les poussera à rétablir l'injustice perçue et pourrait dans ce sens nuire aux intérêts de l'organisation en sabotant les équipements, en s'appropriant des biens de l'entreprise, etc. La plupart des pratiques de mobilisation des ressources humaines accordent une importance particulière aux rétributions (Dubouloz, 2014) particulièrement le respect de l'équité salarial. Ceci est d'autant plus vrai que pour Giraud (2015), l'iniquité salariale affecte directement sur le comportement des salariés. Par conséquent, des comportements nuisant la PME tels que l'absentéisme, le vol, le sabotage, le manque d'implication, etc. vont se développer chez les salariés. Ces résultats corroborent les travaux effectués par d'autres auteurs sur le sujet qui ont abouti aux résultats selon lesquels, il existe une relation positive entre la justice distributive et les comportements des salariés (Muller et Djuatio, 2011 ; Molines et Fall, 2016).

Par ailleurs, nous avons constaté que des trois formes d'équité étudiées dans les PME camerounaises, l'équité individuelle explique le mieux la déviance liée à la propriété et est la plus utilisée par les employés enquêtés pour leur comparaison. Ceci peut s'expliquer par le fait que non seulement les enquêtés ne perçoivent pas de différences entre l'équité interne et l'équité individuelle, mais également, ils n'ont pas les moyens nécessaires pour avoir toutes les informations sur les salariés situés dans d'autres entreprises. En effet, depuis Adams (1965) jusqu'à nos jours aucune étude n'aurait démontré comment les employés arrivent à avoir les informations sur les employés exerçant dans des entreprises autres que leurs entreprises.

De plus, la faible fréquence avec laquelle les sujets commettent des déviances liées à la propriété pourrait ainsi traduire soit leur crainte de perdre leur emploi. Ou alors, il est possible que plusieurs sujets craignent de ne pas être repérés comme des employés déviants et de se voir refuser la promotion désirée. Il est aussi fort possible que les répondants aient eu de l'aversion à admettre qu'ils ont adopté cette forme de déviance, car il n'est pas socialement acceptable de commettre des déviances liées à la propriété.

## Conclusion

Cette recherche avait pour objectif d'examiner l'effet de l'équité salariale sur la déviance liée à la propriété des employés des PME camerounaises. A l'aide d'une évaluation empirique portant sur 374



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employés des PME, il ressort de cette recherche que les politiques de GRH, et en particulier la politique de rémunération du personnel permet à la petite dimension d'améliorer le comportement de son personnel. Ainsi, cette étude dégage à la fois un double intérêt, théorique et pratique.

Sur le plan théorique, ce travail a permis de comprendre la relation qui existe entre l'équité salariale et la déviance liée à la propriété. De plus, il constitue un cadre théorique permettant d'enrichir la littérature sur la gestion de ce type de comportements déviants des employés au travail par l'équité salariale. Aussi, la majorité des études concernant les concepts de cette recherche sont toujours effectuées sur les grandes entreprises. Ce faisant, notre étude apporte une valeur ajoutée en menant l'étude sur les PME dans lesquelles la satisfaction des besoins des salariés est le plus souvent délaissée. Somme toute, cette recherche pourrait servir de cadre de référence et inciter des nouvelles pistes de recherche sur la déviance liée à la propriété dont les travaux sont presque absents dans notre contexte.

Sur le plan pratique, il se dégage de ce papier un certain nombre de leviers sur lesquels les managers peuvent agir pour obtenir de leurs employés des comportements productifs. Ainsi, il est idoine pour les supérieurs de respecter les règles d'équité sur le plan de la promotion, de la reconnaissance tant financière que non-financière dans le traitement des employés. Ce qui permettra par conséquence de rendre ces derniers moins déviants. De plus, les dirigeants des PME devront laisser de côté leur rémunération arbitraire qui est susceptible de causer du ressentiment aux employés et partant la déviance dans leur comportement. Ces dirigeants doivent au contraire fonder les rétributions sur un traitement équitable pour tous les salariés afin de les motiver dans l'accomplissement de leurs tâches. Dans ce sens, on peut donc conseiller aux managers d'assurer à leurs employés à la fois l'équité interne, externe et individuelle pour mieux les retenir, les fidéliser, les mobiliser, etc. à fin d'atteindre les objectifs qu'ils se sont fixés. Les managers doivent même mettre sur pied des grilles d'évaluation objectives connues de tous et appliquées de manière impartiale à tous, pour garantir l'équité dans les PME. Enfin, les dirigeants peuvent enfin de compte opter pour le whistleblowing. Le whistleblowing ou « dénonciation éthique », signifie littéralement coup de sifflet éthique, il recouvre tous les modes de dénonciation par les salariés des pratiques délictueuses au sein de leur entreprise.

Toutefois, malgré ces contributions théoriques et pratiques, cette recherche présente quelques limites ce qui nous pousse à une prudence quant à l'interprétation et la généralisation de nos résultats. La principale limite de ce travail et liée à l'auto-évaluation par les salariés de leurs déviances, ce qui pourrait causer des biais de désirabilité sociale ou de référence (Duckworth et Yeager, 2015). Il serait intéressant de mettre en œuvre une méthode d'enquête permettant de recueillir les informations sur la déviance liée à la propriété des employés via leurs supérieurs ou leurs dirigeants pour garantir une plus forte objectivité. La seconde limite est associée à la non prise en compte de la satisfaction au travail des employés ce qui pourrait modifier l'effet de l'équité salariale sur la déviance liée à la propriété des salariés des PME.

En dépit des limites imputables à la sensibilité du sujet, à la taille de l'échantillon et à la zone géographique retenue. Ils appellent ainsi de nombreuses ouvertures, notamment en direction du questionnement sur le rôle modérateur de la satisfaction à l'égard du travail sur la déviance liée à la propriété des employés au sein des PME camerounaises, les études ultérieures pourraient également s'intéresser à la fois aux dirigeants et aux employés de cette petite dimension afin de recueillir leur avis sur cette forme de déviance.

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The corresponding author should mention the name and complete details of all co-authors during submission and in manuscript. We support addition, rearrangement, manipulation, and deletions in authors list till the early view publication of the journal. We expect that corresponding author will notify all co-authors of submission. We follow COPE guidelines for changes in authorship.

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**Appealing Decisions**

Unless specified in the notification, the Editorial Board's decision on publication of the paper is final and cannot be appealed before making the major change in the manuscript.

**Acknowledgments**

Contributors to the research other than authors credited should be mentioned in Acknowledgments. The source of funding for the research can be included. Suppliers of resources may be mentioned along with their addresses.

**Declaration of funding sources**

Global Journals is in partnership with various universities, laboratories, and other institutions worldwide in the research domain. Authors are requested to disclose their source of funding during every stage of their research, such as making analysis, performing laboratory operations, computing data, and using institutional resources, from writing an article to its submission. This will also help authors to get reimbursements by requesting an open access publication letter from Global Journals and submitting to the respective funding source.

## Preparing your Manuscript

Authors can submit papers and articles in an acceptable file format: MS Word (doc, docx), LaTeX (.tex, .zip or .rar including all of your files), Adobe PDF (.pdf), rich text format (.rtf), simple text document (.txt), Open Document Text (.odt), and Apple Pages (.pages). Our professional layout editors will format the entire paper according to our official guidelines. This is one of the highlights of publishing with Global Journals—authors should not be concerned about the formatting of their paper. Global Journals accepts articles and manuscripts in every major language, be it Spanish, Chinese, Japanese, Portuguese, Russian, French, German, Dutch, Italian, Greek, or any other national language, but the title, subtitle, and abstract should be in English. This will facilitate indexing and the pre-peer review process.

The following is the official style and template developed for publication of a research paper. Authors are not required to follow this style during the submission of the paper. It is just for reference purposes.

***Manuscript Style Instruction (Optional)***

- Microsoft Word Document Setting Instructions.
- Font type of all text should be Swis721 Lt BT.
- Page size: 8.27" x 11'", left margin: 0.65, right margin: 0.65, bottom margin: 0.75.
- Paper title should be in one column of font size 24.
- Author name in font size of 11 in one column.
- Abstract: font size 9 with the word "Abstract" in bold italics.
- Main text: font size 10 with two justified columns.
- Two columns with equal column width of 3.38 and spacing of 0.2.
- First character must be three lines drop-capped.
- The paragraph before spacing of 1 pt and after of 0 pt.
- Line spacing of 1 pt.
- Large images must be in one column.
- The names of first main headings (Heading 1) must be in Roman font, capital letters, and font size of 10.
- The names of second main headings (Heading 2) must not include numbers and must be in italics with a font size of 10.

***Structure and Format of Manuscript***

The recommended size of an original research paper is under 15,000 words and review papers under 7,000 words. Research articles should be less than 10,000 words. Research papers are usually longer than review papers. Review papers are reports of significant research (typically less than 7,000 words, including tables, figures, and references)

A research paper must include:

a) A title which should be relevant to the theme of the paper.
b) A summary, known as an abstract (less than 150 words), containing the major results and conclusions.
c) Up to 10 keywords that precisely identify the paper's subject, purpose, and focus.
d) An introduction, giving fundamental background objectives.
e) Resources and techniques with sufficient complete experimental details (wherever possible by reference) to permit repetition, sources of information must be given, and numerical methods must be specified by reference.
f) Results which should be presented concisely by well-designed tables and figures.
g) Suitable statistical data should also be given.
h) All data must have been gathered with attention to numerical detail in the planning stage.

Design has been recognized to be essential to experiments for a considerable time, and the editor has decided that any paper that appears not to have adequate numerical treatments of the data will be returned unrefereed.

i) Discussion should cover implications and consequences and not just recapitulate the results; conclusions should also be summarized.
j) There should be brief acknowledgments.
k) There ought to be references in the conventional format. Global Journals recommends APA format.

Authors should carefully consider the preparation of papers to ensure that they communicate effectively. Papers are much more likely to be accepted if they are carefully designed and laid out, contain few or no errors, are summarizing, and follow instructions. They will also be published with much fewer delays than those that require much technical and editorial correction.

The Editorial Board reserves the right to make literary corrections and suggestions to improve brevity.



## Format Structure

***It is necessary that authors take care in submitting a manuscript that is written in simple language and adheres to published guidelines.***

All manuscripts submitted to Global Journals should include:

**Title**

The title page must carry an informative title that reflects the content, a running title (less than 45 characters together with spaces), names of the authors and co-authors, and the place(s) where the work was carried out.

**Author details**

The full postal address of any related author(s) must be specified.

**Abstract**

The abstract is the foundation of the research paper. It should be clear and concise and must contain the objective of the paper and inferences drawn. It is advised to not include big mathematical equations or complicated jargon.

Many researchers searching for information online will use search engines such as Google, Yahoo or others. By optimizing your paper for search engines, you will amplify the chance of someone finding it. In turn, this will make it more likely to be viewed and cited in further works. Global Journals has compiled these guidelines to facilitate you to maximize the web-friendliness of the most public part of your paper.

**Keywords**

A major lynchpin of research work for the writing of research papers is the keyword search, which one will employ to find both library and internet resources. Up to eleven keywords or very brief phrases have to be given to help data retrieval, mining, and indexing.

One must be persistent and creative in using keywords. An effective keyword search requires a strategy: planning of a list of possible keywords and phrases to try.

Choice of the main keywords is the first tool of writing a research paper. Research paper writing is an art. Keyword search should be as strategic as possible.

One should start brainstorming lists of potential keywords before even beginning searching. Think about the most important concepts related to research work. Ask, “What words would a source have to include to be truly valuable in a research paper?” Then consider synonyms for the important words.

It may take the discovery of only one important paper to steer in the right keyword direction because, in most databases, the keywords under which a research paper is abstracted are listed with the paper.

**Numerical Methods**

Numerical methods used should be transparent and, where appropriate, supported by references.

**Abbreviations**

Authors must list all the abbreviations used in the paper at the end of the paper or in a separate table before using them.

**Formulas and equations**

Authors are advised to submit any mathematical equation using either MathJax, KaTeX, or LaTeX, or in a very high-quality image.

**Tables, Figures, and Figure Legends**

Tables: Tables should be cautiously designed, uncrowned, and include only essential data. Each must have an Arabic number, e.g., Table 4, a self-explanatory caption, and be on a separate sheet. Authors must submit tables in an editable format and not as images. References to these tables (if any) must be mentioned accurately.

**Figures**

Figures are supposed to be submitted as separate files. Always include a citation in the text for each figure using Arabic numbers, e.g., Fig. 4. Artwork must be submitted online in vector electronic form or by emailing it.

## Preparation of Eletronic Figures for Publication

Although low-quality images are sufficient for review purposes, print publication requires high-quality images to prevent the final product being blurred or fuzzy. Submit (possibly by e-mail) EPS (line art) or TIFF (halftone/ photographs) files only. MS PowerPoint and Word Graphics are unsuitable for printed pictures. Avoid using pixel-oriented software. Scans (TIFF only) should have a resolution of at least 350 dpi (halftone) or 700 to 1100 dpi (line drawings). Please give the data for figures in black and white or submit a Color Work Agreement form. EPS files must be saved with fonts embedded (and with a TIFF preview, if possible).

For scanned images, the scanning resolution at final image size ought to be as follows to ensure good reproduction: line art: >650 dpi; halftones (including gel photographs): >350 dpi; figures containing both halftone and line images: >650 dpi.

Color charges: Authors are advised to pay the full cost for the reproduction of their color artwork. Hence, please note that if there is color artwork in your manuscript when it is accepted for publication, we would require you to complete and return a Color Work Agreement form before your paper can be published. Also, you can email your editor to remove the color fee after acceptance of the paper.

## Tips for writing a good quality Management Research Paper

Techniques for writing a good quality management and business research paper:

***1. Choosing the topic:*** In most cases, the topic is selected by the interests of the author, but it can also be suggested by the guides. You can have several topics, and then judge which you are most comfortable with. This may be done by asking several questions of yourself, like "Will I be able to carry out a search in this area? Will I find all necessary resources to accomplish the search? Will I be able to find all information in this field area?" If the answer to this type of question is "yes," then you ought to choose that topic. In most cases, you may have to conduct surveys and visit several places. Also, you might have to do a lot of work to find all the rises and falls of the various data on that subject. Sometimes, detailed information plays a vital role, instead of short information. Evaluators are human: The first thing to remember is that evaluators are also human beings. They are not only meant for rejecting a paper. They are here to evaluate your paper. So present your best aspect.

***2. Think like evaluators:*** If you are in confusion or getting demotivated because your paper may not be accepted by the evaluators, then think, and try to evaluate your paper like an evaluator. Try to understand what an evaluator wants in your research paper, and you will automatically have your answer. Make blueprints of paper: The outline is the plan or framework that will help you to arrange your thoughts. It will make your paper logical. But remember that all points of your outline must be related to the topic you have chosen.

***3. Ask your guides:*** If you are having any difficulty with your research, then do not hesitate to share your difficulty with your guide (if you have one). They will surely help you out and resolve your doubts. If you can't clarify what exactly you require for your work, then ask your supervisor to help you with an alternative. He or she might also provide you with a list of essential readings.

***4. Use of computer is recommended:*** As you are doing research in the field of management and business then this point is quite obvious. Use right software: Always use good quality software packages. If you are not capable of judging good software, then you can lose the quality of your paper unknowingly. There are various programs available to help you which you can get through the internet.

***5. Use the internet for help:*** An excellent start for your paper is using Google. It is a wondrous search engine, where you can have your doubts resolved. You may also read some answers for the frequent question of how to write your research paper or find a model research paper. You can download books from the internet. If you have all the required books, place importance on reading, selecting, and analyzing the specified information. Then sketch out your research paper. Use big pictures: You may use encyclopedias like Wikipedia to get pictures with the best resolution. At Global Journals, you should strictly follow here.



***6. Bookmarks are useful:*** When you read any book or magazine, you generally use bookmarks, right? It is a good habit which helps to not lose your continuity. You should always use bookmarks while searching on the internet also, which will make your search easier.

***7. Revise what you wrote:*** When you write anything, always read it, summarize it, and then finalize it.

***8. Make every effort:*** Make every effort to mention what you are going to write in your paper. That means always have a good start. Try to mention everything in the introduction—what is the need for a particular research paper. Polish your work with good writing skills and always give an evaluator what he wants. Make backups: When you are going to do any important thing like making a research paper, you should always have backup copies of it either on your computer or on paper. This protects you from losing any portion of your important data.

***9. Produce good diagrams of your own:*** Always try to include good charts or diagrams in your paper to improve quality. Using several unnecessary diagrams will degrade the quality of your paper by creating a hodgepodge. So always try to include diagrams which were made by you to improve the readability of your paper. Use of direct quotes: When you do research relevant to literature, history, or current affairs, then use of quotes becomes essential, but if the study is relevant to science, use of quotes is not preferable.

***10. Use proper verb tense:*** Use proper verb tenses in your paper. Use past tense to present those events that have happened. Use present tense to indicate events that are going on. Use future tense to indicate events that will happen in the future. Use of wrong tenses will confuse the evaluator. Avoid sentences that are incomplete.

***11. Pick a good study spot:*** Always try to pick a spot for your research which is quiet. Not every spot is good for studying.

***12. Know what you know:*** Always try to know what you know by making objectives, otherwise you will be confused and unable to achieve your target.

***13. Use good grammar:*** Always use good grammar and words that will have a positive impact on the evaluator; use of good vocabulary does not mean using tough words which the evaluator has to find in a dictionary. Do not fragment sentences. Eliminate one-word sentences. Do not ever use a big word when a smaller one would suffice.
Verbs have to be in agreement with their subjects. In a research paper, do not start sentences with conjunctions or finish them with prepositions. When writing formally, it is advisable to never split an infinitive because someone will (wrongly) complain. Avoid clichés like a disease. Always shun irritating alliteration. Use language which is simple and straightforward. Put together a neat summary.

***14. Arrangement of information:*** Each section of the main body should start with an opening sentence, and there should be a changeover at the end of the section. Give only valid and powerful arguments for your topic. You may also maintain your arguments with records.

***15. Never start at the last minute:*** Always allow enough time for research work. Leaving everything to the last minute will degrade your paper and spoil your work.

***16. Multitasking in research is not good:*** Doing several things at the same time is a bad habit in the case of research activity. Research is an area where everything has a particular time slot. Divide your research work into parts, and do a particular part in a particular time slot.

***17. Never copy others' work:*** Never copy others' work and give it your name because if the evaluator has seen it anywhere, you will be in trouble. Take proper rest and food: No matter how many hours you spend on your research activity, if you are not taking care of your health, then all your efforts will have been in vain. For quality research, take proper rest and food.

***18. Go to seminars:*** Attend seminars if the topic is relevant to your research area. Utilize all your resources.

***19. Refresh your mind after intervals:*** Try to give your mind a rest by listening to soft music or sleeping in intervals. This will also improve your memory. Acquire colleagues: Always try to acquire colleagues. No matter how sharp you are, if you acquire colleagues, they can give you ideas which will be helpful to your research.

***20. Think technically:*** Always think technically. If anything happens, search for its reasons, benefits, and demerits. Think and then print: When you go to print your paper, check that tables are not split, headings are not detached from their descriptions, and page sequence is maintained.

***21. Adding unnecessary information:*** Do not add unnecessary information like "I have used MS Excel to draw graphs." Irrelevant and inappropriate material is superfluous. Foreign terminology and phrases are not apropos. One should never take a broad view. Analogy is like feathers on a snake. Use words properly, regardless of how others use them. Remove quotations. Puns are for kids, not grunt readers. Never oversimplify: When adding material to your research paper, never go for oversimplification; this will definitely irritate the evaluator. Be specific. Never use rhythmic redundancies. Contractions shouldn't be used in a research paper. Comparisons are as terrible as clichés. Give up ampersands, abbreviations, and so on. Remove commas that are not necessary. Parenthetical words should be between brackets or commas. Understatement is always the best way to put forward earth-shaking thoughts. Give a detailed literary review.

***22. Report concluded results:*** Use concluded results. From raw data, filter the results, and then conclude your studies based on measurements and observations taken. An appropriate number of decimal places should be used. Parenthetical remarks are prohibited here. Proofread carefully at the final stage. At the end, give an outline to your arguments. Spot perspectives of further study of the subject. Justify your conclusion at the bottom sufficiently, which will probably include examples.

***23. Upon conclusion:*** Once you have concluded your research, the next most important step is to present your findings. Presentation is extremely important as it is the definite medium though which your research is going to be in print for the rest of the crowd. Care should be taken to categorize your thoughts well and present them in a logical and neat manner. A good quality research paper format is essential because it serves to highlight your research paper and bring to light all necessary aspects of your research.

## Informal Guidelines of Research Paper Writing

***Key points to remember:***

- Submit all work in its final form.
- Write your paper in the form which is presented in the guidelines using the template.
- Please note the criteria peer reviewers will use for grading the final paper.

**Final points:**

One purpose of organizing a research paper is to let people interpret your efforts selectively. The journal requires the following sections, submitted in the order listed, with each section starting on a new page:

*The introduction:* This will be compiled from reference matter and reflect the design processes or outline of basis that directed you to make a study. As you carry out the process of study, the method and process section will be constructed like that. The results segment will show related statistics in nearly sequential order and direct reviewers to similar intellectual paths throughout the data that you gathered to carry out your study.

**The discussion section:**

This will provide understanding of the data and projections as to the implications of the results. The use of good quality references throughout the paper will give the effort trustworthiness by representing an alertness to prior workings.

Writing a research paper is not an easy job, no matter how trouble-free the actual research or concept. Practice, excellent preparation, and controlled record-keeping are the only means to make straightforward progression.

**General style:**

Specific editorial column necessities for compliance of a manuscript will always take over from directions in these general guidelines.

**To make a paper clear:** Adhere to recommended page limits.

*Mistakes to avoid:*

- Insertion of a title at the foot of a page with subsequent text on the next page.
- Separating a table, chart, or figure—confine each to a single page.
- Submitting a manuscript with pages out of sequence.
- In every section of your document, use standard writing style, including articles ("a" and "the").
- Keep paying attention to the topic of the paper.



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- Use paragraphs to split each significant point (excluding the abstract).
- Align the primary line of each section.
- Present your points in sound order.
- Use present tense to report well-accepted matters.
- Use past tense to describe specific results.
- Do not use familiar wording; don't address the reviewer directly. Don't use slang or superlatives.
- Avoid use of extra pictures—include only those figures essential to presenting results.

**Title page:**

Choose a revealing title. It should be short and include the name(s) and address(es) of all authors. It should not have acronyms or abbreviations or exceed two printed lines.

**Abstract:** This summary should be two hundred words or less. It should clearly and briefly explain the key findings reported in the manuscript and must have precise statistics. It should not have acronyms or abbreviations. It should be logical in itself. Do not cite references at this point.

An abstract is a brief, distinct paragraph summary of finished work or work in development. In a minute or less, a reviewer can be taught the foundation behind the study, common approaches to the problem, relevant results, and significant conclusions or new questions.

Write your summary when your paper is completed because how can you write the summary of anything which is not yet written? Wealth of terminology is very essential in abstract. Use comprehensive sentences, and do not sacrifice readability for brevity; you can maintain it succinctly by phrasing sentences so that they provide more than a lone rationale. The author can at this moment go straight to shortening the outcome. Sum up the study with the subsequent elements in any summary. Try to limit the initial two items to no more than one line each.

*Reason for writing the article—theory, overall issue, purpose.*

- Fundamental goal.
- To-the-point depiction of the research.
- Consequences, including definite statistics—if the consequences are quantitative in nature, account for this; results of any numerical analysis should be reported. Significant conclusions or questions that emerge from the research.

**Approach:**

- Single section and succinct.
- An outline of the job done is always written in past tense.
- Concentrate on shortening results—limit background information to a verdict or two.
- Exact spelling, clarity of sentences and phrases, and appropriate reporting of quantities (proper units, important statistics) are just as significant in an abstract as they are anywhere else.

**Introduction:**

The introduction should "introduce" the manuscript. The reviewer should be presented with sufficient background information to be capable of comprehending and calculating the purpose of your study without having to refer to other works. The basis for the study should be offered. Give the most important references, but avoid making a comprehensive appraisal of the topic. Describe the problem visibly. If the problem is not acknowledged in a logical, reasonable way, the reviewer will give no attention to your results. Speak in common terms about techniques used to explain the problem, if needed, but do not present any particulars about the protocols here.

*The following approach can create a valuable beginning:*

- Explain the value (significance) of the study.
- Defend the model—why did you employ this particular system or method? What is its compensation? Remark upon its appropriateness from an abstract point of view as well as pointing out sensible reasons for using it.
- Present a justification. State your particular theory(-ies) or aim(s), and describe the logic that led you to choose them.
- Briefly explain the study's tentative purpose and how it meets the declared objectives.

**Approach:**

Use past tense except for when referring to recognized facts. After all, the manuscript will be submitted after the entire job is done. Sort out your thoughts; manufacture one key point for every section. If you make the four points listed above, you will need at least four paragraphs. Present surrounding information only when it is necessary to support a situation. The reviewer does not desire to read everything you know about a topic. Shape the theory specifically—do not take a broad view.

As always, give awareness to spelling, simplicity, and correctness of sentences and phrases.

**Procedures (methods and materials):**

This part is supposed to be the easiest to carve if you have good skills. A soundly written procedures segment allows a capable scientist to replicate your results. Present precise information about your supplies. The suppliers and clarity of reagents can be helpful bits of information. Present methods in sequential order, but linked methodologies can be grouped as a segment. Be concise when relating the protocols. Attempt to give the least amount of information that would permit another capable scientist to replicate your outcome, but be cautious that vital information is integrated. The use of subheadings is suggested and ought to be synchronized with the results section.

When a technique is used that has been well-described in another section, mention the specific item describing the way, but draw the basic principle while stating the situation. The purpose is to show all particular resources and broad procedures so that another person may use some or all of the methods in one more study or referee the scientific value of your work. It is not to be a step-by-step report of the whole thing you did, nor is a methods section a set of orders.

**Materials:**

*Materials may be reported in part of a section or else they may be recognized along with your measures.*

**Methods:**

- Report the method and not the particulars of each process that engaged the same methodology.
- Describe the method entirely.
- To be succinct, present methods under headings dedicated to specific dealings or groups of measures.
- Simplify—detail how procedures were completed, not how they were performed on a particular day.
- If well-known procedures were used, account for the procedure by name, possibly with a reference, and that's all.

**Approach:**

It is embarrassing to use vigorous voice when documenting methods without using first person, which would focus the reviewer's interest on the researcher rather than the job. As a result, when writing up the methods, most authors use third person passive voice.

Use standard style in this and every other part of the paper—avoid familiar lists, and use full sentences.

**What to keep away from:**

- Resources and methods are not a set of information.
- Skip all descriptive information and surroundings—save it for the argument.
- Leave out information that is immaterial to a third party.

**Results:**

The principle of a results segment is to present and demonstrate your conclusion. Create this part as entirely objective details of the outcome, and save all understanding for the discussion.

The page length of this segment is set by the sum and types of data to be reported. Use statistics and tables, if suitable, to present consequences most efficiently.

You must clearly differentiate material which would usually be incorporated in a study editorial from any unprocessed data or additional appendix matter that would not be available. In fact, such matters should not be submitted at all except if requested by the instructor.



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**Content:**

- Sum up your conclusions in text and demonstrate them, if suitable, with figures and tables.
- In the manuscript, explain each of your consequences, and point the reader to remarks that are most appropriate.
- Present a background, such as by describing the question that was addressed by creation of an exacting study.
- Explain results of control experiments and give remarks that are not accessible in a prescribed figure or table, if appropriate.
- Examine your data, then prepare the analyzed (transformed) data in the form of a figure (graph), table, or manuscript.

**What to stay away from:**

- Do not discuss or infer your outcome, report surrounding information, or try to explain anything.
- Do not include raw data or intermediate calculations in a research manuscript.
- Do not present similar data more than once.
- A manuscript should complement any figures or tables, not duplicate information.
- Never confuse figures with tables—there is a difference.

**Approach:**

As always, use past tense when you submit your results, and put the whole thing in a reasonable order.

Put figures and tables, appropriately numbered, in order at the end of the report.

If you desire, you may place your figures and tables properly within the text of your results section.

**Figures and tables:**

If you put figures and tables at the end of some details, make certain that they are visibly distinguished from any attached appendix materials, such as raw facts. Whatever the position, each table must be titled, numbered one after the other, and include a heading. All figures and tables must be divided from the text.

**Discussion:**

The discussion is expected to be the trickiest segment to write. A lot of papers submitted to the journal are discarded based on problems with the discussion. There is no rule for how long an argument should be.

Position your understanding of the outcome visibly to lead the reviewer through your conclusions, and then finish the paper with a summing up of the implications of the study. The purpose here is to offer an understanding of your results and support all of your conclusions, using facts from your research and generally accepted information, if suitable. The implication of results should be fully described.

Infer your data in the conversation in suitable depth. This means that when you clarify an observable fact, you must explain mechanisms that may account for the observation. If your results vary from your prospect, make clear why that may have happened. If your results agree, then explain the theory that the proof supported. It is never suitable to just state that the data approved the prospect, and let it drop at that. Make a decision as to whether each premise is supported or discarded or if you cannot make a conclusion with assurance. Do not just dismiss a study or part of a study as "uncertain."

Research papers are not acknowledged if the work is imperfect. Draw what conclusions you can based upon the results that you have, and take care of the study as a finished work.

- You may propose future guidelines, such as how an experiment might be personalized to accomplish a new idea.
- Give details of all of your remarks as much as possible, focusing on mechanisms.
- Make a decision as to whether the tentative design sufficiently addressed the theory and whether or not it was correctly restricted. Try to present substitute explanations if they are sensible alternatives.
- One piece of research will not counter an overall question, so maintain the large picture in mind. Where do you go next? The best studies unlock new avenues of study. What questions remain?
- Recommendations for detailed papers will offer supplementary suggestions.

**Approach:**

When you refer to information, differentiate data generated by your own studies from other available information. Present work done by specific persons (including you) in past tense.

Describe generally acknowledged facts and main beliefs in present tense.

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Administration Rules to Be Strictly Followed before Submitting Your Research Paper to Global Journals Inc.

*Please read the following rules and regulations carefully before submitting your research paper to Global Journals Inc. to avoid rejection*.

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## Criterion for Grading a Research Paper (Compilation) by Global Journals

**Please note that following table is only a Grading of "Paper Compilation" and not on "Performed/Stated Research" whose grading solely depends on Individual Assigned Peer Reviewer and Editorial Board Member. These can be available only on request and after decision of Paper. This report will be the property of Global Journals.**

| Topics | Grades | | |
|---|---|---|---|
| | **A-B** | **C-D** | **E-F** |
| ***Abstract*** | Clear and concise with appropriate content, Correct format. 200 words or below | Unclear summary and no specific data, Incorrect form<br><br>Above 200 words | No specific data with ambiguous information<br><br>Above 250 words |
| ***Introduction*** | Containing all background details with clear goal and appropriate details, flow specification, no grammar and spelling mistake, well organized sentence and paragraph, reference cited | Unclear and confusing data, appropriate format, grammar and spelling errors with unorganized matter | Out of place depth and content, hazy format |
| ***Methods and Procedures*** | Clear and to the point with well arranged paragraph, precision and accuracy of facts and figures, well organized subheads | Difficult to comprehend with embarrassed text, too much explanation but completed | Incorrect and unorganized structure with hazy meaning |
| ***Result*** | Well organized, Clear and specific, Correct units with precision, correct data, well structuring of paragraph, no grammar and spelling mistake | Complete and embarrassed text, difficult to comprehend | Irregular format with wrong facts and figures |
| ***Discussion*** | Well organized, meaningful specification, sound conclusion, logical and concise explanation, highly structured paragraph reference cited | Wordy, unclear conclusion, spurious | Conclusion is not cited, unorganized, difficult to comprehend |
| ***References*** | Complete and correct format, well organized | Beside the point, Incomplete | Wrong format and structuring |

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