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# APPLICATION OF NET PRESENT VALUE ANALYSIS TO SHORT-TERM PERSONAL FINANCIAL DECISIONS

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**Abstract.** Personal finance and financial literacy play an important role in promoting individual financial well-being and sustainable socio-economic development. In modern conditions, individuals regularly make financial decisions related to education, consumption, savings, investments, borrowing, and other aspects of personal financial management. Improving the quality of such decisions requires not only financial knowledge but also the application of quantitative methods for evaluating their economic efficiency.

The purpose of this study is to examine the applicability of the Net Present Value (NPV) method in personal finance and to evaluate its usefulness as a tool for supporting financial decision-making by individuals and households. The study is based on a review of academic literature on personal finance, financial literacy, and investment appraisal methods, as well as on the analysis of several practical examples reflecting typical personal financial decisions.

The findings demonstrate that the NPV method can be effectively applied to a variety of personal financial decisions, including investments in education, professional development, digital services, and income-generating assets. Particular attention is paid to the influence of discount rates and future cash flow estimates on calculation results. The study shows that the Net Present Value method contributes to more informed financial planning and supports rational financial decision-making.

The results confirm that the application of the NPV method may serve as an effective tool for improving financial literacy and enhancing personal financial management practices.

**Keywords:** personal finance, financial literacy, Net Present Value (NPV), investment appraisal, financial decision-making, discounted cash flow analysis, time value of money.

**Аннотация.** Персональные финансы и финансовая грамотность играют важную роль в обеспечении финансового благополучия населения и устойчивого социально-экономического развития. В современных условиях люди регулярно принимают финансовые решения, связанные с образованием, потреблением, сбережениями, инвестициями, заимствованиями и другими аспектами управления личными финансами. Повышение качества таких решений требует не только финансовых знаний, но и применения количественных методов оценки их экономической эффективности.

Целью исследования является анализ возможностей применения метода чистой приведённой стоимости (Net Present Value, NPV) в сфере персональных финансов и оценка его полезности в качестве инструмента поддержки финансовых решений физических лиц и домашних хозяйств. Исследование основано на анализе научной литературы по вопросам персональных финансов, финансовой грамотности и методов оценки инвестиций, а также на рассмотрении ряда практических примеров, отражающих типичные финансовые решения частных лиц.

Результаты исследования показывают, что метод NPV может эффективно применяться для оценки различных персональных финансовых решений, включая инвестиции в образование, профессиональное развитие, цифровые сервисы и приобретение активов, способных приносить доход. Особое внимание уделено влиянию ставки дисконтирования и оценки будущих денежных потоков на результаты расчётов. Установлено, что метод чистой приведённой стоимости способствует более обоснованному финансовому планированию и принятию рациональных финансовых решений.

Полученные результаты подтверждают, что использование метода NPV может рассматриваться как эффективный инструмент повышения финансовой грамотности и совершенствования практики управления персональными финансами.

**Ключевые слова:** персональные финансы, финансовая грамотность, чистая приведённая стоимость (NPV), оценка инвестиций, принятие финансовых решений, дисконтирование денежных потоков, временная стоимость денег.

## INTRODUCTION

Personal finance and financial literacy are increasingly recognized as important determinants of individual financial well-being, financial security, and long-term economic stability. In modern society, individuals and households are required to make numerous financial decisions related to education, consumption, savings, investments, borrowing, retirement planning, and other aspects of financial management. The quality of these decisions significantly influences not only personal financial outcomes but also broader economic and social development. Therefore, effective personal financial management requires both financial knowledge and the ability to apply appropriate analytical tools when evaluating alternative financial opportunities.

Many personal financial decisions involve current expenditures undertaken in anticipation of future benefits. Consequently, quantitative methods play an important role in assessing the economic attractiveness of alternative courses of action. Among the various investment appraisal techniques used in finance, the Net Present Value (NPV) method occupies a prominent position due to its ability to incorporate the time value of money into the evaluation process. By comparing the present value of expected future cash flows with the initial investment, NPV provides a comprehensive framework for assessing whether a financial decision is likely to create or reduce economic value.

Although the Net Present Value method has been extensively applied in corporate finance, capital budgeting, and project evaluation, its potential use in personal finance has received considerably less attention in academic literature. Nevertheless, many personal financial decisions, including investments in education, professional development, digital services, energy-efficiency improvements, and income-generating assets, involve future cash flows and can therefore be evaluated using the principles of discounted cash flow analysis. This suggests that NPV may serve as a useful tool for supporting informed and rational financial decision-making at the individual and household levels.

The purpose of this study is to examine the applicability of the Net Present Value method in personal finance and to evaluate its usefulness as a tool for supporting financial decision-making by individuals and households.

1. To achieve this objective, the following research tasks are formulated:
2. To examine the theoretical foundations of personal finance and the role of quantitative methods in personal financial decision-making.
3. To analyze the concept, principles, and interpretation of the Net Present Value method as an investment appraisal technique.
4. To identify the advantages and limitations of the NPV method when applied to personal finance.
5. To demonstrate the practical application of the NPV method through illustrative examples of short-term personal financial decisions.
6. To evaluate the influence of changes in discount rates and expected cash flows on NPV calculations and investment outcomes.
7. To assess the usefulness of the Net Present Value method as a tool for improving the quality of personal financial decision-making.

It should be noted that the illustrative examples presented in this study are limited to a one-year time horizon. This simplification was adopted to facilitate the interpretation of the results and to focus attention on the fundamental principles of the Net Present Value method.

## LITERATURE REVIEW

The development of personal finance and the formation of financial literacy, knowledge, skills, and competencies are essential factors contributing to the economic prosperity and sustainable development of a country. Various dimensions of personal finance have been extensively studied by numerous researchers, including Almeida-Blacio J., Amirtha R., Anandhi E. D., Velmurugan G., Ellegren Apuela J. A., Gaitán-Ángulo M., Gómez-Cacedo M., Lambertine E., Perez J., Tellez Bedoya C. A., Serrano V., Igu J., Zakaria S., Bar-Or Y. D., Mufidah A., Istifadah I., Awaliyah I. N., Özdemir B., Prakoso T., Apriliani R., Zaimovic A., Torlakovic A., Arnaut-Berilo A., Zaimovic T., Dedović L., and Alimanovic M. [1–10].

Personal finance can be consistently conceptualized as a critical life skill that includes the knowledge and abilities required for informed financial decision-making. Its key components include financial literacy, planning, budgeting, saving, and debt management. The importance of personal finance is reflected in both individual and societal benefits. At the individual level, financial literacy enhances well-being, reduces financial stress, improves decision-making, and increases financial stability. Financial education has a positive impact on planned savings, responsible credit management, and self-efficacy. Individuals who consistently follow budgets generally demonstrate better financial health and lower debt levels.

At the societal level, the development of personal finance contributes to economic growth, sustainable development, economic stability, and the reduction of economic inequalities. However, several significant challenges

remain, including the lack of standardized curricula, difficulties in translating financial knowledge into sustained behavioral change, the digital divide affecting access to financial education, and research gaps related to digital finance, long-term effects, and the determinants of gender disparities.

Effective personal financial management requires the application of quantitative methods and mathematical calculations. Individuals regularly face financial decisions involving the evaluation of costs, benefits, risks, and alternative courses of action. Consequently, a basic understanding of mathematics, statistics, and financial calculations is essential for assessing investment opportunities, comparing financial products, evaluating borrowing and saving decisions, and estimating future financial outcomes. The ability to apply quantitative techniques enhances the quality of financial decision-making and contributes to the more efficient management of personal financial resources.

Among the various quantitative methods used in finance, investment appraisal techniques play a particularly important role in assessing the economic attractiveness of financial decisions and supporting rational resource allocation. Although the Net Present Value method has been extensively discussed in the corporate finance and investment appraisal literature, its application in the field of personal finance has received considerably less attention. Existing educational sources primarily focus on business investment decisions, capital budgeting, and project evaluation in corporate finance, business finance, and financial management [11–21].

Nevertheless, many personal finance activities, including educational investments, housing decisions, and digital service subscriptions, involve future costs and benefits that can be evaluated using the principles of discounted cash flow analysis. This gap in the literature highlights the need for further research on the applicability of the Net Present Value method in personal financial decision-making.

## RESEARCH METHODOLOGY

Net Present Value (NPV) is one of the most widely used methods of investment appraisal in finance and financial management. This method evaluates the profitability of an investment by comparing the present value of expected future cash inflows with the initial investment cost. Unlike simpler indicators, such as the Payback Period, NPV takes into account the time value of money, recognizing that a sum of money received today is worth more than the same amount received in the future.

The methodological framework of this study combines a literature review with illustrative numerical analysis. First, academic publications on personal finance, financial literacy, and investment appraisal techniques were reviewed in order to examine the theoretical foundations of the Net Present Value method. Second, a series of hypothetical personal finance scenarios was developed and analyzed using NPV calculations. These examples were designed to demonstrate the practical applicability of the method under different assumptions regarding future cash flows and discount rates.

Net Present Value represents the difference between the present value of future cash flows generated by an investment and the amount initially invested. The method is based on discounting future cash flows to their present value using a discount rate that reflects the opportunity cost of capital, expected return, inflation, or investment risk.

$$NPV = \sum_{t=1}^n \frac{CF_t}{(1+r)^t} - I_0, \quad (1)$$

where:

$I_0$  (initial investment) is the amount of financial resources invested at the beginning of the project or financial decision. In personal finance, the initial investment may represent funds allocated to educational programs, energy-efficiency improvements, residential property enhancements, professional development activities, business start-up initiatives, or other expenditures expected to generate future economic benefits;

$CF$  (annual cash inflow or annual savings generated by the investment) is the net annual financial benefit received as a result of the investment. This benefit may arise from additional income, cost reductions, or a combination of both. In the context of personal finance, examples include higher earnings resulting from educational investments, savings on utility expenses achieved through energy-efficient technologies, lower transportation costs, or income generated by revenue-producing assets;

$r$  (discount rate) is the rate used to convert future cash flows into their present value. It reflects the time value of money and may incorporate factors such as expected investment return, inflation, opportunity cost of capital, and investment risk. In personal finance, the discount rate may represent the return that could be earned from an alternative investment, the interest rate on a savings deposit, the inflation rate, or another benchmark used by an individual to evaluate future financial benefits;

$t$  (time period) denotes the period in which a particular cash flow occurs. It reflects the timing of future financial

benefits or savings and is typically measured in years when evaluating personal financial investments. It should be noted that the value of  $t$  in the numerator and the denominator must correspond to the same time period. In other words, each cash flow ( $CF_t$ ) is discounted using the discount factor associated with the period in which that cash flow occurs. This ensures that every future cash flow is converted to its present value accurately and consistently. For example, a cash flow received in the third year ( $CF_3$ ) must be discounted by  $(1+r)^3$ , while a cash flow received in the fourth year ( $CF_4$ ) must be discounted by  $(1+r)^4$ ;

$n$  (number of periods) is the total number of periods over which cash flows are expected to occur and are included in the Net Present Value calculation. It defines the time horizon of the investment analysis.

The interpretation of Net Present Value (NPV) provides important information about the financial attractiveness of an investment or financial decision.

If NPV is positive ( $NPV > 0$ ), the present value of future cash inflows exceeds the initial investment. In this case, the investment is expected to generate a net economic benefit and create value for the investor. A positive NPV indicates that the anticipated return on the investment is greater than the required rate of return reflected in the discount rate. Therefore, such an investment may be considered financially attractive and suitable for implementation. In the context of personal finance, examples may include educational programs that lead to higher future earnings, energy-efficiency improvements that generate substantial cost savings, or investments that provide returns exceeding alternative investment opportunities.

If NPV equals zero ( $NPV = 0$ ), the present value of future cash inflows is exactly equal to the initial investment. Under these circumstances, the investment is expected to recover all invested funds and earn a return equivalent to the discount rate, but it does not create additional economic value. Such a result represents a break-even situation in present value terms. Although the investment does not increase financial wealth, it may still be acceptable if it provides non-financial benefits, improves quality of life, reduces risk, or supports other personal objectives.

If NPV is negative ( $NPV < 0$ ), the present value of future cash inflows is lower than the amount initially invested. This indicates that the investment is expected to generate returns below the required rate of return and may reduce the investor's wealth. From a financial perspective, a negative NPV suggests that the project or decision is not economically justified and should generally be rejected in favor of more profitable alternatives. In personal finance, a negative NPV may indicate that the expected financial benefits of an investment are insufficient to compensate for its costs when the time value of money is taken into account.

Although the NPV method is traditionally applied in corporate finance and capital budgeting, it can also be used in personal finance. Individuals may apply NPV when evaluating educational investments, energy-efficiency improvements, housing decisions, private lending arrangements, business start-ups, or other financial projects involving future costs and benefits. By incorporating the time value of money into the analysis, NPV provides a more comprehensive assessment of investment efficiency than methods based solely on cash flow recovery.

Despite its widespread application in corporate finance, the potential use of the Net Present Value method in personal financial decision-making remains relatively underexplored in the literature. However, many personal financial decisions involve long-term costs and benefits, making NPV a potentially valuable tool for individuals and households.

## ANALYSIS AND RESULTS

This section examines the applicability of the Net Present Value method in personal finance by considering several investment decisions commonly faced by individuals.

Several illustrative one-year examples are examined to demonstrate the practical usefulness of the Net Present Value method in personal finance. The examples are intentionally simplified in order to facilitate understanding of the calculation procedure and the interpretation of NPV results under different financial circumstances.

**Example 1. Purchase of a Laptop for Freelance Work.** An individual purchases a laptop for USD 1,200 to perform freelance work. The laptop is expected to generate additional income of USD 1,350 during the following year. The discount rate is supposed to be 10%. Let's calculate the NPV using the Formula 1:

$$NPV = \frac{CF_1}{(1+r)^1} - I_0 = \frac{1,350}{(1+0,1)^1} - 1,200 = 1,227,27 - 1,200 = 27,27 \text{ USD}$$

**Interpretation of the result.** The positive Net Present Value indicates that the discounted value of future cash inflows exceeds the initial investment. Therefore, the purchase of the laptop can be regarded as a financially sound decision that is expected to contribute positively to the individual's economic well-being.

**Example 2. Purchase of a Language Learning Subscription.** An individual purchases a one-year subscription to an online language learning platform for USD 200. The improved language skills are expected to generate additional income of USD 220 during the following year. The discount rate is assumed to be 10%. The Net Present Value can

be calculated as follows:

$$NPV = \frac{CF_1}{(1+r)^1} - I_0 = \frac{220}{(1+0,1)^1} - 200 = 200 - 200 = 0 \text{ USD}$$

Interpretation of the result. The Net Present Value is equal to zero, indicating that the present value of the expected future benefits is exactly equal to the initial investment. In this situation, the investment neither creates nor destroys economic value. From a financial perspective, the individual is indifferent between undertaking and not undertaking the investment, as the expected return is equal to the required rate of return represented by the discount rate. However, the investment may still be considered worthwhile if it provides additional non-financial benefits, such as improved career opportunities, personal development, or enhanced communication skills.

Example 3. Premium Smartphone. An individual purchases a premium smartphone for USD 1,500. The expected productivity benefits during the year are valued at USD 1,400. The discount rate is 10%. The Net Present Value is to be calculated as follows:

$$NPV = \frac{CF_1}{(1+r)^1} - I_0 = \frac{1,400}{(1+0,1)^1} - 1,500 = 1,272.73 - 1500 = -227.27 \text{ USD}$$

Interpretation of the result. The negative Net Present Value indicates that the present value of the expected future benefits is lower than the initial cost of the smartphone. In other words, the anticipated productivity gains generated by the device are insufficient to compensate for the amount invested when the time value of money is taken into account. As a result, the investment is expected to reduce rather than increase the individual's economic value. From a purely financial perspective, purchasing the premium smartphone cannot be considered an economically justified decision, as alternative uses of the same financial resources could potentially generate higher returns. Therefore, the investment would generally be rejected based on the NPV criterion. Nevertheless, the purchase may still be undertaken if the individual attaches significant non-financial value to the smartphone, such as personal satisfaction, convenience, social status, or access to features that are not reflected in the financial analysis.

The discount rate represents one of the most important determinants of Net Present Value. Since NPV is calculated by discounting future cash flows to their present value, any change in the discount rate directly affects the outcome of the analysis. Higher discount rates reduce the present value of future benefits and therefore decrease NPV, whereas lower discount rates increase the present value of future cash flows and lead to a higher NPV. Consequently, the same investment may be evaluated as financially attractive, neutral, or unattractive depending on the discount rate applied. This highlights the importance of selecting a discount rate that appropriately reflects opportunity costs, inflation expectations, and investment risk.

Example 4. Investment in an Online Course. An individual enrolls in an online data analytics course costing USD 500. Upon completion of the course, the individual expects to earn an additional USD 600 within one year through freelance projects and improved employment opportunities. To demonstrate the sensitivity of the Net Present Value to changes in the discount rate, four alternative scenarios are considered, each employing a different discount rate.

Scenario 1. Discount Rate = 10%.

$$NPV = \frac{CF_1}{(1+r)^1} - I_0 = \frac{600}{(1+0,1)^1} - 500 = 545.45 - 500 = 45.45 \text{ USD}$$

Scenario 2. Discount Rate = 6%.

$$NPV = \frac{CF_1}{(1+r)^1} - I_0 = \frac{600}{(1+0,06)^1} - 500 = 566.04 - 500 = 66.04 \text{ USD}$$

Scenario 3. Discount Rate = 20%.

$$NPV = \frac{CF_1}{(1+r)^1} - I_0 = \frac{600}{(1+0,2)^1} - 500 = 500 - 500 = 0 \text{ USD}$$

Scenario 4. Discount Rate = 25%.

$$NPV = \frac{CF_1}{(1+r)^1} - I_0 = \frac{600}{(1+0,25)^1} - 500 = 480 - 500 = -20 \text{ USD}$$

Interpretation of the results. The calculations demonstrate that the Net Present Value is highly sensitive to changes in the discount rate. When the discount rate decreases from 10% to 6%, the NPV increases from USD 45.45 to USD 66.04. This occurs because a lower discount rate increases the present value of future cash inflows, making the investment more financially attractive.

At a discount rate of 10%, the NPV remains positive (USD 45.45), indicating that the expected benefits exceed the initial investment and that the online course is financially worthwhile. When the discount rate rises to 20%, the NPV falls to zero, suggesting that the present value of future benefits is exactly equal to the initial cost of the investment. In this case, the individual is financially indifferent between undertaking and not undertaking the investment, as the expected return is equal to the required rate of return.

A further increase in the discount rate to 25% results in a negative NPV of USD 20. This indicates that the present value of the expected future income is insufficient to recover the initial investment when the higher required rate of return is taken into account. Consequently, the investment would generally be considered financially unattractive and would be rejected based on the NPV criterion.

The results of four calculations illustrate the critical role of the discount rate in investment appraisal. The same investment project may be evaluated as attractive, neutral, or unattractive depending on the discount rate applied. Therefore, the selection of an appropriate discount rate is essential for obtaining reliable and meaningful NPV estimates.

Another important factor affecting the accuracy and reliability of Net Present Value calculations is the proper estimation of future cash flows. Since NPV is based on expected future benefits, any errors in forecasting future income, savings, or other financial gains may significantly influence the results of the analysis. Overestimating future cash inflows can lead to an artificially high NPV and may result in the acceptance of investments that are not financially justified. Conversely, underestimating future benefits may reduce NPV and cause potentially valuable investment opportunities to be rejected.

In the context of personal finance, estimating future cash flows can be particularly challenging because many financial decisions involve uncertainty. For example, an individual investing in an educational program may not know the exact increase in future earnings, while expected savings from energy-efficiency improvements may depend on future energy prices and consumption patterns. Similarly, projected income from freelance activities, private lending arrangements, or investment assets may differ from actual outcomes due to changing economic conditions and personal circumstances.

Therefore, when applying the Net Present Value method, individuals should make realistic and well-informed assumptions regarding future cash flows. Whenever possible, estimates should be based on historical data, market information, expert opinions, or conservative forecasts. Conducting scenario or sensitivity analysis may also help assess how changes in expected cash flows affect the investment decision and improve the reliability of the evaluation process. The potential consequences of inaccurate cash flow forecasts can be demonstrated through the following example.

Example 5. Purchase of a Smallpdf Pro Subscription. An individual purchases a one-year Smallpdf Pro subscription for USD 90. The discount rate is 10%. Depending on the individual's subjective assessment, actual benefits obtained from the subscription, three different outcomes are possible.

Scenario A: Positive NPV ( $NPV > 0$ ). Suppose the subscription generates annual savings of USD 150 through reduced spending on document conversion, editing, and electronic signature services. The NPV is to be calculated as follows:

$$NPV = \frac{CF_1}{(1+r)^1} - I_0 = \frac{150}{(1+0,1)^1} - 90 = 136,36 - 90 = 46,36 \text{ USD}$$

Scenario B: Zero NPV ( $NPV = 0$ ). Suppose the subscription generates annual savings of USD 99.

$$NPV = \frac{CF_1}{(1+r)^1} - I_0 = \frac{99}{(1+0,1)^1} - 90 = 90 - 90 = 0 \text{ USD}$$

Scenario C: Negative NPV ( $NPV < 0$ ). Suppose the subscription generates annual savings of USD 70.

$$NPV = \frac{CF_1}{(1+r)^1} - I_0 = \frac{70}{(1+0,1)^1} - 90 = 63,64 - 90 = -26,36 \text{ USD}$$

Interpretation of the Results. The three scenarios demonstrate how differences in expected future benefits can significantly affect the Net Present Value of the same investment. In Scenario A, the subscription generates annual savings of USD 150, resulting in a positive NPV of USD 46.36. This indicates that the present value of the expected savings exceeds the cost of the subscription, making the investment financially attractive.

In Scenario B, annual savings amount to USD 99, producing an NPV equal to zero. In this case, the present value of future benefits exactly matches the initial investment, meaning that the individual neither gains nor loses value from a financial perspective. In Scenario C, annual savings are only USD 70, resulting in a negative NPV of USD 26.36. This indicates that the expected benefits are insufficient to recover the initial cost of the subscription when the time value of money is taken into account.

Overall, the example demonstrates that the same financial decision may lead to positive, neutral, or negative outcomes depending on the magnitude of expected future savings. The results highlight the importance of accurately estimating future cash flows when applying the Net Present Value method, as different assumptions regarding future benefits can substantially influence the investment decision.

The examples presented in this study demonstrate that the Net Present Value method can be effectively applied to a wide range of personal financial decisions, including investments in education, digital services, professional development, consumer goods, and income-generating assets. The results indicate that NPV provides individuals with a structured framework for comparing costs and expected benefits while taking into account the time value of money.

At the same time, the analysis reveals that the outcome of NPV calculations is highly dependent on two critical factors: the discount rate and the estimation of future cash flows. Variations in either of these variables may substantially alter the results of the evaluation and lead to different investment decisions. Consequently, the practical usefulness of the NPV method depends not only on the correctness of the calculation procedure but also on the quality of the assumptions underlying the analysis.

Overall, the findings suggest that the Net Present Value method can serve as a valuable tool for improving financial planning and supporting rational decision-making at the individual and household levels. Nevertheless, NPV should be applied together with realistic forecasts and, where possible, supplemented by sensitivity analysis to account for uncertainty in future financial outcomes.

## CONCLUSION AND RECOMMENDATIONS

Personal finance increasingly requires individuals and households to make informed decisions regarding education, consumption, savings, investments, and other activities that involve future financial consequences. In this context, the use of quantitative methods can improve the quality of financial decision-making and contribute to greater financial well-being. Among the available investment appraisal techniques, the Net Present Value method offers a structured approach to evaluating the economic attractiveness of financial decisions by incorporating the time value of money.

The findings of this study demonstrate that the Net Present Value method can be successfully applied to various personal finance decisions. The illustrative examples presented in the paper show that NPV may be used to evaluate investments in education, digital subscriptions, professional development, consumer goods, and other activities expected to generate future financial benefits. By comparing the present value of future cash flows with the initial investment, the method enables individuals to assess whether a particular decision is likely to create, preserve, or reduce economic value.

The analysis also highlights two factors that play a crucial role in NPV calculations: the discount rate and the estimation of future cash flows. The results indicate that changes in either of these variables may significantly influence the calculated NPV and, consequently, the final investment decision. Therefore, reliable forecasting and the selection of an appropriate discount rate are essential prerequisites for obtaining meaningful and accurate results.

The study suggests that the Net Present Value method can serve as a useful tool for enhancing financial literacy and supporting rational personal financial decision-making. Although the method has certain limitations and relies on assumptions regarding future conditions, it provides a more comprehensive assessment of investment efficiency than approaches that ignore the time value of money.

Based on the findings, it is recommended to incorporate the Net Present Value method into personal finance education and financial literacy programs. Individuals and households should be encouraged to use NPV analysis when comparing alternative financial decisions, especially those involving future income, savings, or costs. In addition, sensitivity analysis should be applied where possible in order to assess how changes in discount rates and expected cash flows affect financial outcomes.

The study is limited by the use of simplified one-year illustrative examples and does not consider multi-period cash flow structures that are frequently encountered in real-life financial decisions. Future research may therefore

focus on the application of NPV to long-term personal financial decisions and the integration of this method with other financial indicators, such as the Payback Period, Internal Rate of Return, and Return on Investment.

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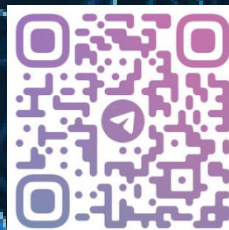
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