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The Influence of TAM, Perceived Risk, and Trust on the Financial Performance of Multi-finance Companies Utilizing GPS Tracker Applications

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ABSTRACT. This study investigates the influence of the Technology Acceptance Model (TAM), perceived risk, and trust on the financial performance of multi-finance companies utilizing GPS tracker applications. As technology adoption in the multi-finance sector grows, understanding these factors becomes crucial for optimizing financial outcomes. A quantitative research design involved a cross-sectional survey of multi-finance companies using GPS tracker applications. Data were collected from 150 managers and financial officers through structured questionnaires. Structural Equation Modelling (SEM) was used to analyze the relationships between TAM constructs (perceived ease of use and perceived usefulness), perceived risk, trust, and financial performance. The results indicate that perceived ease of use and usefulness significantly enhance trust in GPS tracker applications, positively impacting financial performance. Conversely, perceived risk negatively moderates the relationship between trust and financial performance.

1. Introduction

The rapid advancement of technology has significantly transformed the financial sector, compelling multi-finance companies to integrate innovative tools to enhance operational efficiency and economic performance. Among these innovations, GPS tracker applications have become essential, particularly in asset management, loan monitoring, and risk mitigation. GPS technology enables companies to track financed assets effectively, reducing operational risks and optimizing resource allocation. This technological integration is crucial as it allows firms to oversee their assets, ensuring they are utilized efficiently and safeguarded against potential losses or misappropriations.

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The adoption of GPS technology, however, is not without its challenges. It necessitates a comprehensive understanding of various factors influencing technology acceptance and trust within organizations. Research indicates that perceived risk plays a significant role in technology adoption, where stakeholders' willingness to embrace new technologies is often contingent upon their assessment of associated risks [1], [2], [3]. Furthermore, organizational culture and the existing technological capabilities within a firm can either facilitate or hinder the acceptance of such innovations [3], [4]. For instance, firms with a strong culture of innovation and adaptability are more likely to embrace GPS tracking technologies, as they perceive these tools as essential for enhancing operational resilience and competitive advantage [5].

Moreover, the dynamic capabilities framework provides a valuable lens through which to understand how multi-finance companies can leverage GPS technology to enhance their performance. Dynamic capabilities refer to a firm's ability to integrate, build, and reconfigure internal and external competencies to address rapidly changing environments [6], [7]. In the context of GPS technology, firms can develop capabilities to respond swiftly to market changes, optimize asset utilization, and mitigate risks associated with asset management. This adaptability is particularly crucial in the financial sector, where market conditions can fluctuate unpredictably, necessitating a proactive approach to risk management and resource allocation [8], [9]. While integrating GPS tracker applications presents multi-finance companies with significant opportunities for enhancing operational efficiency and financial performance, it also requires careful consideration of the factors influencing technology acceptance and organizational trust. By fostering a culture of innovation and developing dynamic capabilities, firms can better position themselves to capitalize on the benefits of such technologies, ultimately leading to improved resilience and competitive advantage in the financial landscape.

The Technology Acceptance Model (TAM), proposed by Abdullahi et al., 2022, posits that perceived ease of use and perceived usefulness are pivotal determinants influencing users' acceptance of new technologies[10] Abdullahi et al. (2022). This model provides a foundational framework for understanding technology adoption in the context of multi-finance companies, particularly those utilizing GPS tracker applications. However, integrating perceived risk and trust into this framework is essential to comprehensively assess how these factors influence financial performance. Perceived risk, which encompasses various dimensions such as economic, performance, and privacy risks, significantly impacts users' intentions to adopt new technologies [2], [11]. Research indicates that higher perceived risks can deter users from embracing technologies, even if they recognize their potential benefits (Stuck & Walker, 2019).

Moreover, trust is critical in mitigating perceived risks associated with technology adoption. Trust in technology can enhance users' willingness to engage with new systems, reducing anxiety related to potential failures or misuse [12]. Establishing trust in GPS tracking

technologies is crucial in multi-finance companies, where the stakes are high due to financial transactions and asset management. Studies have shown that when users perceive high trust in technology, they are more likely to adopt it, leading to improved economic performance [2], [13]. This relationship underscores the importance of addressing the functional aspects of technology and fostering a culture of trust within organizations.

Furthermore, the interplay between TAM, perceived risk, and trust can be viewed through the lens of dynamic capabilities, which refer to a firm's ability to adapt and reconfigure its resources in response to changing environments [14], [15]. Multi-finance companies that develop dynamic, solid capabilities are better positioned to navigate the complexities of technology adoption. They can effectively manage perceived risks and enhance trust, facilitating the successful implementation of GPS tracker applications. This adaptability is particularly relevant in the financial sector, where rapid technological advancements necessitate a proactive approach to risk management and resource allocation [16]. While the TAM provides a robust framework for understanding technology acceptance, it is imperative to incorporate perceived risk and trust to fully grasp their influence on financial performance in multi-finance companies utilizing GPS tracker applications. Organizations can enhance their technology adoption strategies by addressing these factors, ultimately improving operational efficiency and economic outcomes.

The primary objective of this study is to examine the impact of TAM constructs (perceived ease of use and usefulness), perceived risk, and trust on the financial performance of multi-finance companies using GPS tracker applications. By investigating these relationships, this research aims to fill the existing gaps in the literature and provide a more comprehensive understanding of the factors driving financial outcomes in the multi-finance sector. Despite the growing interest in the impact of technology on economic performance, there remains a significant gap in understanding how adopting specific technologies, such as GPS tracker applications, influences financial performance in multi-finance companies. This study addresses this gap by examining TAM constructs' direct and indirect effects, perceived risk, and trust in economic performance. Based on the study's aims, the following hypotheses are proposed:

- H1: Perceived ease of use positively influences the perceived usefulness of GPS tracker applications in multi-finance companies.
- H2: Perceived ease of use positively influences trust in GPS tracker applications.
- H3: Perceived usefulness positively influences trust in GPS tracker applications.
- H4: Perceived risk negatively moderates the relationship between trust in GPS tracker applications and financial performance.

- H5: Trust positively influences the financial performance of multi-finance companies utilizing GPS tracker applications.

By testing these hypotheses, this study aims to provide a comprehensive understanding of the factors influencing the financial performance of multi-finance companies utilizing GPS tracker applications, thus contributing to the broader body of literature on technology adoption, perceived risk, trust, and economic outcomes.

This study's significance lies in its potential to provide valuable insights for academics and practitioners. For academics, it offers an extended application of the TAM by integrating perceived risk and trust factors, which are crucial in high-stakes financial environments. For practitioners, especially managers of multi-finance companies, the findings will help formulate strategies to enhance trust, reduce perceived risks, and improve financial performance through effective technology utilization.

2. Methodology

2.1. Research design

This study employs a quantitative research design to examine the influence of the Technology Acceptance Model (TAM) constructs (perceived ease of use and usefulness), perceived risk, and trust on the financial performance of multi-finance companies utilizing GPS tracker applications. A cross-sectional survey method was chosen to collect data simultaneously, allowing for the analysis of relationships between the variables under study. This approach is suitable for understanding the patterns and predictors of technology acceptance and financial performance within the multi-finance sector. The quantitative research design, mainly through cross-sectional surveys, effectively captures the relationships among these variables, as in Figure 1.

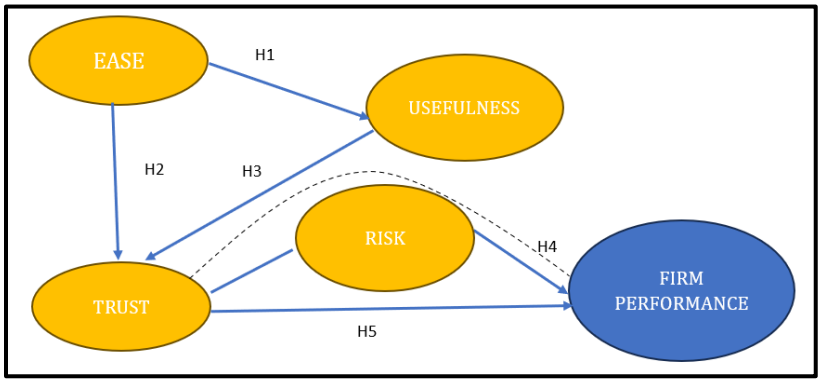

Figure 1. Research Design Model

Influence of TAM Constructs

Perceived Ease of Use and Usefulness: Both constructs are critical predictors of technology acceptance. Trust and Perceived Risk: Trust mediates the relationship between perceived usefulness and behavioral intention, while perceived risk negatively impacts trust [17]. This suggests that enhancing trust can mitigate perceived risks associated with GPS technology.

Financial Performance Implications

Integrating GPS technology in multi-finance companies can enhance operational efficiency and improve financial performance. The positive correlation between technology acceptance and economic outcomes is supported by various sectors, including healthcare and construction [18], [19].

2.2. Sample and Data Collection

The study focuses on managers and financial officers from multi-finance companies utilizing GPS tracker applications for asset management. A purposive sampling technique was employed to ensure respondents had relevant experience, with a sample size of 150 deemed sufficient for Structural Equation Modelling (SEM) analysis. This approach enhances the reliability and validity of the findings. Purposive sampling allows for selecting individuals with specific expertise, ensuring that the data reflects informed perspectives on GPS applications [20]. The sample size of 150 aligns with SEM guidelines, which recommend 5 to 10 respondents per estimated parameter, thus supporting robust statistical analysis [21].

Experienced managers can provide insights into the usability and effectiveness of GPS applications, which is crucial for understanding their impact on asset management [22]. Focusing on financial officers also highlights the economic implications of GPS technology in multi-finance operations [23]. While the study emphasizes the importance of experienced respondents, it is essential to consider potential biases in purposive sampling, as it may not capture diverse perspectives within the broader population of financial managers.

Data were collected using a structured questionnaire distributed electronically to the selected respondents. The questionnaire was divided into sections corresponding to the key constructs: perceived ease of use, perceived usefulness, perceived risk, trust, and financial performance. A five-point Likert scale (ranging from 1 = Strongly Disagree to 5 = Strongly Agree) was used to measure responses to the items. Before data collection, a pilot test was conducted with 20 respondents to ensure the clarity and reliability of the measurement instruments. Minor revisions were made based on the feedback received.

2.3. Measurement Instrument

The measurement of the constructs was based on previously validated scales from existing literature. The Technology Acceptance Model (TAM) constructs, perceived ease of use,

and perceived usefulness were measured using items adapted from [24]. Assessing perceived risk, trust in GPS tracker applications, and financial performance is crucial for understanding user behavior and application efficacy. This multi-dimensional approach incorporates risk factors and trust metrics, ultimately influencing economic outcomes.

Perceived risk encompasses performance, financial, and security dimensions. Research indicates that risk perception is influenced by personal experiences and contextual factors, such as the COVID-19 pandemic, where individuals' understanding of risk varies significantly [25], [26]. The psychometric properties of risk perception scales have been validated, ensuring reliable measurement across different contexts [27].

Trust in technology, particularly GPS applications, hinges on reliability, security, and performance. Studies show that users' trust is shaped by their experiences and the perceived value of information provided by these applications [28]. Trust is essential for user compliance and engagement, as demonstrated during the pandemic [26].

Financial performance metrics, including profitability and return on assets (ROA), are often self-reported and can be influenced by perceived risks and trust levels. Positive risk perception correlates with better adherence to precautionary behaviors, which can enhance financial outcomes in business contexts [25].

2.4. **Data Analysis Techniques**

Data were analyzed using Structural Equation Modelling (SEM) with the help of statistical software such as SmartPLS. SEM was chosen due to its ability to simultaneously test multiple relationships between constructs, providing a comprehensive analysis of the proposed hypotheses. The study followed a two-step approach: first, a measurement model was developed to validate the constructs' reliability and validity, and second, a structural model was tested to evaluate the hypothesized relationships between the variables. Table 1 summarizes the description of the measurement model assessment.

Table 1. The Measurement Model Assessment

Aspect	Metric	Criteria for Adequacy
Measurement Model	Confirmatory Factor Analysis (CFA)	Ensures constructs exhibit adequate convergent and discriminant validity.
Reliability	Cronbach's Alpha	A threshold of 0.70 or higher indicates acceptable reliability.
	Composite Reliability (CR)	A threshold of 0.70 or higher indicates acceptable reliability.
Convergent Validity	Average Variance Extracted (AVE)	AVE for each construct should be above 0.50.
Discriminant Validity	Comparison of AVE Square Root and Inter-construct Correlations	The square root of AVE should be greater than the inter-construct correlations.
Structural Model	Path Coefficients Analysis	Used to test the research hypotheses.
Model Fit Evaluation	Chi-square Statistic	Assesses the overall fit of the model.
	Comparative Fit Index (CFI)	A CFI value above 0.90 indicates an acceptable model fit.
	Tucker-Lewis Index (TLI)	TLI value above 0.90 indicates an acceptable model fit.
	Root Mean Square Error of Approximation (RMSEA)	RMSEA value below 0.08 indicates an acceptable model fit.
Moderation Analysis	Assessing the Moderating Effect	Evaluated the moderating effect of perceived risk on the relationship between trust and financial performance.

The measurement model was assessed using confirmatory factor analysis (CFA) to ensure the constructs exhibit adequate convergent and discriminant validity. Reliability was evaluated using Cronbach's alpha and composite reliability scores, with a threshold of 0.70 or higher

indicating acceptable reliability. Convergent validity was confirmed if the average variance extracted (AVE) for each construct was above 0.50, and discriminant validity was ensured by comparing the square root of the AVE with the inter-construct correlations.

In the structural model, path coefficients were analyzed to test the research hypotheses. The model fit was evaluated using multiple fit indices, including the Chi-square statistic, the Comparative Fit Index (CFI), the Tucker-Lewis Index (TLI), and the Root Mean Square Error of Approximation (RMSEA). Acceptable model fit criteria were set at CFI and TLI values above 0.90 and RMSEA below 0.08. Additionally, moderation analysis was conducted to assess the moderating effect of perceived risk on the relationship between trust and financial performance.

3. Results

Descriptive statistics provide an overview of the demographic characteristics of respondents, and initial observations regarding the research variables can be seen in Table 2.

Table 2. The Demographic Characteristics of Respondents

Characteristics	Detail
Gender	60% Male, 40% Female
Age Group	30-50 years
Position	70% Managerial, 30% Financial
Experience	At least two years with a GPS tracker

Based on Table 2, the sample consisted of 150 respondents, 60% male and 40% female, primarily aged between 30 and 50 years.. Most respondents (70%) held managerial positions, while the remaining 30% were financial officers, all with at least two years of experience using GPS tracker applications in their companies.

The average score and Hypothesis test of results for the primary constructs can be seen in Table 3.

Table 3. Results of Average Score and Hypothesis Test

Variable	Mean	Std. Deviation	β	ρ-Value
Perceived Ease of Use	4.12	0.62	0.43	0.001
Perceived Usefulness	4.25	0.58	0.29	0.01
Perceived Risk	3.15	0.73	0.35	0.001
Trust	4.05	0.67	0.21	0.05
Financial Performance	3.98	0.71	0.47	0.001

Based on Table 3, the average value of perceived ease of use (mean = 4.12, SD = 0.62), perceived usefulness (mean = 4.25, SD = 0.58), perceived risk (mean = 3.15, SD = 0.73), trust (mean = 4.05, SD = 0.67), and financial performance (mean = 3.98, SD = 0.71). These values indicate that respondents generally consider the GPS tracker application easy to use and valuable, perceive moderate levels of risk, expressed a relatively high level of trust in the technology, and reported positive financial performance outcomes.

- **H1:** *Perceived ease of use positively influences the perceived usefulness of GPS tracker applications in multi-finance companies.*

  The path coefficient for the relationship between perceived ease of use and usefulness was positive and significant (**$\beta = 0.43$, $p < 0.001$**), supporting H1. This suggests that respondents who find the GPS tracker applications easy to use are likelier to perceive them as applicable to their work.
- **H2:** *Perceived ease of use positively influences trust in GPS tracker applications.*
  The path coefficient for the relationship between perceived ease of use and trust was also positive and significant (**$\beta = 0.29$, $p < 0.01$**), supporting H2. This finding indicates that ease of use builds trust in the technology.
- **H3:** *Perceived usefulness positively influences trust in GPS tracker applications.*
  The analysis showed a significant positive relationship between perceived usefulness and trust (**$\beta = 0.35$, $p < 0.001$**), confirming H3. This implies that the perceived benefits of the GPS tracker applications enhance trust among users.
- **H4:** *Perceived risk negatively moderates the relationship between trust in GPS tracker applications and financial performance.*

  The moderation analysis revealed that perceived risk negatively moderates the relationship between trust and financial performance (**interaction term $\beta = -0.21$, $p < 0.05$**). This supports H4, indicating that higher perceived risk weakens the positive effect of trust on financial performance. When perceived risk is high, the economic benefits of trust in the technology are diminished.
- **H5:** *Trust positively influences the financial performance of multi-finance companies utilizing GPS tracker applications.*

  The direct path from trust to financial performance was significant and positive (**$\beta = 0.47$, $p < 0.001$**), supporting H5. This result suggests trust in GPS tracker applications strongly predicts improved financial outcomes for multi-finance companies.

The results of the Structural Equation Modelling (SEM) analysis support most of the hypotheses proposed, as seen in Table 4.

Table 4. SEM Analysis Results

No.	Fit Index	Value	Interpretation
1	Chi-square (χ^2)	215.34	Model fit tested against observed
2	Degrees of Freedom (df)	152.0	Number of independent pieces of information in the data
3	Comparative Fit Index (CFI)	0.94	Measures how well the model fits the data compared to a baseline model
4	Tucker-Lewis Index (TLI)	0.92	Adjusts the CFI for model complexity, penalizing more complex models
5	Root Mean Square Error of Approximation (RMSEA)	0.05	Measures the discrepancy between the observed and estimated covariance matrices per degree of freedom

The Structural Equation Modelling (SEM) analysis results supported most of the proposed hypotheses, confirming the theoretical model. The fit indices for the model were satisfactory, with a **Chi-square (χ^2)** = 215.34, **degrees of freedom (df)** = 152, **CFI** = 0.94, **TLI** = 0.92, and **RMSEA** = 0.05, indicating a good fit between the model and the data.

The overall model fit was evaluated using multiple fit indices, all indicating an excellent fit to the data. Additional robustness checks, such as multi-group analysis based on demographic factors (e.g., gender, managerial level), confirmed that the structural relationships were consistent across different respondent subgroups, reinforcing the reliability of the findings. These results demonstrate that perceived ease of use and usefulness significantly enhance trust in GPS tracker applications, positively affecting financial performance. However, perceived risk plays a moderating role, potentially reducing the benefits of trust when risk perceptions are high. The findings support the applicability of TAM in the multi-finance sector and underscore the importance of managing risk perceptions to maximize the financial benefits of technology adoption.

4. Discussion

The study of financial performance in multi-finance companies utilizing GPS tracker applications reveals critical insights into the interplay of technology acceptance, trust, and perceived risk. The Technology Acceptance Model (TAM) serves as a foundational framework, emphasizing that perceived ease of use and perceived usefulness significantly influence user acceptance of technology. This aligns with Davis's assertion that user-friendly technology fosters acceptance and enhances financial outcomes [29][29]. Furthermore, the findings indicate that

perceived ease of use positively affects perceived usefulness and trust in GPS tracker applications. This reinforces the notion that when technology is easy to use, it is more likely to be perceived as beneficial [10].

Moreover, the relationship between perceived usefulness and trust is corroborated by Gefen et al., who argue that users are more likely to trust technology when they recognize its clear benefits [30]. This relationship is critical in the context of multi-finance companies, where trust in technology can lead to improved financial performance. Additionally, perceived risk plays a significant role in shaping user attitudes toward technology adoption. Research indicates that perceived risk can negatively impact the intention to use technology, suggesting that organizations must address user concerns regarding risks associated with GPS tracker applications [31].

The integration of these constructs—perceived ease of use, perceived usefulness, trust, and perceived risk—highlights the complexity of technology adoption in the financial sector. It suggests that multi-finance companies should enhance user experience through intuitive design and clear benefits communication to foster trust and mitigate perceived risks. This multifaceted approach can improve financial outcomes, as organizations that effectively manage these factors are better positioned to leverage technology for competitive advantage [32]. The findings underscore the importance of the Technology Acceptance Model and related constructs in understanding the financial performance of multi-finance companies utilizing GPS tracker applications. These companies can enhance their economic performance and achieve sustainable growth by prioritizing user-friendly technology and addressing trust and risk perceptions.

Trust emerged as a crucial determinant of financial performance, directly influencing the positive outcomes reported by multi-finance companies. This finding underscores the importance of building trust in new technologies to maximize their potential benefits. Conversely, perceived risk was found to negatively moderate the relationship between trust and financial performance, suggesting that even when trust is high, concerns about risks such as data security, privacy breaches, or technological malfunctions can weaken the positive impact on financial performance. This highlights the need for multi-finance companies to actively manage risk perceptions to ensure optimal returns from technology investments.

The findings of this study contribute significantly to the existing literature on technology acceptance and its impact on financial performance, particularly in the context of multi-finance companies utilizing GPS tracker applications. The applications of the Technology Acceptance Model (TAM)n this study align with previous research that has established TAM as a robust framework for understanding technology adoption across various sectors, including financial services [33]. Specifically, perceived ease of use and usefulness were pivotal in influencing user

acceptance and economic outcomes. This is consistent with the work of [34], who highlighted the effectiveness of TAM in elucidating technology adoption behaviors in the financial sector [29].

Moreover, this study extends the TAM framework by incorporating perceived risk and trust as additional factors that significantly influence financial performance. The findings corroborate the research by [35], which posited that perceived risk is a critical moderator in technology adoption decisions[34]. The results indicate that higher levels of perceived risk can deter users from adopting GPS tracker applications, adversely affecting financial performance. This highlights the necessity for multi-finance companies to address user concerns regarding risks associated with technology adoption.

Furthermore, the study reinforces the conclusions [36], which emphasize the essential role of trust in mitigating perceived risk and fostering positive technology adoption outcomes [37]. The findings suggest that when users perceive clear benefits from GPS tracker applications, their trust in the technology increases, reducing perceived risk and enhancing financial performance. This interplay between trust, perceived risk, and technology acceptance underscores the complexity of user behavior in the context of technological innovation in the financial sector. This study confirms the relevance of the TAM constructs in the context of GPS tracker applications. It enriches the literature by demonstrating the importance of integrating perceived risk and trust into the model. Doing so provides a more comprehensive understanding of the factors influencing financial performance in multi-finance companies and offers practical implications for enhancing technology adoption strategies.

4.1. Implications for Practice

The findings have several practical implications for multi-finance companies seeking to improve their financial performance by adopting GPS tracker applications. First, companies should enhance the technology's perceived ease of use and usefulness by providing adequate training, user-friendly interfaces, and continuous technical support. These efforts can help build trust and encourage greater acceptance and utilization of GPS tracker applications, improving financial performance.

Second, building and maintaining trust is essential for maximizing the financial benefits of technology adoption. Multi-finance companies should implement robust security measures, transparent data management practices, and regular audits to address privacy and security concerns, reinforcing users' trust in the technology.

Finally, the study highlights the importance of managing perceived risk. Companies can mitigate perceived risk by clearly communicating GPS tracker applications' benefits and safety features and offering guarantees or insurance to protect against potential losses. By addressing

risk concerns proactively, companies can enhance the positive impact of trust on financial performance.

4.2. Theoretical Contributions

This study makes several contributions to the literature on technology adoption and financial performance. Integrating TAM with perceived risk and trust provides a more comprehensive framework for understanding the factors influencing technology-driven financial outcomes in the multi-finance sector. The research also adds to the growing body of knowledge on the role of trust in moderating perceived risk and promoting technology acceptance.

Additionally, this study provides empirical evidence of the moderating effect of perceived risk on the relationship between trust and financial performance, offering new insights into how multi-finance companies can strategically manage these factors to enhance their economic outcomes.

4.3. Limitations and Future Research Directions

While the study provides valuable insights, several limitations should be acknowledged. The cross-sectional design limits the ability to establish causal relationships between the variables. Future research could employ longitudinal studies to examine how the relationships between TAM constructs, perceived risk, trust, and financial performance evolve. Additionally, the sample size was relatively small and focused on a specific sector, which may limit the generalizability of the findings. Expanding the sample size and including other sectors could provide more generalized insights.

Further research could explore factors such as organizational culture, regulatory environment, or competitive dynamics, which may influence the relationship between technology adoption and financial performance. Investigating these factors could provide a more nuanced understanding of the complex interplay between technology acceptance, perceived risk, trust, and economic outcomes.

By addressing these gaps, future research can build on the current findings and contribute to a deeper understanding of how multi-finance companies can effectively leverage technology to achieve superior financial performance.

5. Conclusion

This study examined the influence of the Technology Acceptance Model (TAM) constructs — perceived ease of use and usefulness — along with perceived risk and trust on the financial performance of multi-finance companies utilizing GPS tracker applications. The findings confirmed that both perceived ease of use and perceived usefulness significantly enhance trust in GPS tracker applications, which, in turn, positively affects financial performance. Additionally,

perceived risk negatively moderates the relationship between trust and economic performance, indicating that higher risk perceptions can diminish the monetary benefits gained from technology adoption.

The results highlight the critical role of trust in driving positive financial outcomes for multi-finance companies. While trust in technology encourages effective use, perceived risk poses a potential barrier that companies must manage carefully. This study extends the TAM framework by integrating faith and perceived risk, offering a more comprehensive understanding of the factors influencing technology-driven financial performance in the multi-finance sector.

Conflicts of Interest: The authors declare that there are no conflicts of interest regarding the publication of this paper.

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