World Journal of Advanced Research and Reviews
eISSN: 2581-9615 CODEN (USA): WJARAI
Cross Ref DOI: 10.30574/wjarr
Journal homepage: https://wjarr.com/

(RESEARCH ARTICLE)

Check for updates

Digital financial data analytics and decision-making in electronic manufacturing company in Calamba City

Maria Rizza R. Yong *

Graduate School, Master in Business Administration Graduate, Laguna College of Business and Arts, City of Calamba, Laguna, Philippines.

World Journal of Advanced Research and Reviews, 2025, 25(03), 1339-1353

Publication history: Received on 08 February 2025; revised on 15 March 2025; accepted on 17 March 2025

Article DOI: https://doi.org/10.30574/wjarr.2025.25.3.0849

Abstract

Data analytics plays a crucial role in modern business decision-making. However, the perception often existed that financial data analysis was the sole responsibility of the finance department, neglecting the valuable insights generated across all organizational departments. This study aimed to address this gap by highlighting that a holistic view integrating financial data from all departments was necessary for optimal decision-making. This research identified the influence of digital financial data analytic tool utilization on the decision-making skills of key personnel within an Electronic Manufacturing Company in Calamba City. Employing a causal approach with a sample size of 138 key employees, the study confirmed a significant relationship between digital financial data analytic utilization and decision-making skill level. While the study acknowledged the recognized efficiency and organizational support for these tools, it also highlighted areas for improvement. This included the need for enhanced training materials and the importance of advanced analytical skills beyond basic tool navigation. As technology and data requirements continuously evolved, continuous improvement was crucial not only for the tools but also for the skills of those utilizing them in their decision-making processes.

Keywords: Digital financial data analytics; Data-driven decision-making; Analytical tools; Analytical skills; Data analytics

1. Introduction

Data is the lifeblood of the modern business. The digital revolution helps businesses to rediscover finance and operations. The ability of businesses to leverage these technologies and to integrate cross-functional data leads to the empowerment of informed choices. Unlocking the true potential of digital finance can help the company pave the way for a more data-driven future. In modern finance, the digital revolution reshaped services fostered the growth of fintech and big tech, and enhanced financial inclusion, as emphasized by Frost et al. [1]. Exemplary digital finance models in Kenya, India, and China demonstrated progress, but challenges like monopolies and data misuse remained. Policymakers advised a holistic approach with digital infrastructure, standardized regulations, privacy laws, and international cooperation to ensure equitable digital technology benefits and future readiness. As mentioned by Burlacu et al. [2], in this era of digitalization, it was clear that many nations were implementing policies to support economic expansion and competitiveness. The Europe 2020 strategy emphasized the importance of achieving social cohesion, embracing digital innovation, and developing a contemporary knowledge-based economy. Countries like Romania put into practice customized national plans that center on the information and communications technology sector to improve economic development and competitiveness, lessen administrators' burdens, and increase productivity in the private sector. The European Commission, which addresses fragmentation and advocates for a competitive EU financial sector while fostering innovation and consumer safety, plays a key role in digital finance, which is vital to this shift. In line with the European data strategy, the establishment of a European financial data space would accelerate data-driven

* Corresponding author: Maria Rizza R. Yong

financial innovation. To address the inherent risks and challenges of digital innovation, a dynamic regulatory framework is necessary. Countries understood that embracing digitalization was not only an option but a requirement in this era of fast technological development to secure long-term economic success and societal well-being.

The 2021 Philippine Institute of Development Study survey in the Philippines showed that nearly one-third of private firms (33.6%) engaged in innovation, with 21.8% focusing on product innovation and 27.4% on process innovation. However, according to Albert [3], only a quarter of these innovative private firms were aware of government innovation policies, and a mere 13.6% availed themselves of government assistance for innovation. These results made it abundantly evident that encouraging digitalization in the business sector was crucial. This called for raising public awareness of government innovation initiatives as well as eliminating barriers to regulation and offering strong assistance to private innovators operating in the business sector.

According to Imson [4], the Philippines understood the critical role that digital transformation played in the global environment because of its expanding electronics and semiconductor sector. Government programs such as the "U.S. CHIPS Act" provided opportunities such as knowledge sharing and technology transfer. The Philippines maintained its attractiveness as an investment destination in the digital age by emphasizing talent development, cost-competitive labor, and digital upskilling. Calamba, one of the Philippines' recognized digital cities, is strategically poised to harness digitalization's advantages in its thriving electronic manufacturing sector. The adoption of digital technologies in this industry can boost operational efficiency, automate processes, and offer real-time supply chain insights, further solidifying Calamba's position as a hub for cutting-edge electronic manufacturing. Electronic manufacturing Companies have an important role in digital transformation, and they have heavy reliance on digital technologies.

Many industries, despite the clear advantages of digital financial data analytics for proactive decision-making, have not fully utilized this technology. This lack of usage not only prevented companies from reaping the benefits of the technology capabilities but also restricted holistic decision-making. This study aimed to encourage the full potential of digital financial data analytics for improved decision-making within electronic manufacturing companies. It also sought to develop a practical approach that would ultimately empower informed decision-making and unlock new levels of operational efficiency. As the electronic manufacturing industry advanced through digital transformation, it paved the way for more efficient, data-driven operations and a future of informed competitiveness. This study sought to provide evidence of the benefits and encourage wider adoption of digital financial data analytics.

2. Material and methods

This section describes the research methodology that was used in this study. It covers research design, locale, population and sampling, respondents of the study, instrument, validation of the instrument, data gathering procedure, ethical considerations, and the treatment of quantitative data that are used in this study.

2.1. Research Design

This study employed a quantitative research design, specifically a causal approach, to investigate the causal relationship between the utilization of digital financial data analytics and the decision-making skills level of key personnel. Through quantitative data analysis, the study aimed to establish a clear cause-and-effect link between the use of digital financial data analytics and the strategic decision-making processes of key employees. This approach sought to provide a comprehensive understanding of how digital financial data analytics directly influences the strategic choices made by key personnel.

Quantitative research, as defined by Creswell and Creswell [5], serves as a technique for evaluating objective hypotheses by exploring the relationships between variables. As cited by Dovetail [6], causal research explored the "why" behind relationships between variables. Organizations use this approach to identify and understand the impact of changes within their environment, allowing them to evaluate the effects of specific actions on existing practices and processes. This was achieved through a systematic analysis of the variables without directly manipulating them. By examining causal relationships, the study sought to provide valuable insights into how digital financial data analytics integrates economic information and influences key employees' decision-making processes. The goal was to inform the company of the strategic adaptation to the dynamic business environment, leading to improved decision-making skills and enhanced competitiveness in the digital age.

2.2. Research Locale

The data for this study was obtained from a selected Electronic Manufacturing Company located in Barangay Real, Calamba City, Laguna. The selection of Calamba as the research locale had been deliberate, not only due to the level of

convenience it offered in terms of respondents' accessibility but also to gain valuable insight for addressing key employees' challenges in using data analytic tools and promoting a data-driven culture.

2.3. Population and Sampling

This study employed simple random sampling as the methodology for data collection to minimize selection bias and enhance the reliability and validity of the findings. This choice was primarily because it was the most appropriate method for research objectives. This method involved respondents from the selected electronic manufacturing company located in Barangay Real, Calamba City, Laguna. Additionally, G*Power was employed to determine the required sample size. The study aimed to include 138 respondents, specifying an effect size of 0.30 and a confidence level of 95%.

2.4. Respondents of the Study

The respondents for this study were key employees involved in decision-making processes in the electronic manufacturing company. These consisted of heads, managers, supervisors, analysts, specialists, and engineers who used financial data as a reference for their decision-making frameworks. The targeted key employees were obtained from a selected Calamba-based electronic manufacturing company, ensuring a focused and relevant representation of individuals directly involved in creating financial strategies and decisions within the setting of this specific industry and location. The study included 138 key employees. These key employees held positions as heads, managers, supervisors, analysts, specialists, and engineers who were involved in using analytic tools in their decision-making process.

2.5. Instrument

The data for this study was collected through a researcher-made survey questionnaire focusing on the utilization of digital financial data analytics and its relationship to the decision-making process. The survey questionnaire incorporated two main sections. The first section, titled "Utilization level on digital financial data analytics among key personnel," aimed to measure the extent to which organizations had embraced digitization in areas related to financial data analytics. The second section, titled "Decision-making Skills Level," examined how digitization has changed the decision-making process in a business. To gather participant responses, the research instrument used a 4-point Likert scale, following the scale below:

Table 1 Utilization level on digital financial data analytics among key personnel

Range	Rating	Utilization Level	Verbal Interpretation
3.25 - 4.00	4	Strongly Agree	Fully Utilized
2.50 - 3.24	3	Agree	Utilized
1.75 - 2.49	2	Disagree	Partially Utilized
1.00 - 1.74	1	Strongly Disagree	Not Utilized

Arbitrary Scale for the utilization level of digital financial data analytics among key personnel in Electronic Manufacturing Company in Calamba

Table 2 Decision-making Skills Level

Range	Rating	Decision-Making Skills Level	Verbal Interpretation
3.25 - 4.00	4	Strongly Agree	Very High
2.50 - 3.24	3	Agree	High
1.75 - 2.49	2	Disagree	Low
1.00 - 1.74	1	Strongly Disagree	Very Low

Arbitrary Scale for the decision-making skills level on digital financial data analytics among key personnel in Electronic Manufacturing Company in Calamba

2.6. Validation of the Instrument

The research instrument was initially presented to the thesis advisor, who provided feedback and suggestions for any improvements. Subsequently, the questionnaire underwent evaluation and approval from the statistician, the school's research director, the program chair, one research validator-professor, and one subject expert. Their evaluations enhanced the appropriateness of the instrument with the research objectives. Then, Lawshe's CVR/CVI was computed for acceptability. Lastly, to ensure reliability and consistency, Cronbach's Alpha was applied to the questionnaire. The results were all presented in the appendices.

2.7. Data Gathering Procedure

Several methods were used to collect the data required for this study. First, data was gathered using a specially designed questionnaire survey, which was validated by five experts in the field to ensure its reliability and relevance. Following validation, the Office of the Graduate School of LCBA sent a formal request for permission to survey the selected company. Subsequently, the Data Privacy Officer and HR Country Head provided their approval for the survey. Once these basic procedures were completed, the validated questionnaires and related endorsement letters were distributed to the targeted respondents through an online form. The acquired data was tallied and downloaded. The assistance of a statistician for extensive statistical analysis was sought. The tabulated results were the foundation for comprehensive analysis and interpretation, contributing valuable insights to the research objectives.

2.8. Treatment of Quantitative Data

The examination of the results involved the use of statistical methods to enhance the understanding of the quantitative data.

- The mean and four-point Likert scales were utilized to measure the respondents' perception regarding the utilization level of digital financial data analytics and the level of decision-making skills.
- Pearson correlation analysis was employed to identify the potential causal relationship between the utilization level of digital financial data analytics and the decision-making skills level among key personnel. This analysis aimed to assess the extent to which changes in digital financial data analytics utilization may directly influence specific aspects of key personnel's decision-making processes.
- The impact of digital financial data analytics on the decision-making skills of key personnel in an electronic manufacturing company in Calamba was measured using regression analysis.

3. Results and discussion

This chapter focuses on analyzing and interpreting the collected data to describe and evaluate the utilization of digital financial data analytics in decision-making processes.

3.1. Problem Number 1. What is the utilization level of digital financial data analytics among key personnel in Electronic Manufacturing Company in Calamba in terms of:

3.1.1. Performance Expectancy

Performance Expectancy was Fully Utilized (3.53) as to the utilization level of digital financial data analytics among key personnel in Electronic Manufacturing Company in Calamba. All indicators were verbally interpreted as Fully Utilized. The indicator "Analytic tools will make my financial analysis tasks faster and more efficient." had the highest mean of 3.64, meanwhile, the indicator "These analytic tools provide me with valuable information that goes beyond what I can get from other financial data sources." had the lowest mean of 3.45. This means that the key personnel in the Electronic Manufacturing Company in Calamba fully utilize digital financial data analytics in terms of performance expectancy. According to the key personnel in the Electronic Manufacturing Company in Calamba, analytic tools significantly improve the speed and efficiency of their financial analysis tasks. These tools provide valuable insights that lead to better financial results compared to traditional methods. Furthermore, the tools significantly enhance their ability to make informed financial decisions and identify new financial opportunities for the organization. They underscore that the tools provide unique and valuable information beyond what they can obtain from other financial data sources.

Table 3 Utilization Level of Digital Financial Data Analytics among Key Personnel in Electronic Manufacturing Company in Calamba in terms of Performance Expectancy

	Indicators	**Mean**	**Verbal Interpretation**
1.	Using Digital Financial Data Analytic tools significantly improves my ability to make better financial decisions.	3.52	Fully Utilized
2.	These analytic tools help me identify and take advantage of new financial opportunities for my organization.	3.52	Fully Utilized
3.	Analytic tools provide insights that lead to improved financial results compared to traditional methods.	3.54	Fully Utilized
4.	These analytic tools provide me with valuable information that goes beyond what I can get from other financial data sources.	3.45	Fully Utilized
5.	Analytic tools will make my financial analysis tasks faster and more efficient.	3.64	Fully Utilized
6.	Digital financial data analytic tools will help me stay ahead of the competition in terms of financial performance.	3.49	Fully Utilized
	General Assessment	3.53	Fully Utilized

Legend: 3.25 - 4.00 Strongly Agree – Fully Utilized 2.50 - 3.24 Agree – Utilized 1.75 - 2.49 Disagree – Partially Utilized 1.00 - 1.74 Strongly Disagree - Not Utilize

3.1.2. Effort Expectancy

Effort Expectancy was Fully Utilized (3.29) as to the utilization level of digital financial data analytics among key personnel in the Electronic Manufacturing Company in Calamba. The indicator "I am confident that I can quickly become skillful in using analytic tools to my advantage." got the highest mean of 3.41 verbally interpreted as Fully Utilized. Meanwhile, the indicator "My organization provides adequate training and support for learning and using Digital Financial Data Analytic tools." got the lowest mean of 3.17 verbally interpreted as Utilized.

Table 4 Utilization Level of Digital Financial Data Analytics among Key Personnel in an Electronic Manufacturing Company in Calamba in terms of Effort Expectancy

	Indicators	**Mean**	**Verbal Interpretation**
1.	I understand and can interpret the data provided by Digital Financial Data Analytic Tools.	3.34	Fully Utilized
2.	The interface and functionalities of these tools are easy to navigate and not overly time-consuming.	3.32	Fully Utilized
3.	I have the necessary skills and knowledge to effectively utilize financial analytic tools for my financial analysis needs.	3.18	Utilized
4.	My organization provides adequate training and support for learning and using Digital Financial Data Analytic tools.	3.17	Utilized
5.	I am confident that I can quickly become skillful in using analytic tools to my advantage.	3.41	Fully Utilized
	General Assessment	3.29	Fully Utilized

Legend: 3.25 - 4.00 Strongly Agree – Fully Utilized 2.50 - 3.24 Agree – Utilized 1.75 - 2.49 Disagree – Partially Utilized 1.00 - 1.74 Strongly Disagree - Not Utilize

This denotes that the key personnel in the Electronic Manufacturing Company in Calamba fully utilize digital financial data analytics in terms of effort expectancy. Therefore, key personnel value digital financial data analytic tools as an asset for their financial analysis needs. Due to the tools' user-friendly interface and efficient functionalities, key personnel are equipped with the necessary skills and knowledge to utilize them effectively. The organization's training and support further empower them to leverage these tools to their full potential.

3.1.3. Confirmation

Confirmation was Fully Utilized (3.38) as to the utilization level of digital financial data analytics among key personnel in the Electronic Manufacturing Company in Calamba. All the indicators were verbally interpreted as Fully Utilized. Moreover, the indicator "I am confident that the continued use of analytic tools will lead to positive outcomes for my organization." had the highest mean of 3.49, on the other hand, the indicator "My experience with analytic tools has been positive, confirming their ease of use for financial analysis." had the lowest mean of 3.28.

Table 5 Utilization Level of Digital Financial Data Analytics among Key Personnel in an Electronic Manufacturing Company in Calamba in terms of Confirmation

	Indicators	**Mean**	**Verbal Interpretation**
1.	My experience with analytic tools has been positive, confirming their ease of use for financial analysis.	3.28	Fully Utilized
2.	Analytic tools have led to improved financial decision-making in my experience.	3.37	Fully Utilized
3.	Analytic tools have provided valuable insights for my financial analysis tasks.	3.37	Fully Utilized
4.	My successful experience with analytic tools has convinced me to continue using them regularly.	3.34	Fully Utilized
5.	5. I am confident with my decision to start using financial analytic tools for my financial analysis needs.	3.36	Fully Utilized
6.	I am satisfied with the ease of use and functionality of the Digital Financial Data Analytic tools I have been using.	3.33	Fully Utilized
7.	Given my experience, I believe financial analytic tools can be valuable for improving organizational financial decision-making.	3.42	Fully Utilized
8.	I am confident that the continued use of analytic tools will lead to positive outcomes for my organization.	3.49	Fully Utilized
9.	These analytic tools prove to be a valuable asset for my financial analysis work in the foreseeable future.	3.43	Fully Utilized
	General Assessment	3.38	Fully Utilized

Legend: 3.25 - 4.00 Strongly Agree – Fully Utilized 2.50 - 3.24 Agree – Utilized 1.75 - 2.49 Disagree – Partially Utilized 1.00 - 1.74 Strongly Disagree - Not Utilize

This signifies that the key personnel in the Electronic Manufacturing Company in Calamba fully utilize digital financial data analytics in terms of confirmation. According to key personnel, the implementation of digital financial data analytic tools has demonstrably enhanced the efficiency and effectiveness of financial analysis tasks. Their user-friendly interface and functionalities have facilitated seamless integration into their workflow, leading to the creation of valuable insights that empower them to make informed decisions. This positive experience has confirmed the belief that these tools are an asset, not only for individual work but also for the organization's overall financial decision-making process. The key personnel are confident that the tools' continued use will yield positive outcomes in the foreseeable future.

The highest mean implies that key personnel are convinced of the long-term benefit of the analytic use through continued use. They expect that the positive outcomes they experience will continue. They appreciated how these tools helped them to improve not only their tasks but also their operational strategies. The successful influence of these tools makes their confidence grow in using the tools. Although key personnel believe in the ongoing benefits of using data analytics tools, inadequate training materials and past training sessions may have left them facing challenges in navigating and utilizing the tools effectively as indicated by the lowest mean. This could lead to a sense of underutilizing these tools' full potential and could result in low satisfaction with their experience.

3.2. Problem Number 2. What is the decision-making skills level on digital financial data analytics among key personnel in Electronic Manufacturing Company in Calamba in terms of:

3.2.1. Attitudes

Table 6 Decision-Making Skills Level on Digital Financial Data Analytics among Key Personnel in an Electronic Manufacturing Company in Calamba in terms of Attitudes

Indicators	Mean	Verbal Interpretation
1. My experience with analytic tools has been positive, confirming their ease of use for financial analysis.	3.50	Very High
2. Analytic tools have led to improved financial decision-making in my experience.	3.51	Very High
3. Analytic tools have provided valuable insights for my financial analysis tasks.	3.51	Very High
4. My successful experience with analytic tools has convinced me to continue using them regularly.	3.59	Very High
5. I am confident with my decision to start using financial analytic tools for my financial analysis needs.	3.50	Very High
6. I am satisfied with the ease of use and functionality of the Digital Financial Data Analytic tools I have been using.	3.46	Very High
7. Given my experience, I believe financial analytic tools can be valuable for improving organizational financial decision-making.	3.51	Very High
8. I am confident that the continued use of analytic tools will lead to positive outcomes for my organization.	3.58	Very High
9. These analytic tools prove to be a valuable asset for my financial analysis work in the foreseeable future.	3.53	Very High
General Assessment	3.52	Very High

Legend: 3.25 - 4.00 Strongly Agree – Very High 2.50 - 3.24 Agree – High 1.75 - 2.49 Disagree – Low 1.00 - 1.74 Strongly Disagree -Very Low

Attitudes' mean is Very High (3.52) as to the decision-making skills level of digital financial data analytics among key personnel in the Electronic Manufacturing Company in Calamba. All indicators were verbally interpreted as Very High. Moreover, the indicator "My successful experience with analytic tools has convinced me to continue using them regularly." had the highest mean of 3.59. Meanwhile, the indicator "I am satisfied with the ease of use and functionality of the Digital Financial Data Analytic tools I have been using." got the lowest mean of 3.46.

In the same fashion, Kaur et al. [7] highlighted the key factor driving continued user engagement with digital financial data analytic tools: successful experiences. With this, Shaikh et al. [8] explored the factors influencing user satisfaction with digital financial data analytic tools. Users who found the tools easy to learn, navigate, and deliver valuable insights experienced greater satisfaction and were more likely to continue using them.

To explain, Hroncich [9] pinpointed that the lack of training left employees feeling frustrated and unable to confidently use the new tools. By prioritizing staff training and development, companies could ensure a smooth digital transition, unlock the full potential of AI, and eventually improve customer service. While Pan [10] highlighted the importance of technology acceptance and self-efficacy, the study also revealed the crucial role of knowledge. This, combined with their motivation to learn, influenced their positive attitude towards learning technology.

3.2.2. Subjective Norms

Subjective Norms was **Very High (3.35)** as to the decision-making skills level of digital financial data analytics among key personnel in the Electronic Manufacturing Company in Calamba. All indicators were verbally interpreted as **Very High.** The indicator "Using analytic tools makes me appear more competent in financial analysis and decision-making to my colleagues." got the highest mean of **3.43,** on the other hand, the indicator "People around me encourage using analytic tools for financial decisions." got the lowest mean of **3.25.**

Table 7 Decision-making Skills Level on Digital Financial Data Analytics among Key Personnel in an Electronic Manufacturing Company in Calamba in terms of Subjective Norms

	Indicators	**Mean**	**Verbal Interpretation**
1.	People around me encourage using analytic tools for financial decisions.	3.25	Very High
2.	Financial professionals I trust, like advisors or consultants, recommend incorporating financial analytic tools for improved financial decision-making.	3.35	Very High
3.	I am motivated by others to adopt analytic tools in my financial analysis tasks and decision-making.	3.32	Very High
4.	The general attitude around me is that using analytic tools for financial decision-making is smart and responsible.	3.41	Very High
5.	In my social circle, using financial analytic tools is becoming increasingly common in making sound decisions.	3.36	Very High
6.	My social circle trusts the financial insights necessary for decision-making generated by analytic tools.	3.33	Very High
7.	Using analytic tools makes me appear more competent in financial analysis and decision-making to my colleagues.	3.43	Very High
	General Assessment	3.35	Very High

Legend: 3.25 - 4.00 Strongly Agree – Very High 2.50 - 3.24 Agree – High 1.75 - 2.49 Disagree – Low 1.00 - 1.74 Strongly Disagree - Very Low

This means that the decision skills level among key personnel in the Electronic Manufacturing Company in Calamba is very high in terms of subjective norms. Within the key personnel's social circle, there's a strong endorsement for utilizing digital financial analytic tools. Trusted advisors and colleagues actively encourage their adoption, highlighting the improved decision-making capabilities they provide. This widespread acceptance and the perception of these tools as a responsible approach to financial analysis motivate them to incorporate the tools into their financial tasks and decisions. The key personnel are motivated to use the analytic tools due to the perception of increased competence by their colleagues as implied by the highest mean. They are driven by a desire to project a professional image that emphasizes competence and demonstrates data-driven decision-making to their colleagues. This can be a positive motivator to integrate the analytical tools into their workflows. While the perception of increased competence from colleagues is a strong motivator, general encouragement from a broader social circle holds less importance, as reflected by the lowest mean. Key personnel seem to be more receptive to encouragement from trusted advisors or the general idea of analytic tools being a smart approach. This can also suggest they might be prioritizing concrete benefits and established perceptions over more than general encouragement.

Likewise, Davoodi et al. [11] emphasized the key factor influencing technology adoption in the workplace: subjective norms, which refer to how colleagues and superiors view this adoption. This highlighted the importance of a supportive environment where using data and analytics was encouraged. Additionally, Richter [13] noted that despite the desire to appear data-driven and innovative, businesses often struggle with new technology adoption due to limited skills, culture, and leadership awareness.

On the contrary, Tiron-Tudor and Deliu [12] emphasized the opportunities created for collaboration and knowledge sharing. This shift encouraged a culture of data driven decision-making, where people around each other could utilize the tools and contribute to informed financial choices. In addition, Richter [13] emphasized that a supportive company culture was crucial for successful technology adoption. Despite the availability of new technologies, businesses often struggle due to limited employee skills and a lack of leadership awareness.

3.2.3. Perceived Behavioral Control

Table 8 Decision-making Skills Level on Digital Financial Data Analytics among Key Personnel in an Electronic Manufacturing Company in Calamba in terms of Perceived Behavioral Control

	Indicators	**Mean**	**Verbal Interpretation**
1.	The established systems and support within the organization make me confident that I can seamlessly integrate analytic tools into my financial analysis routine.	3.36	Very high
2.	My knowledge is sufficient to interpret the insights generated by financial data analytic tools.	3.22	High
3.	My organization's well-defined workflows ensure smooth integration of analytic tools, streamlining my financial analysis process and decision-making.	3.31	Very high
4.	The organization provides readily accessible learning resources and a supportive environment to address any challenges with using analytic tools for financial data analysis.	3.30	Very high
5.	The implemented procedures and resource allocation within my organization give me a sense of control over utilizing the analytic tools for financial analysis.	3.30	Very high
	General Assessment	3.30	Very high

Legend: 3.25 - 4.00 Strongly Agree – Very High 2.50 - 3.24 Agree – High 1.75 - 2.49 Disagree – Low 1.00 - 1.74 Strongly Disagree - Very Low

Perceived Behavioral Control was Very High (3.30) as to the decision-making skills level of digital financial data analytics among key personnel in the Electronic Manufacturing Company in Calamba. The indicator "The established systems and support within the organization make me confident that I can seamlessly integrate analytic tools into my financial analysis routine." had the highest mean of 3.36 verbally interpreted as Very High, meanwhile, the indicator "My knowledge is sufficient to interpret the insights generated by financial data analytic tools." had the lowest mean of 3.22 verbally interpreted as High.

This means that the decision skills level among key personnel in the Electronic Manufacturing Company in Calamba is very high in terms of perceived behavioral control. The organization's established systems and workflows provide a strong foundation for the seamless integration of digital financial data analytic tools into the financial analysis routine. The existing knowledge base allows key personnel to effectively interpret the insights generated by these tools. Moreover, the readily accessible learning resources and supportive environment empower them to overcome any challenges that might arise. This sense of control, coupled with well-defined procedures and resource allocation, highlights their confidence in utilizing these tools to streamline their financial analysis process and decision-making.

Jain [14] emphasized how well-established internal systems and robust support structures within the organization create a foundation of confidence, enabling seamless integration of analytic tools into routine financial analysis practices. Cote [15] stressed that by leveraging data analytics tools and techniques, businesses can gain a competitive edge through targeted strategies and capitalize on future trends. In addition, Campbell et al. [16] emphasized the need for a data-driven culture, where institutions valued using data for informed decision-making. Additionally, Lebedina [17] mentioned that clear communication across the organization was found to be crucial for companies to bridge the "knowing-doing gap" and achieve successful digital transformation.

3.3. Problem Number 3. Is there a significant relationship between the utilization level of digital financial data analytics and the decision-making skills level among key personnel in the Electronic Manufacturing Company in Calamba City?

There was a significant relationship between the utilization level of digital financial data analytics and the decision-making skills of key personnel in the Electronic Manufacturing Company in Calamba City. The probability values of utilization level of digital financial data analytics in terms of performance expectancy, effort expectancy, and confirmation and the decision-making skills level in terms of attitudes, subjective norms, and perceived behavioral control were all less than 0.05, indicating a rejection of the null hypothesis.

The r values range from 0.51 to 0.775, indicating a small to high positive correlation. This suggested a substantial positive relationship between the utilization level of digital financial data analytics and the decision-making skills of

key personnel. In other words, higher utilization of digital financial data analytics is associated with improved decision-making skills among key personnel.

Table 9 Decision-making Skills Level on Digital Financial Data Analytics among Key Personnel in an Electronic Manufacturing Company in Calamba in terms of Perceived Behavioral Control

Utilization Level of Digital	Decision-making skills level	r value	p-value	Remarks	Decision
Performance	Attitudes	0.775**	0.000	Significant	Reject ho
Expectancy	Subjective Norms	0.678**			
	Perceived Behavioral	0.566**	0.000	Significant	Reject ho
Effort Expectancy	Attitudes	0.667**	0.000	Significant	Reject ho
	Subjective Norms	0.768**	0.000	Significant	Reject ho
	Perceived Behavioral	0.784**	0.000	Significant	Reject ho
Confirmation	Attitudes	0.791**	0.000	Significant	Reject ho
	Subjective Norms	0.853**	0.000	Significant	Reject ho
	Perceived Behavioral	0.822**	0.000	Significant	Reject ho

*. Correlation is significant at the 0.05 level (2-tailed). **. Correlation is significant at the 0.01 level (2-tailed).

3.4. Problem Number 4. Does the utilization level of digital financial data analytics significantly impact the decision-making skills level of key personnel?

Table 10 Regression Analysis on the Impact of the Utilization Level of Digital Financial Data Analytics on the Decision-Making Skills Level among Key Personnel in terms of Attitudes

Variables	Unstandardized B	Std. Error	Standardized B	t	p-value	Remarks	Decision
(Constant)	0.326	0.178		1.834	0.069		
Performance Expectancy	0.417	0.067	0.420	6.237	0.000	Significant	Reject Ho
Effort Expectancy	0.050	0.076	0.051	0.663	0.508	Not Significant	Accept Ho
Confirmation	0.462	0.090	0.447	5.142	0.000	Significant	Reject Ho

R – Square = 0.713 F-value= 110.928 Adjusted R Square =0 .707 Significance=0.000

The utilization level of digital financial data analytics factors such as performance expectancy and confirmation, significantly impacts the decision-making attitudes of key personnel. The p-values of .000, which were less than the significance level of 0.05, led to the rejection of the null hypothesis. This suggested that performance expectancy and confirmation significantly influenced decision-making attitudes by approximately 71.3%.

This means that if the key personnel believe those tools will improve their results, and their experience with the tool reinforces that belief, they are more likely to use and trust tools for decision-making.

The utilization level of digital financial data analytics factors such as effort expectancy and confirmation, significantly impacts the decision-making subjective norms of key personnel. The p-values of .000, which are less than the significance level of 0.05, lead to the rejection of the null hypothesis. This suggested that effort expectancy and confirmation significantly influence decision-making subjective norms by approximately 75.5%.

This indicated that key personnel base their decisions on an evaluation of the actual results or efforts achieved by others. The successful experiences shared by others influenced their perception about the system's ease of use.

Table 11 Regression Analysis on the Impact of the Utilization Level of Digital Financial Data Analytics on the Decision-Making Skills Level among Key Personnel in terms of Subjective Norms

Variables	Unstandardized B	Std. Error	Standardized B	t	p-value	Remarks	Decision
(Constant)	0.146	0.165		0.882	0.379		
Performance Expectancy	0.107	0.062	0.107	1.717	0.088	Not Significant	Accept Ho
Effort Expectancy	0.228	0.070	0.230	3.243	0.001	Significant	Reject Ho
Confirmation	0.616	0.083	0.593	7.379	0.000	Significant	Reject Ho

R – Square = 0.755 F-value= 137.470 Adjusted R Square = 0.749 Significance =0.000

Table 12 Regression Analysis on the Impact of the Utilization Level of Digital Financial Data Analytics on the Decision-Making Skills Level among Key Personnel in terms of Subjective Norms \

Variables	Unstandardized B	Std. Error	Standardized B	t	p-value	Remarks	Decision
(Constant)	0.164	0.184		0.887	0.376		
Performance Expectancy	-0.101	0.069	-0.096	-1.456	0.148	Not Significant	Accept Ho
Effort Expectancy	0.384	0.078	0.366	4.895	0.000	Significant	Reject Ho
Confirmation	0.660	0.093	0.600	7.081	0.000	Significant	Reject Ho

R – Square =0.727 F-value = 118.917 Adjusted R Square =0.721 Significance=0.000

The utilization level of digital financial data analytics factors such as effort expectancy and confirmation, significantly impacts the decision-making perceived behavioral control of key personnel. The p-values of .000, which were less than the significance level of 0.05, led to the rejection of the null hypothesis. This suggested that effort expectancy and confirmation significantly influence decision-making perceived behavioral control by approximately 72.7%.

This proposed that if key personnel believe using analytic tools is easy and has a positive initial experience, they feel more in control of using them. This leads them to make decisions with confidence to achieve the desired outcome based on past efforts.

In contrast, Park and Lee [18] suggested a potential confirmation bias, where initial positive experiences might be emphasized after training. However, Krismadinata et al. [19] highlighted that by creating user-friendly interfaces and addressing initial concerns, organizations could create conditions that promoted a sense of control and encouraged technology adoption among employees.

3.5. Problem Number 5. Based on the findings of the study, what action plan may be proposed to encourage key personnel to increase the utilization of digital financial data analytics tools and integrate them into their decision-making processes?

This study's findings informed a proposed action plan to address challenges faced by key personnel in using digital financial data analytics tools at an electronic manufacturing company in Calamba. These challenges include the lack of training or knowledge in using the analytic tools, difficulty in interpreting complex data, and confidence in the decision-making skills based on the information available in the tools. This action plan outlines strategies to address the findings of a recent study that examined the relationship between the utilization level of digital financial data analytics tools and decision-making skills among key personnel in the Electronic Manufacturing Company.

This plan targeted technical skills, data interpretation, and decision-making quality. The action plan will help the key personnel to effectively utilize the digital analytic tools and enhance the quality of their decision-making. This plan will help to improve the decision-making quality in the company through increased utilization of digital financial data analytic tools and improved data interpretation skills among key personnel.

Table 13 Proposed Action Plan

Key Areas	Objectives	Strategies/ Activities	Frequency	Persons Involved	Source of Fund	Success Indicators
Training and Skills Development	Enhance data interpretation skills and advanced analytics tool techniques.	Provide an online seminar on financial data analysis and data interpretation generated from the tools.	Quarterly	Performance Specialist, Data Analytic Expert (Outside/ Internal), Training Specialist (HR)	Training Budget	85% assessment score on advanced data interpretation skills test and tools navigation (e.g. Case Study, Multiple Choice Test)
		Provide an online seminar on financial data analysis and data interpretation generated from the tools.				90% Positive feedback from participants on the relevance and effectiveness of training.
		Create case studies that can help with the data interpretation.				
		Conduct an advanced training assessment to test their knowledge of the analytic tools and data interpretation.				
Group Synergy and Knowledge Sharing	Encourage the collaborative network for sharing knowledge on data analytics tools.	Encourage the global knowledge-sharing program "For Us, By Us" which promotes new knowledge and best practices.	Monthly	Global Department, Experienced Users, Responsible Website Owner	Training Budget and Administrative Budget	80% increased activity and participation on knowledge-sharing platforms.
		Keep the FAQ or Wiki website current by addressing new questions and issues, even if they are uncommon.				90% positive feedback from users on the value of knowledge exchange and team support.
		Implement a "buddy" program to pair experienced users with new colleagues who				

		need help navigating the analytics tools.				
Progress Monitoring and Feedback	Track progress and gather feedback	Conduct surveys to assess improvements in user confidence and skill level in data interpretation.	Biannually	HR, Data Analytics Team	Administrative Budget	92% Improvement in user self-reported confidence and skills in data interpretation (Survey)
		Monitor usage on utilization of data analytic tools Gather feedback and testimonials on the use of analytic tools				80% usage increased in utilizing the data analytic tools

4. Conclusion

Based on the findings of the study, the following conclusions may be derived:

- That there is a favorable value in the utilization of digital financial data analytics in terms of performance expectancy. The efficiency gained through using these tools allows key personnel to focus on strategic activities, leading to increased confidence in adopting the tools due to their effort expectancy towards the tools. Moreover, through confirmation, their experience settles their belief in the long-term benefits of the tools and their ability to achieve positive outcomes. However, a material gap exists in training. Low satisfaction with training materials suggests they may not be fully utilizing the tools' capabilities due to a lack of knowledge. Addressing training deficiencies is vital to maximizing the return on investment in these tools despite their positive outlook.
- That key personnel value the efficiency, ease of use, and ability to improve their competence while using digital financial data analysis tools, which demonstrates their positive attitude toward utilizing these tools in their decision-making processes. They are motivated by successful experiences and the perception of increased expertise among colleagues, highlighting the importance of subjective norms. Furthermore, their confidence in the established system and support within the organization indicates their perceived behavioral control over the system. However, a gap in training knowledge exists, potentially preventing their ability to fully utilize the tools and interpret all generated insights. While confident in the organization's support for integrating the tools, addressing training deficiencies remains a priority.
- That increased utilization of the analytic tools is associated with higher decision-making skills among key personnel.
- That the effort expectancy and confirmation significantly affect decision-making skills level in terms of subjective norms and perceived behavior. On the other hand, performance expectancy and confirmation also significantly affect decision-making levels in terms of attitudes among key personnel.
- That action plan has been developed to address the identified gaps and maximize the benefits of digital financial data analytic tools. The action plan aims to empower the key employees to utilize and unlock the full potential of the analytic tools.
- This will lead to data-driven and improve the decision-making process within the company.

Compliance with ethical standards

Disclosure of conflict of interest

The manuscript's author says there are no conflicts of interest relating to the study's results and findings. She certifies that this research has been carried out impartially, without any financial or personal ties that may influence how the findings are interpreted or presented in the study. She pledges to disclose any potential conflicts of interest in the future.

Statement of ethical approval

The study involved the implementation of specific procedures. Before data collection, letters of approval were prepared and provided to obtain the informed consent of the selected company. The study's purpose, the voluntary nature of participation, and any potential risks were communicated through privacy notice at the beginning of the survey form to ensure the respondents' understanding and agreement. Individual responses were treated with confidentiality and anonymity.

Statement of informed consent

Data security was a priority, especially since the survey administration was done online, a consent section was gathered before proceeding with the actual questions in the survey. Respondents then completed the surveys, and the data was retrieved on the same day the link was provided, or on or before the date agreed upon with the respondents. Following that, the obtained data was accurately tabulated, consolidated, analyzed, and interpreted using proper statistical procedures with the support of the statistician.

References

[1] Frost J, Gambacorta L, Shin HS. The digital future [Internet]. The Digital Future – IMF F&D; 2021 [cited 2023 Apr 15]. Available from: https://www.imf.org/external/pubs/ft/fandd/2021/03/pdf/fd0321.pdf

[2] Burlacu S, Ciobanu G, Troaca VA, Gombos CC. The Digital Finance – Opportunity of development in the New Economy. Proceedings of the International Conference on Business Excellence. 2021 Dec 1;15(1):392–405. doi:10.2478/picbe-2021-0036

[3] Albert JR. Only 33.6% of PH firms are "innovation-active", least innovation in Agri sector –pads study [Internet]. [cited 2023 Mar 11]. Available from: https://www.pids.gov.ph/details/news/press-releases/only-33-6-of-ph-firms-are-innovation-active-least-innovation-in-agri-sector-pids-study

[4] Imson N. Emerging industries in the Philippines: Digital Economy, electronics, and Renewable Energy [Internet]. 2023 [cited 2022 Feb 21]. Available from: https://ycpsolidiance.com/article/industries-investment-opportunities-philippines-2023

[5] Creswell J, Creswell JD. Research design [Internet]. Google; 2022 [cited 2023 Aug 18]. Available from: https://www.google.com.ph/books/edition/Research_Design/Rkh4EAAAQBAJ?h+l=en&gbpv=1&dq=Creswell%2Bquantitative%2Bdesign&printsec=frontcover

[6] Team DE. Causal research design: Definition, benefits, examples [Internet]. Dovetail; 2023 [cited 2022 Oct 10]. Available from: https://dovetail.com/research/causal-research/

[7] Kaur S, Katoch R, Rana A. Exploring post-adoption behavior of the UPI users with cognitive and affective factors. International Journal on Recent and Innovation Trends in Computing and Communication. 2022 Dec 31;10(12):140–54. doi:10.17762/ijritcc.v10i12.5895

[8] Shaikh, A. A., Glavee-Geo, R., & Karjaluoto, H. How relevant are risk perceptions, effort, and performance expectancy in adoption of mobile banking? 2022. InIGI Global eBooks (pp. 692–716). https://doi.org/10.4018/978-1-7998-8545-0.ch038

[9] Hroncich C. Banks may be ready for Digital Innovation: Many on the staff aren't [Internet]. The Financial Brand; 2024 [cited 2022 Feb 12]. Available from: https://thefinancialbrand.com/news/data-analytics-banking/artificial-intelligence-banking/banks-may-be-ready-for-digital-innovation-many-of-your-staff-arent-171745/

[10] Pan X. Technology acceptance, technological self-efficacy, and attitude toward technology-based self-directed learning: Learning motivation as a mediator. Frontiers in Psychology. 2020 Oct 27;11. doi:10.3389/fpsyg.2020.564294

[11] Davoodi S, Akbarpour L, Hadipour E. Investigating the effects of subjective norms and trialability on English teachers` attitude toward the use of Technology. Vision: Journal for Language and Foreign Language Learning. 2021 Feb 22;9(2):159–72. doi:10.21580/vjv10i17431

[12] Tiron-Tudor A, Deliu D. Big Data's disruptive effect on job profiles: Management accountants' case study. Journal of Risk and Financial Management. 2021 Aug 16;14(8):376. doi:10.3390/jrfm14080376

[13] Richter F-J, Sinha G. Why do your employees resist new tech? [Internet]. Harvard Business Review; 2020 [cited 2022 Jan 23]. Available from: https://hbr.org/2020/08/why-do-your-employees-resist-new-tech

[14] Jain E. Business analytics: Shaping the future of Management. ACADEMICIA: An International Multidisciplinary Research Journal. 2020;10(4):58. doi:10.5958/2249-7137.2020.00114.7

[15] Cote C. 4 types of data analytics to improve decision-making [Internet]. Business Insights Blog; 2021 [cited 2023 Sept 24]. Available from: https://online.hbs.edu/blog/post/types-of-data-analysis

[16] Campbell C, Cola P, Lyytinen K. Factors impacting the influence of analytic capabilities on organizational performance in Higher Education. Proceedings of the Annual Hawaii International Conference on System Sciences. 2021; doi:10.24251/hicss.2021.621

[17] Lebedina E. Digital Transformation: How to bridge the gap between Knowledge & Action [Internet]. 2024 [cited 2021 Dec 27]. Available from: https://www.imd.org/ibyimd/technology/mind-the-gap-how-companies-can-cross-the-bridge-between-knowledge-and-action-in-the-digital-transformation-process/

[18] Park S-B, Lee J-E. The influence of theory of planned behavior (TPB) on the perceived ease of use and perceived usefulness in accounting information users. Korean Association of Computers and Accounting. 2022 Aug 31;20(2):23–45. doi:10.32956/kaoca.2022.20.2.23

[19] Krismadinata K, Jalinus N, Pitra Rosmena H, Yahfizham Y. Understanding behavioral intention in implementation of the ICTS based on Utaut model. Lontar Komputer : Jurnal Ilmiah Teknologi Informasi. 2019 Aug 16;96. doi:10.24843/lkjiti.2019.v10.i02.p04

Author's short biography

Maria Rizza R. Yong: Maria Rizza R. Yong is a certified public accountant, a certified financial management professional, and a registered cost accountant who specializes in cost analysis, budgeting, financial control, financial planning, and investment strategies. She finished his master's in business administration at Laguna College of Business and Arts, Calamba City.