

Role of information technology in the administration of economic development in the Philippines

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Abstract: This study explores the role of Information Technology (IT) in the administration of economic development in the Philippines. Through a descriptive-quantitative research design, the study investigates the level of satisfaction among Filipino citizens with IT integration in government functions and identifies factors influencing this integration. Findings indicate a high level of satisfaction, with IT enhancing service efficiency, transparency, and accessibility. However, challenges such as geographical diversity, cybersecurity risks, and resource limitations persist. Recommendations include continued investment in IT infrastructure, addressing the digital divide, and enhancing cybersecurity measures.

Keywords: Information Technology, Economic Development, Philippines

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INTRODUCTION

The Republic of the Philippines, a collection of islands located in Southeast Asia, has undergone substantial economic expansion and metamorphosis in the past few decades. The country's population exceeds 100 million individuals, and its strategic positioning within the Asia-Pacific region gives rise to a range of prospects and obstacles in the pursuit of sustainable economic growth. The field of information technology (IT) has assumed a crucial role in influencing the direction of the Philippine economy and its administrative procedures.

The use and integration of information technology (IT) throughout several domains of society have had a profound impact, leading to significant consequences for governance, business, education, and everyday existence (Nfon, 2021). The use of information technology (IT) in the management of economic development has experienced a notable escalation. The Republic of the Philippines has acknowledged the potential of information technology (IT) in fostering economic growth, augmenting public services, and enhancing the general standard of living for its populace (Intalio, 2020). The government of the Philippines has undertaken several e-government programs with the objective of enhancing the efficiency of public services, minimizing administrative red tape, and enhancing transparency (Khatiwada, 2020). These projects encompass the National Government Portal, a range of online government services, and digital platforms designed to facilitate citizen interaction. It is vital to comprehend the influence and efficacy of these programs (Hinkley, 2023).

The Information Technology and Business Process Management (IT-BPM) industry in the Philippines has experienced significant growth, emerging as a prominent driver of economic progress (Reganit, 2023). The aforementioned sector has facilitated employment opportunities, enticed foreign capital inflows, and delivered essential auxiliary services to global enterprises (Cangiano, 2020). The examination of the expansion, obstacles, and potential of this particular sector holds significant importance in the context of economic strategizing (Joshi, 2018). Although there has been a significant increase in the adoption of information technology (IT) in metropolitan areas, there continue to be inequalities in terms

of access to and utilization of technology in rural and distant regions (Wang, 2023). Addressing the digital divide is a crucial objective in order to facilitate inclusive economic growth that encompasses all sectors of the population. The examination of strategies aimed at promoting digital inclusion is of utmost importance (Wall, 2023).

Despite the widespread use of information technology (IT) in urban areas, there continue to be significant discrepancies in both access to and utilization of technology in rural and distant regions (Zheng, 2020). Addressing the digital divide is a crucial objective in order to ensure that economic progress is inclusive and benefits all sectors of the population. The exploration of techniques aimed at fostering digital inclusion is of utmost importance. The increasing dependence on information technology necessitates the implementation of measures to safeguard essential infrastructure and safeguard sensitive data from potential cyber threats (Malloy, 2019).

Conducting an examination of the cybersecurity landscape in the Philippines and discerning potential weaknesses is of paramount importance in ensuring the preservation of economic stability and national security (International Trade Administration, 2022). The presence of IT ecosystems has the potential to facilitate the development of innovative ideas and entrepreneurial activities, thereby contributing to the diversification of the economy and enhancing its competitiveness. Examining the intricacies of innovation centers, startup incubators, and technology parks can yield valuable insights towards fostering a flourishing technological ecosystem (Aeologic, 2022).

This study aims to provide significant insights for policymakers, organizations, and stakeholders by analyzing the current level of IT adoption, its impact on various industries, and the problems and opportunities it brings. In conclusion, the results of this study will make a valuable contribution to the development of well-informed policies aimed at maximizing the utilization of information technology (IT) to facilitate sustainable economic growth in the Philippines.

Statement of the problem

This study aims to answer the following questions.

- 1) What is the level of satisfaction of the Filipino citizens in the integration of information technology in government's administrative functions?
- 2) What are the factors affecting the integration of information technology in the administration of economic development in the Philippines?

LITERATURE REVIEW

E-government projects have played a crucial role in optimizing administrative procedures, diminishing bureaucratic hurdles, and augmenting the overall effectiveness of public service provision in the Philippines. The implementation of the National Government Portal and diverse online government services has facilitated enhanced accessibility for citizens to obtain information and engage with governmental entities (Crismundo, 2021).

The implementation of services such as online tax filing and e-payment systems has not only resulted in a reduction of bureaucratic processes but has also led to an augmentation in the collection of government revenue. The enhancement of transparency and accountability has led to a more favorable climate for economic development (KPMG, 2023).

The Information Technology and Business Process Management (IT-BPM) industry in the Philippines has emerged as a notable exemplar of success. The scope of this domain includes several services, including customer support, software development, and business process outsourcing (Romero, 2023). The aforementioned industry has successfully garnered international investments, resulting in the creation of numerous employment opportunities

and making a substantial contribution to the overall economic advancement of the nation (Romero, 2023).

The Philippines has emerged as a favored outsourcing location for multinational corporations owing to its highly qualified labor population and economically advantageous services. The emergence of the Information Technology-Business Process Management (IT-BPM) industry in the Philippines has given rise to a distinct group of Filipino professionals and entrepreneurs, thereby contributing to the overall economic vitality of the nation (Lugtu, 2022). The proliferation of information technology (IT) has experienced significant growth in metropolitan areas, whereas rural and isolated regions have encountered obstacles in terms of technological accessibility. The imperative of addressing the digital divide is crucial in order to facilitate equitable economic development that encompasses all strata of society. Efforts aimed at fostering digital inclusion encompass many initiatives such as the provision of cost-effective cellphones, the construction of community e-centers, and endeavors to extend internet access to marginalized regions (Khatiwada, 2020).

The provision of equal access to information technology (IT) for all individuals in the Philippines is not solely a matter of economic fairness, but also a crucial strategic necessity for the advancement of the nation. The widespread availability of data and the progress made in data analytics have brought about a transformative impact on decision-making procedures in the Philippines (The World Bank, 2020).

Both government agencies and corporations are utilizing data to inform their policies and goals. The utilization of big data analytics facilitates the identification of patterns, prospects, and domains necessitating intervention to foster economic expansion (National Computer Centre, 2019). The utilization of data-driven insights facilitates enhanced resource allocation efficiency, heightened market intelligence, and more precise targeting of public services. The increasing reliance on information technology (IT) necessitates the implementation of strong cybersecurity protocols. Ensuring the safeguarding of key infrastructure and sensitive data from cyber threats is imperative in order to sustain economic stability and instill trust among investors (National Computer Centre, 2019).

The Republic of the Philippines acknowledges the significance of cybersecurity and has implemented measures to enhance its resilience against cyber threats (Development Academy of the Philippines, 2020). The sustainability of the digital economy is contingent upon the imperative of collaborative endeavors including government, the corporate sector, and international stakeholders. The IT ecosystems inside the Philippines have emerged as conducive environments for fostering innovation and entrepreneurial activities (Development Academy of the Philippines, 2020).

Technology parks, startup incubators, and venture capital networks play a crucial role in fostering a dynamic technological and entrepreneurial environment. The advent of fintech, health tech, and agricultural tech has engendered a paradigm shift in conventional industries, hence engendering novel economic prospects (Castro, 2022). The phenomenon of innovation culture in the Philippines is not solely responsible for promoting economic diversity, but it is also playing a crucial role in establishing the country as a prominent center for technical progress within the region. In the context of the Philippines, Information Technology (IT) assumes a role that extends beyond mere utility, instead emerging as a potent catalyst that shapes the economic terrain of the nation (Castro, 2022).

The aforementioned factors contribute to the facilitation of effective governance, promotion of economic growth via the IT-BPM sector, reduction of the digital divide, provision of valuable insights for data-driven decision-making, enhancement of cybersecurity measures, and cultivation of an environment conducive to innovation (Kumar, 2018). As the Philippines progresses towards achieving sustainable economic growth, the strategic incorporation of information technology (IT) will continue to play a crucial role in driving

progress and ensuring a more promising future for the Filipino population. The ability of a nation to effectively utilize technology to build its future in the era of digitalization is indicative of its resilience and adaptability (Kumar, 2018).

The significance of Information Technology in the administration of economic development in the Philippines is indisputable; yet, it is not exempt from encountering problems and opportunities for enhancement (Bajar, 2021). The significance of Information Technology in the administration of economic development in the Philippines is undeniable; yet, it is not devoid of obstacles and opportunities for enhancement. Continuous investment in cybersecurity infrastructure and education is important due to the dynamic and developing nature of cyber threats (Bajar, 2021).

The establishment of partnerships between public and corporate sectors, along with fostering international cooperation, is of utmost importance in maintaining a competitive edge against cybercriminals. The importance of data privacy becomes crucial in light of the growing utilization of data (Philippine Commercial Center, 2021). The efficient enforcement of legislation, such as the Data Privacy Act, is vital in safeguarding individuals' personal information. The perpetual difficulty lies in addressing the need for a proficient IT labor force (Khatiwada, 2020). The provision of STEM education and vocational training is necessary in order to adequately equip the upcoming generation for the demands of the digital workforce. In order to sustain its competitive edge, it is imperative for the Philippines to consistently nurture its innovation ecosystem. This include the provision of assistance to new enterprises, facilitating the availability of venture financing, and establishing a conducive ecosystem for fostering entrepreneurial activities (The World Bank, 2020).

The role of Information Technology (IT) in the administration of economic development in the Philippines can be characterized as a narrative of advancement, metamorphosis, and adaptability (Romero, 2023). Information technology (IT) has not only facilitated the enhancement of government services, but it has also played a crucial role in driving economic growth, expanding access to opportunities, and fostering creativity. In the context of the digital era, it is imperative for the Philippines to maintain its dedication towards digital inclusivity, data protection, educational advancements, and innovative practices (Hinkley, 2023).

This commitment is essential to ensure that the advantages of information technology are accessible to every member of its population. Through the implementation of strategic investments and the adoption of forward-thinking policies, the Philippines is in a favorable position to actively design a future characterized by prosperity, wherein technology plays a pivotal role as a catalyst for sustained economic growth and enhanced standards of living (Nfon, 2021).

METHODOLOGY

Research design

The selected research design for this study, namely descriptive-quantitative, is very appropriate for investigating the research inquiries pertaining to the involvement of Information Technology in the management of economic development in the Philippines. The utilization of a descriptive methodology enables the researcher to methodically gather and arrange data in order to present a lucid and all-encompassing depiction of the present condition of information technology integration within the framework of economic development. This study facilitates the examination of multiple dimensions, including the influence of information technology on governmental services, economic sectors, and digital infrastructure.

The study design incorporates a quantitative component that complements the descriptive technique by facilitating the acquisition of numerical data through the administration of surveys. The utilization of this systematic approach to gathering data yields quantifiable insights into the perceptions, attitudes, and experiences of stakeholders. The study can employ closed-ended and Likert-scale questions to conduct a quantitative analysis of replies, enabling statistical comparisons and the formulation of generalizations.

Locale of the study and respondents

The study was conducted within the context of the Philippines, focusing on the role of Information Technology (IT) in economic development across various regions of the country. The respondents of the study were drawn from a diverse array of stakeholders, including government officials, individuals working in the IT-BPM industry, and members of the general Filipino population. The selection of respondents aimed to capture a comprehensive understanding of the impact of IT on different sectors and regions, encompassing both urban and rural areas to address the digital divide and promote inclusive economic growth.

Research instruments

Surveys play a pivotal role in this study as they possess the capacity to effectively gather data from a diverse array of individuals or groups with a vested interest in the research topic. The utilization of a structured questionnaire facilitates the collection of consistent information, hence enabling the quantification of responses. The utilization of Likert-scale questions enables researchers to obtain a quantitative evaluation of participants' perspectives, hence facilitating the analysis of trends and patterns in their responses.

The analysis of government reports, policy documents, and academic literature is a crucial aspect of the research methodology. The article offers historical context, elucidates patterns in governmental policy, and presents a substantial amount of quantitative data, including figures pertaining to investments in information technology and the corresponding economic growth. The present document analysis serves to facilitate the construction of a comprehensive perspective pertaining to the interplay between information technology (IT) and the process of economic development.

Case studies are an invaluable tool for acquiring comprehensive understanding of unique occurrences in which information technology (IT) has played a crucial role in fostering economic advancement. The employment of interviews, observations, and document analysis within case studies facilitates a qualitative examination of practical implementations of information technology. The integration of qualitative and quantitative data derived from case studies enhances the comprehensive analysis and offers contextualization to the quantitative findings.

Data analyses procedure

The data analysis for this study involved a combination of descriptive and content analysis methods. Descriptive analysis was employed to summarize the quantitative data collected from surveys, utilizing statistics such as frequencies, percentages, means, and standard deviations. This approach provided a clear overview of the respondents' perceptions and experiences regarding IT integration in economic development. Additionally, content analysis was utilized for the qualitative data derived from document reviews and case studies. This involved systematically coding and categorizing textual information from government reports, policy documents, and academic literature to identify recurring themes, policy trends, and significant numerical data. These methodologies collectively facilitated a comprehensive analysis, enabling the study to generate meaningful insights into the role of IT in the administration of economic development in the Philippines.

FINDINGS AND DISCUSSION

Level of satisfaction of the Filipino citizens in the integration of information technology in government's administrative functions

The score of 3.09, which is categorized as "Highly Satisfied," indicates that a considerable proportion of Filipino residents express contentment with the level of IT integration in government administrative tasks. This suggests that individuals see online government services as easily accessible, user-friendly, efficient, and transparent. Moreover, it is probable that individuals see the integration of information technology (IT) as having improved the overall quality and convenience of government services.

Nevertheless, it is crucial to acknowledge that although the general satisfaction rating is favorable, it does not necessarily imply the absence of areas that could be enhanced. Even in instances where there is a high level of satisfaction, there exists the possibility of further optimizing specific parts of IT integration or specialized government services in order to more effectively fulfill the demands and expectations of residents. The grade of "Highly Satisfied" indicates that a considerable proportion of Filipino citizens perceive digital government services as convenient and user-friendly. This finding suggests that government websites and online platforms have been developed with a high level of effectiveness, hence facilitating convenient access to information and seamless completion of transactions for residents. The pleasant user experience is expected to encompass various features, including but not limited to, a well-defined navigation system, user-friendly forms, and prompt processing of requests. These elements collectively contribute to the overall happiness of residents.

A rating indicating high satisfaction implies that citizens hold the belief that government websites and online resources effectively deliver information that is both clear and current. Transparency plays a key role in facilitating citizens' access to correct information pertaining to government services, regulations, and procedures. The availability of information in a timely and trustworthy manner plays a crucial role in fostering public trust in government initiatives. The positive assessment further suggests that the incorporation of information technology has enhanced the efficacy of governmental services. It is probable that citizens receive expedited response times from government entities when utilizing online services, hence resulting in diminished bureaucratic delays and enhanced efficiency in administrative procedures. Moreover, the sense of heightened transparency suggests that individuals hold the belief that the integration of information technology has resulted in a greater degree of openness and accountability inside governmental procedures.

Notwithstanding the designation of a "Highly Satisfied" rating, it is imperative to acknowledge that there may nevertheless exist particular domains that warrant enhancement. Continuous feedback techniques, such as surveys and user reviews, can be utilized to discover these areas. It is imperative for government entities to have a proactive approach in addressing difficulties and concerns presented by citizens in order to uphold and maybe enhance levels of satisfaction. The positive grade serves as evidence of the government's dedication to digital governance and its substantial investment in IT infrastructure and services. The aforementioned level of dedication is of utmost importance in guaranteeing that information technology (IT) continues to serve as a significant instrument in promoting administrative effectiveness and fostering economic growth.

The aforementioned statement suggests that information technology (IT) has played a substantial role in boosting the overall user experience, facilitating access to information, improving operational efficiency, and fostering transparency within government services. In

order to maintain and potentially enhance this level of satisfaction, it is imperative for policymakers and government agencies to persist in their endeavors to optimize and broaden digital government services, all the while maintaining attuned to the growing requirements and expectations of citizens.

In order to optimize the incorporation of Information Technology (IT) within the administrative operations of the government and uphold or potentially enhance the existing level of satisfaction, it is recommended that policymakers and administrators persist in actively seeking input from citizens, effectively addressing any apprehensions, and persistently striving for ongoing enhancements in digital government services. This methodology can effectively contribute to the maintenance or potential growth of a favorable rating over an extended period.

Factors affecting the integration of information technology in the administration of economic development in the Philippines

The result shows that the integration of Information Technology (IT) in the administration of economic development in the Philippines is influenced by a multitude of intricate and formidable elements, which are difficult to circumvent due to a confluence of historical, geographical, economic, and socio-cultural circumstances. These issues are intricately intertwined within the country's developmental context, and although they may be somewhat alleviated or tackled, they cannot be completely circumvented. The Philippines exhibits a notable range of geographical diversity, characterized by its extensive archipelago and diverse topography. This intrinsic geographical complexity poses inherent difficulties in establishing and maintaining a uniform and reliable digital infrastructure and connection over the entirety of the country. The establishment and upkeep of digital infrastructure in geographically isolated and challenging regions necessitates significant logistical and financial resources. Although there may be attempts to enhance infrastructure, the presence of geographical limitations will invariably present certain difficulties in achieving equitable IT accessibility.

The dynamic and continuously evolving nature of cyber threats necessitates the recognition that cybersecurity risks are an inherent and integral component of the digital environment. The capabilities of cybercriminals are enhanced in tandem with the progression of technology. Although many strategies can be implemented to reduce the impact of risks, completely eradicating all potential cybersecurity dangers is highly improbable. Cultural attitudes and cultural standards are strongly entrenched and undergo gradual evolution over extended periods. The process of aligning these cultural variables with IT integration efforts might be a gradual one. While it is true that awareness campaigns and education can contribute to the promotion of alignment, achieving total alignment may present certain challenges. Comprehensive integration of information technology necessitates sufficient financial and human resources. Nevertheless, the challenges posed by resource restrictions, such as financial constraints and a scarcity of personnel, might prove to be formidable obstacles that are not easily surmounted in their entirety. The process of reallocating resources necessitates making choices amongst different options and may necessitate a certain amount of time to attain the intended results.

The establishment of a resilient and highly advanced digital framework serves as the fundamental basis for the successful integration of information technology. The concept involves the provision of dependable broadband internet access, the establishment of efficient communication networks, and the deployment of innovative technologies. The Philippines' economic development is significantly influenced by the quality and accessibility of infrastructural aspects, which in turn determine the effectiveness of harnessing information

technology (IT). The absence of sufficient digital infrastructure can pose substantial challenges for several endeavors, including e-government services, digital business transactions, and online education, especially in rural and distant regions. Ensuring the security of digital systems and data is a critical concern in the contemporary digital era.

The implementation of cybersecurity measures is necessary in order to ensure the protection of sensitive information, mitigate the risks posed by cyber threats, and uphold public confidence in online services. The implementation of robust cybersecurity measures, in conjunction with the enforcement of rigorous data privacy laws and regulations, fosters a secure environment conducive to the integration of information technology. Addressing these factors is of utmost importance in the Philippines to mitigate the occurrence of data breaches, cyberattacks, and privacy violations, as these might potentially impede the integration of information technology in administrative operations and economic endeavors. Digital inclusion encompasses the objective of providing equal and fair access to technology and internet services for all sectors of society, irrespective of their geographical location or socioeconomic standing. The significance of this issue is crucial in the context of the Philippines, where differences between urban and rural areas continue to persist. Efforts aimed at mitigating the digital gap, such as the establishment of community e-centers and the provision of inexpensive technology access, play a pivotal role in facilitating the inclusion of those residing in underserved regions into the digital economy. Digital inclusion plays a pivotal role in fostering economic development by expanding the range of individuals who may actively participate in various economic activities. Additionally, it serves as a catalyst for promoting social fairness and mitigating disparities within a nation.

Although it is not possible to entirely eliminate these influences, they can be effectively controlled and reduced by the implementation of well devised policies, strategic investments, educational efforts, and campaigns aimed at raising awareness. The acknowledgement of the inherent difficulties and the pursuit of sustainable resolutions are vital for the Philippines to advance in the integration of information technology and its contribution to economic growth. These issues ought to be perceived as prospects for innovation and adaptability rather than obstacles that cannot be overcome.

CONCLUSIONS AND RECOMMENDATION

The utilization of Information Technology in the management of economic development in the Philippines has unquestionably resulted in noteworthy alterations and transformational consequences within the nation. The aforementioned shift is particularly evident in the significant level of contentment exhibited by the Filipino population with regards to the seamless use of technology into government processes and offices.

The grade of "Highly Satisfied," which achieved a score of 3.09, serves as evidence of the concrete influence of Information Technology on the well-being of individuals residing in the Philippines. This indicates that the incorporation of information technology (IT) has not only optimized government procedures but has also enhanced the caliber of services rendered to the general populace. The accessibility, user-friendliness, efficiency, and transparency of online government services are perceived positively by citizens.

The aforementioned level of satisfaction highlights the efficacy of information technology (IT) in augmenting the user experience, increasing information accessibility, enhancing administrative efficiency, and fostering transparency. The aforementioned statement demonstrates the government's dedication to implementing digital governance and utilizing technology as a driving force for fostering economic growth. Overall, the Philippines is positioned as a leader in the process of digital transformation, and the contentment of its populace serves as evidence of the favorable results achieved via this

undertaking. Despite the presence of ongoing hurdles, the dedication to enhancing the integration of information technology (IT) inside administrative operations is propelling advancements. This commitment is vital in fostering a more streamlined and adaptable administration, thereby playing a pivotal role in setting a promising trajectory for the nation's economic growth.

In light of the aforementioned findings regarding the substantial impact of Information Technology on the management of economic development in the Philippines and the favorable reception among Filipino citizens, several recommendations are proposed for policymakers and stakeholders. Firstly, it is crucial for the government to continue allocating resources toward the development of IT infrastructure to ensure equitable access to reliable and high-speed internet connectivity across all regions, including rural and remote areas. This will enhance digital inclusion and extend the benefits of IT integration to all members of society. Secondly, government agencies should prioritize user-centric design principles when developing.

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