Effectiveness of the Belize Police Department
Crime Management Information System

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Abstract

Moodle is a learning platform used for distance education, flipped classroom and other e-learning projects in schools, universities, workplace and another sector. With customizable management features, it is used to create private websites with online courses for educators and trainers to achieve learning goals. The purpose of \this study was to see if the implementation of Crime Information Management System was a success and if the MIS was benefiting the officers from the Belize Police Department. When conducting our study, we had 31 participants, 23 males and 8 females. From the data we collected it was shown that most officers believe the system to be successful. The system was moderately positive to the respondents, which means that there are still some improvements that can be done to the system to meet the needs and requirements of officers from the Belize Police Department.

Key Words: Police Department, CIMS, Crime Information Management System

Introduction

Management information system (MIS) broadly refers to a computerized database system that provides managers with the tools to organize, evaluate, and efficiently manage departments within an organization. (Beal, 2017) Furthermore, the main purpose of the MIS is to give managers feedback about their own performance; top management can monitor the company. Information displayed by the MIS typically shows "actual" data over against "planned" results and results from

In addition, the role of the MIS in an organization can be compared to the role of heart in the body. The information is the blood and MIS is the heart. In the body the heart plays the role of supplying pure blood to elements of the body including the brain. The heart work faster and supplies more blood when needed. It regulates and controls the incoming impure blood, processes it and sends it to the destination in the quantity needed. It fulfils the needs of blood supply to human body in normal course and in crisis. The MIS plays the same role in the organization. The system ensures that an appropriate data is collected from the various sources, processed and sent further to all the needy destinations. The system is expected to fulfil the information needs of an individual, a group of individuals, the management functionaries: the managers and top management. (Augustine, 2016)

Moreover, The Police Department is utilizing Crime Information Management Systems for the use of their officers; workers. The CIMS is a powerful data storage, search/retrieval and analysis tool. It has been designed to help you spend less time on paperwork and searching through files, and more time doing the rest of your job, by making it quicker and easier to Input and save information. Find information stored in one or more databases, one or more servers. Share

information with co-workers. And link together pieces of information to build a picture of connections or a pattern of behavior (crime pattern analysis)

In conclusion, the purpose of this research is to determine how effective this information system is for the Police Department and its stakeholders (Officers and management). Also, to be able to discover if it is beneficial for police department to keep investing in such information system and to see which way is best for the organization. The research is also intended to study the effectiveness and success of CIMS and Police Department with the intention to improve or maintain the system. The data collected from this study will gain a deeper understanding into the expectations of officers regarding the CIMS system. Since officers are the main priority for this organization it is very critical to maintain staff satisfaction at all time.

Literature Review

Literature shows that the trend for government entities is technology. Technology offers government, reduced cost in operations, promotes effectiveness and efficiencies throughout the government offices.

Government aim at providing services in an efficient and effect manner. However, the major obstacles to effectiveness in government, are funding and administration. Using technology in government, you can collect data, store, organize, and share information.

Police often collect and store information. In the past, it was done manually and as such information was at risk for being misplaced and lost. Today, however, this information are transformed from manual to digital using the Management Information System to record, store, organized, analyse and share information.

From research done by Delone and McLean an incorporated model of Management Information System was triumph and the technology organization environment provide a small and medium enterprise with the relative importance and knowledge of the system success (2003). The successes of implementing the management information system were evaluated through different measures and prove to enable performance improvement as stated by Ghibakhloo and Tang. There were another tributary of research of the information system that follows the categorization of the management information system was successful according to Delone and Mclean (Sheddon, P. B.1997). Further studies focus on accessing the success and the improvement of the MIS in the organization among employees. Teaching them the basics of the system model; so the human resource department can have a more effective business structure (Kato Y, 2008). It was also presented on how the MIS would aid the police department to be more effective in solving crimes and capturing criminals by means of the Geographic Information System (GIS). The GIS show various research examines and agree how necessary and useful the system is to achieve the goals of an institution or organization as stated by Maguire R. Edward (2010).

In an article named "Predictive Crime Mapping" conducted by J. Fritterer and one about a seminar conducted by the Executive Director of the International Association of Assessing Officers (IAAO) and Urban and Regional Information System Association (URISA) shows how managing the implementation and the success of the GIS in the police department would aids in the decrease of crime. Both the IAAO 9 and URISA seminar provided "A thorough overview concept, functions, applications, technologies, trends, problems and solutions associated with GIS" (2002). On another note research by J Fritterer would summarise and compare trends in crime activities at different places and to predict future crimes by aiding the police in their daily patrols (2015).

Presently to minimize crime rates the police departments are using a Crime Information Management System to improve their job environment by facilitation of collection, storing, and interpretation of data for future decision making. Similarly, the geographical information systems (GIS) is being used by many police officers to reduce crime rate being it's a main tool for intelligence led (Fritterer, Nelson, and Nathoo, 2015). Furthermore, where data, analysis and criminal theory are used for allocation and decision making is a growing system for growth and to guide police officers (Li, E. Y., (1997). Within a geographical context showing where crime occurs includes space and time, information to support intelligence-led police are increasingly map base and assistance from platforms that allows integration with the GIS. There are regions already using the spatial prediction to help police reduce crimes; example the Los Angeles police department has used spatial predictions of crime to estimate that geographical crime rates to decrease and pre-emptively allocate patrol units in various areas.

Methodology

At the Police Information Technology Unit, Belize Police Department – Western Division Cayo District it can be determined that a vast majority of the officers use the Crime Information Management System to conduct all their crime - based work as well as to provide a secure environment in which to store intelligence information, which are distributed by the Senior Officers. The nature of Implementation of the CIMS demonstrates a more professional and ethical approach to report data handling. This will enable us to continue to develop the investigative and crime reduction capacity of a modern national system, confident that it can stand scrutiny and help improve operational performance. It also allows the Belize Police Department to approach issues of disclosure with greater confidence that the data will be relevant, timely and accurate. The recent Delone and McLean Information Success Model were used by the researchers to measure the effectiveness of the SIGTAS. The Model was developed by William H. Delone and Ephraim R. McLean in 1992. After its introduction, many critics uttered for an update that occurred in 2003. A study was conducted to see how efficient and effective CIMS has been to the officers and to verify if it has indeed boosted up the productivity of works being done for both the officers and staff members i.e. Sergeants. The research was conducted in a quantitative method that corresponded via insights of the six success dimensions. So, being that the efficiency and effectiveness of the PITU was being evaluated, there are certain other aspects which were also looked at specifically being the complementary technological quality, service quality and the user benefits and satisfaction.

Information Quality: It focuses on the distinction of the system formation and how reliable it is to the SIGTAS users. It also measures the availability of information to the users at the time they are ready to use it and if it is helpful at the time of performing their task.

System Quality: It is an interactive feature that reflects functionality, performance attributes, usability, user-friendliness and easy.

Complementary Technology Quality: Measure the technology adequacy and its performance when the user accesses the SIGTAS program.

Computer Self-Efficacy: Focuses on the self-efficacy of the users and the impact it causes on their expectations

Service Quality: This deals with the service provider (CITO) and their actions of support whenever a problem is encounter within the SIGTAS system. While carrying the performance it encounters properties such as employee capacity, performance, empathy, and receptivity.

User satisfaction: It tackles the attitude of the users towards the information system which tests the user's overall satisfaction with the effectiveness of the process and its aspirations of its users.

The Role of Technology within the Police Department

When we refer to police and information, we cerebrally refereeing to three concepts (1) information, (2) information management, and (3) analysis.

Information refers to a broad range of data available to police executives, patrol officers, and administrative staff, such as crime events, victim/offender characteristics, criminal histories, dispatch records, and the like. Information is used to evaluate recent and emerging trends, forecast future events, prepare and present reports. This information is not solely geared towards crime. Police Departments gather information as it relates to staff and personally performance and other work-related information. A related concept, **information management**, relates not only to information itself but how the information is further utilized within police organizations. Thus, information management refers specifically to types of technology devised to collect, analyze, and report information. For example, a police department often has one system to manage criminal incident and arrest data, a separate system to manage dispatch data, and a third system to manage administrative data. When we look at analysis, we generally think data analysis, but most police departments regularly characterize **analysis** of information in terms of crime analysis. Crime analysis involves the collection and processing of information for the purpose of problem solving and planning. Information is analyzed in ways that represent spatial, temporal, and topological patterns of crime. The terms

information, information management, and information technology are used interchangeably, and reflects the marrying of both information and technology that produce an analytical outcome that police can use in their daily operations.

The Symbolic Role of Information

There is the argument that information and technology are an inherent part of attempts to "rationalize" policing. (Manning 2001) In this respect, information-technology is viewed not just as a discrete process with specific functionality, but part of a larger institutional shift in policing.

In general, the early 20thcentury involved a broader movement toward organizational accountability and rationalization; and policing was a beneficiary of this movement. For instance, collecting and analyzing information created a more bureaucratic work environment for police (Gaines, Worrall, Southerland and Angell2003). Information is crucial to the rationalization process of policing; it is central to budgeting, management, personnel allocation, and career guidance. Moreover, it serves "the public in an explicitly calculative fashion" (Manning 2001, 84). Policing is driven by internal and external pressures to resemble rationalized bureaucracies. There are "market-driven demands" placed on police organizations to increase efficiency and effectiveness and information technology plays a part in this transformation (Manning 2001, 88). It has widely been stated that Information Technology has been mischaracterized according to two distinct symbolic policing purposes: (1) formal authority and (2) organizational respect and prestige. Symbolically, information technology represents the formal authority system of organizations (Manning 2003). However, the quality of the information or the usefulness of it was necessarily of great importance. Instead, information represents organizational-technocratic imperatives dictating that certain commands and processes are followed, regardless of their practical application. There are opposing views to Manning, information technology is bureaucratic in nature and sets standards of accountability. Police case studies documenting the degree of information technology initiatives support the conclusion that technology is regularly underutilized (Skogan, Hartnett, DuBois, Bennis and Kim 2003).

It was quite frequent and common to hear officers complain and express their frustration about conducting field interviews (FI) because such information is filed away and never analyzed. Officers are sometimes concerned that FI's serve a management versus crime fighting purpose. Information technology also holds the symbolic potential for providing a degree of respect as it implies access to resources, commitment to innovation, organizational leadership, and a degree of sophistication among employees. A lack of information technology can also signify a "backward" agency unable or unwilling to keep up technological changes. For example, in 1992 the Commonwealth of Massachusetts merged the Metropolitan District Commission (MDC) police force with the Massachusetts State Police in an effort to better coordinate resources. The Massachusetts State Police absorbed much of the MDC personnel into their operations. Former MDC officers deeply resented the merger because they were reassigned from a technologically advanced organization with mobile computers to a department that was technologically antiquated. A former MDC officer reported that "a good number of patrol cars still don't have mobile computers, nearly 15 years after the merger" (O'Connell 2004). This attitude is reflective of the pride associated with being part of "technologically advanced" organizations. It has also been shown that departments have been awarded accolades based on their level of technology. New York Police Department's CompStat program has received awards from Harvard University and recognition from former Vice President Al Gore due to their commitment to implementing information-driven crime reduction and management practices (Weisburd, Mastrofski, Greenspan and Willis 2004).

Other Crime-Related Information Systems: Case Management Systems

Automated Fingerprint Identification Systems (AFIS) collect and store images of fingerprints. AFIS systems are coordinated at the state and national level. The Integrated Automated Fingerprint Identification System (IAFIS) is a national database that stores ten-print fingerprint images and integrates this information with criminal history information. Fingerprints are collected for criminal (e.g., pursuant to an arrest) and non-criminal (e.g., when individuals apply for employment requiring criminal history checks) purposes. Prior to implementation of the IAFIS system in 1999, manual fingerprint searches took months.

Using Information in Police Organizations.

The capacity of police organizations to collect information has evolved considerably over the last couple of decades. Governments have invested billions of dollars over the past few decades to build the information-technology infrastructure for law enforcement. The Office of Community Oriented Policing Services (COPS), one of the United States Department of Justice's major grant funding agencies, reports that it has committed over$1 billion in technology grants since 1995 (Office

of Community Oriented Policing Services 2002). The COPS office allocated nearly $400 million to crime fighting technologies in 2003 (United States Department of Justice 2005).

Information technology now represents a key area of policing. IT is the lifeblood of modern-day policing, management of information plays a critical role in many police organizations. Current technological infrastructures permit organizations to collect and record a plethora of data. Such information has the potential to "revolutionize "policing in ways not fully realized (Dunworth 2000, 379). Even with IT as the way forward it can come with its own unique set of challenges the challenge presented to executives and analysts is what to do with this information and, furthermore, how can this data assist an organization in achieving multiple organizational goals. Crime analysis offers significant ways to improve the daily operations of law enforcement agencies. It provides the capacity for "systematic analysis of data drawn from a series of criminal incidents rather than focusing upon a single incident" (Dunworth 2000, 390).

Crime Analysis was divided into four functions administrative support, investigation, clearing, and prevention (Reuland 1997). Administratively, information can be used to create patrol officer deployment strategies. Deployment strategies are commensurate with the size of the jurisdiction, nature of the crime problem, and complexity of the organizational structure. In smaller jurisdictions, for example, deployment strategies are relatively one-dimensional (e.g., patrol officer). Large cities, in contrast, have to coordinate coverage of multiple precincts and a variety of specialized units including traffic, investigations, and administrative support. Also, under crime analysis the data has been used by departments as part of their crime prevention and intervention. Police departments have invested heavily toward increasing their capacity to successfully reduce levels of crime. Depending on the crime and the data departments will use the information such as recent persons released from prison, known repeat offenders, gang activity in the area all this information will be used to plan, strategize and formulate a plan   to better police the area. Information is limited only by the data available to crime analysts and their creativity in understanding how it can be applied. In contemporary police organizations, specialized crime analysts may be sworn police personnel or non-sworn civilians. It has evolved into a largely specialized function that requires analysts who possess sufficient skills, analytical competencies, and an understanding of police-related business (Hickman and Reaves 2003).

To truly "revolutionize" policing as suggested by Dunworth (2000), information technology must have the capacity to create data-driven patrol approaches. By data-driven patrol, we are referring specifically to patrol and investigative strategies that are grounded in temporal and spatial characteristics of crime. Crime analysis units and/or personnel represent basic commitments to implementing data-driven patrol. There is no commonly agreed upon crime analysis "template" or standardized analytical strategy to address crime problems. Common strategies for presenting police information are through summary statistics that document citywide crime frequencies. Crime is not a social phenomenon that occurs at random. Crime follows certain temporal patterns by time of day, day of week, and season. Traffic problems, for example, may be more prevalent during early morning or late afternoon when people are commuting to/from work. Citizen complaints for disorderly youth might be greatest after school dismisses. In fact, research suggests that temporal patterns to juvenile crime corresponds closely with school dismissal hours (Snyder and Sickmund 1999). Robinson's (2004) notion of "spatial interplay" suggests that geographical concentration of crime is associated with land use (e.g., commercial versus residential). Socialization patterns may vary based on day of week, which increases chances of victimization. Further inquiry into this situation could possibly reveal victims of weekday robberies that occur between 4pm and 11pm are employees of local companies socializing with colleagues who become unwitting victims. Similarly, robberies that occur on weekend nights might be reflective of cultural norms that delay socialization patterns to later on weekends. Nevertheless, understanding such temporal patterns provides insight into how patrol resources should be deployed and how prevention efforts might be implemented.

Crime also follows certain spatial patterns. The idea of crime "hot spots" for example denotes that crime is not randomly assigned but instead is disproportionately concentrated in certain locations. Most police departments divide their jurisdiction into smaller geographical units known as "zones," "precincts," "sectors," or "districts," and assign officers to such geographical locations across shifts.

When computers were not available, departments placed pins on large city maps that were mounted on walls. Each pin represented crime event and police personnel used such maps as a way to track crimes geographically (Mamalian and LaVinge 1999). While pin maps depicting the locations of crime events are interesting, their limitations are notable. They are of little value if one is attempting to utilize such information to direct crime reduction patrol strategies. To account for this problem, hotspot analysis has been developed as a way of determining specific locations where crime is disproportionately concentrated. Hot spot analysis amounts to a statistical evaluation that evaluates the clustering of events. Hot spot analysis can be conducted using a host of analytical tools, yet one of the most common is a free software program developed on behalf of the National Institute of Justice known as CrimeStat.

The future of Crime Management Information Systems within Police Organizations.

At the beginning of the 21st Century police organizations are under pressure to institutionalize information technology. Police organizational worldwide are faces with both internal and external pressures. On one hand, internal pressures result from new management models that place greater demands on efficiency and accountability and on the other hand external pressures are characterized by the publics' demand for law enforcement organizations to resemble more professional. As the law enforcement community looks toward the future. Police Organizations need to focus on three core areas, (1) continue to expand the technological infrastructure, (2) expand technical and analytical capacities, and (3) become information-driven aimed at proactive police strategies.

Inception

Inception of the CIMS stated in 2012 with the pilot project being done in Belmopan, Belize City and after the success it was launched in San Ignacio after which the rest of the country. Its central location is at the Police Information Technology Unit (PITU) Office at Belmopan Headquarters and will be accessible by persons in the Belize Police Department with a computer linked to the network and with the appropriate security clearance only.

Effectiveness:

CIMS has been design to help you spend less time on paper work and searching through files, and more time doing the rest of your job, by making it quicker and easier to input and save information, find information stored in one or more databases, one or more servers, share information with co-workers, link together pieces of information to build a picture of connections or a pattern of behaviour (crime pattern analysis).

Information available to officer:

CIMS can store practically any type of information including files generated in other Windows applications (such as police statements, reports, other forms etc, in Microsoft Word), images (such as photos and scanned documents) audio clips and videos (footage of surveillance, robbery scenes ect).

Finding Information:

Crime Information Management System (CIMS) uses the Memex Intelligence Engine to search for information stored in the system. The Intelligence Engine is a powerful database engine that resides on the server and can perform complex, high speed searches through large volumes of structured or unstructured data.

Liking Information:

Crime Information Management System (CIMS) uses the Memex Intelligence Engine to search for information stored in the system. The Intelligence Engine is a powerful database engine that resides on the server and can perform complex, high speed searches through large volumes of structured or unstructured data. The ability to link data is one of the keys to turning information into quality intelligence. The Link Manager module includes intuitive, visual methods of creating and maintaining links, enabling you to analyse the data in the system, without requiring you to learn any programming commands.

Scope:

The use of CIMS and any Interface to CIMS is restricted to those police officers and employees who have been trained and authorized to use the system. Users must not divulge their user identification or any passwords to unauthorized persons.

Benefits:

Implementation of the CIMS demonstrates a more professional and ethical approach to report data handling. This will enable us to continue to develop the investigative and crime reduction capacity of a modern national system, confident that it can stand scrutiny and help improve operational performance. It also allows the Belize Police Department to approach issues of disclosure with greater confidence that the data will be relevant, timely and accurate. Features in this system includes update, delete, and modify records of cases and complaints given by citizens; Update criminal bio data to centralized database which is visible to different departments. Police system will be computerized and most of the work is done through online. Communication between different stations will be easy and fast. Easy to manage citizens' complaints, criminal's data management. Data is secured and data is stored in database.

Logical Servers and Entities:

In CIMS, all Police Formations are set up on Logical Servers, each containing an array of databases referred to as Entities. Each entity is created in house to suit the Belize Police Department's needs. They have an array of print templates to make selective customized printouts for internal use and also for dissemination.

Hypotheses I:

H_0: There is no difference in officer's perception of the success of the CIMS
H_1: High ranking officers perceive the CIMS to be successful.

Questionnaire:

Thirty-one (31) questionnaires were distributed to San Ignacio, Succotz and Benque Viejo Police Officers. Of these 100% were completed and returned (Figure 1). Three-point two percent (3.2%) were Inspectors, 9.67 % were Sergeants, 19.35 % were Corporals and 67.74% were Constables.

Return Rate of Questionnaires

■ San Ignacio   ■ Succotz   ■ Benque Viejo
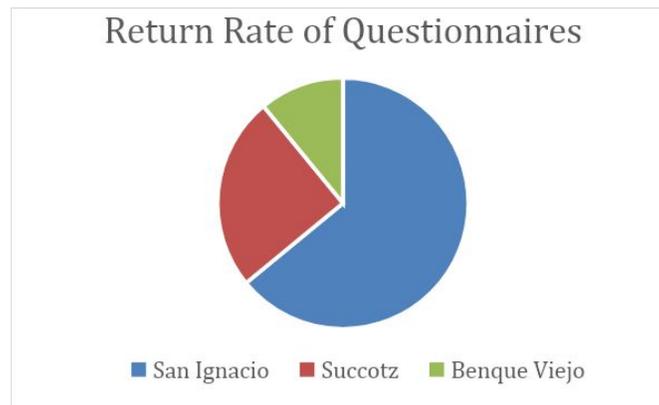
Figure 1

Descriptive Statistics

Questionnaire items consisted of the Likert Scale format ranging from Strongly Disagree (1) to Strongly Agree (7). For the purpose of this study, these seven responses were recoded as follows: Strongly Disagree (1), Disagree (2), and Somewhat Disagree (3) were categorized to indicate responses that did not perceive the CIMS to be successful. Neither Agree nor Disagree (4) were categorized to indicate responses that had neutral option. Somewhat Agree (5), Agree (6) and Strongly Agree (7) were categorized to indicate responses that perceived the CIMS to be successful. Criteria used to measure the success of the CIMS included: Background Information, Information Quality, System Quality, Complementary Technology Quality, Service Quality, User Satisfaction, Use and Perceived Net Benefits.

Analysis of the Data

Demographics

Table 1: Demographics Characteristics of respondents		
Gender		
Male	23	74.19%
Female	8	25.81%
Total	31	100%
Age		
<25	6	19.35%
36-45	22	70.98%
46-55	3	9.67%
Total	31	100%

		Rank in the PD	
Police Constable	20	64.51%	
Corporal	6	19.35%	
Sergeant	3	9.67%	
Inspector	2	6.47%	
Total	31	100%	
		Working Experience	
<5	5	16.14%	
5-10	9	29.03%	
11-15	8	25.80%	
15<	9	29.03%	
Total	31	100%	

Perception on the Success of the CIMS

Criteria	Questions	**POSITIONS**						
		Strongly Disagree	**Disagree**	**Somewhat Disagree**	**Neutral**	**Somewhat Agree**	**Agree**	**Strongly Agree**
Information Quality	1		9.68		16.13	41.94	22.58	9.68
Information Quality	2		9.68	9.68	9.68	38.71	22.58	6.45
Information Quality	3	6.45	9.68	6.45	9.68	29.03	32.26	6.45
Information Quality	4	3.23		12.9	16.13	29.03	35.48	3.23
Information Quality	5	6.45	6.45	3.23	9.68	32.26	32.26	12.9
Information Quality	6		9.68	3.23	25.81	25.81	25.81	9.68
Information Quality	7		3.23	9.68	16.13	35.48	19.35	16.13
System Quality	1	6.45	9.68		9.68	25.81	29.03	19.35
System Quality	2		9.68		12.9	35.48	32.26	9.68
System Quality	3	3.23	3.23	6.45	19.35	22.58	41.94	3.23
Complementary Technology Quality	1	9.68		9.68	6.45	35.48	35.48	3.23

Complementary Technology Quality	2	6.45	12.9	6.45	12.9	29.03	29.03	3.23
Service Quality	1	3.23	6.45	3.23	22.58	35.48	19.35	9.68
Service Quality	2	3.23		12.9	6.45	29.03	29.03	19.35
Service Quality	3	3.23	3.23	3.23	16.13	29.03	29.03	6.45
Service Quality	4	3.23		6.45	9.68	48.39	29.03	3.23
User Satisfaction	1	3.23		3.23	12.9	29.03	29.03	22.58
User Satisfaction	2		3.23		19.35	32.26	29.03	16.13
User Satisfaction	3				12.9	25.81	45.16	16.13
User Satisfaction	4		6.45	3.23	6.45	25.81	38.71	19.35
Use	1				16.13	35.48	38.71	9.68
Use	2				19.35	29.03	41.94	9.68
Use	3			3.23	9.68	22.58	41.94	22.58
Use	4		3.23	3.23	6.45	25.81	32.26	29.03
Perceived Net Benefits	1	3.23	6.45		9.68	19.35	48.39	12.9
Perceived Net Benefits	2	6.45		9.68	6.45	32.26	35.48	9.68
Perceived Net Benefits	3	3.23		9.68	9.68	35.48	35.48	6.45
Perceived Net Benefits	4	3.23		9.68	9.68	32.26	35.48	6.45
Perceived Net Benefits	5	3.23		6.45	9.68	32.26	32.26	16.13
Perceived Net Benefits	6	3.23		9.68	12.9	22.58	45.16	6.45

Table 1 illustrates the Demographics of the respondents; most of the respondents were males being 74.19% and females being 25.81%. Most respondents in the workforce were between the ages of 36-45 (70.98%) and the least being between 46-55 (9.67%). In ranking, the majority being 64.51% which were PC with only 2 respondents (6.47%) being Inspectors.

Information Quality
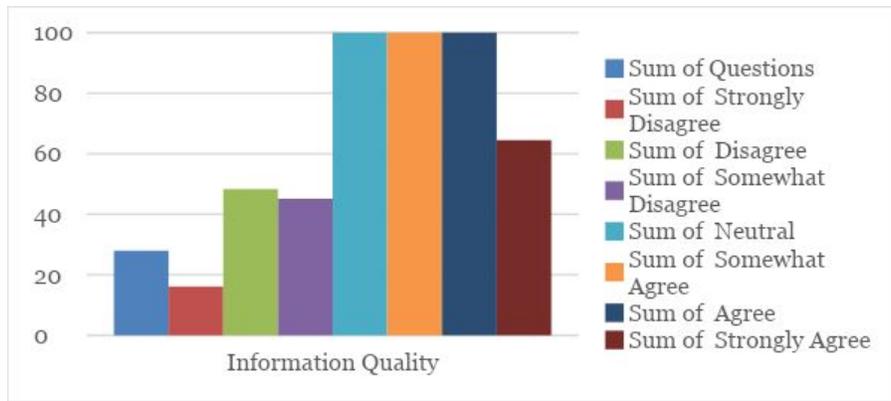
Bar Chart 1 illustrates the results gathered for the information Quality Dimension

From a sample population of Officers Likert Scale. This indicates that most employees using the Crime Information Management System felt the value of the system productivity was satisfactory and could be improved in the future workplace with 15(48.38%) giving a rating of 2 meaning information can sometimes be inaccurate or requires additional effort in comprehending.
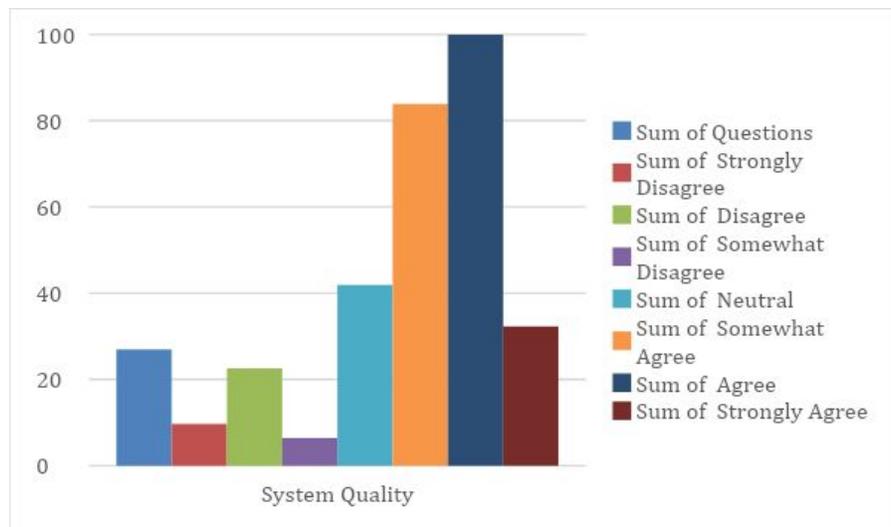
Bar Chart 2 illustrates the results from the System Quality Dimension

From a sample population of 31 officers using the CIMS, the majority of the officers being 13(40.6%) gave a rating of 3 using the Likert scale with 15 giving a rating of 1 and 2. The result can conclude that employees evaluated the system could be more user-friendly and interactive features to use to the system in a more efficient and effective method.
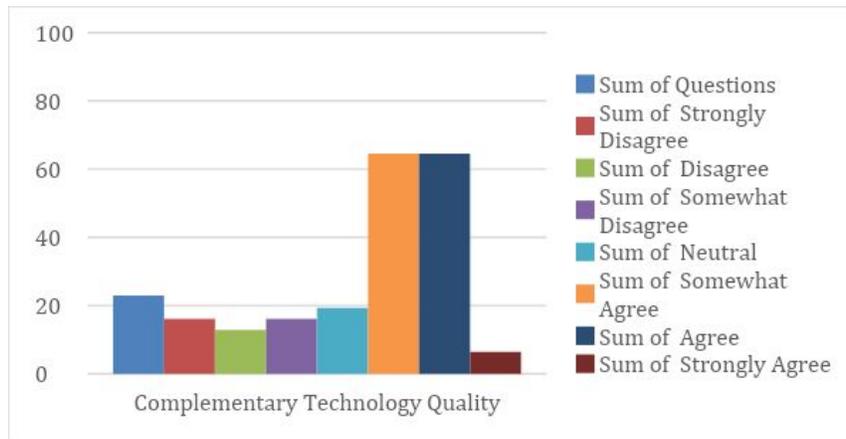
Bar Chart 3 illustrates the results from the Complementary Technology Quality dimension

From a sample population of 31 officers using the CIMS, most of the officers being 16(51.61%) gave a rating of agreeing while others agreed somewhat on the scale with 9 employees giving 1 and 2 using the scale. The result can conclude that complementary technologies that support the Standard System can be improved for better assistance to the officers at the police department.
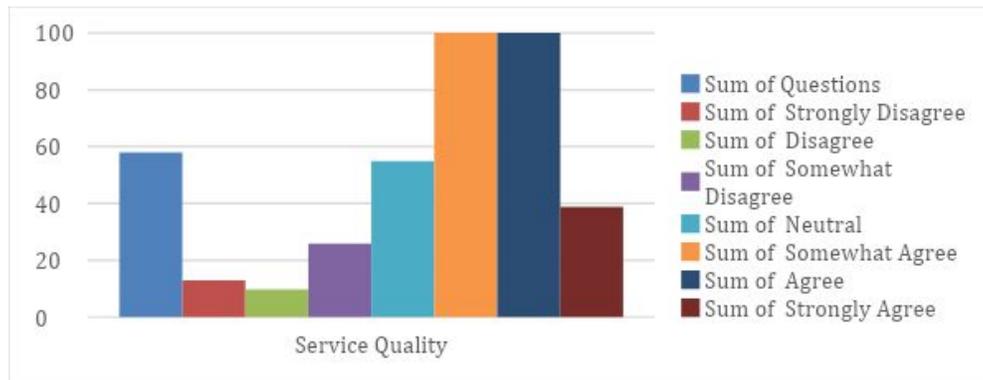
Bar Chart 5 illustrates the average results from Service Quality Dimension

From a sample population of 31 officers using the CIMS, the majority of the officers being 12(38.71%) gave a rating of agree while other somewhat agreed on the scale meaning most employees have support from the operating staff managing the system with 16 officers rating some disagreement while other neutral. The service quality is not too great with the CIMS supported management system making Service Quality the lowest-rated Dimension.

From a sample population of 31 workers using the CIMS, majority of the officers being 13(40.6%) gave a rating of 2 on Scale with the second highest being 3 representing 11(34.4%) meaning most users of the CIMS are unsatisfied and that system does not meet their requirements.
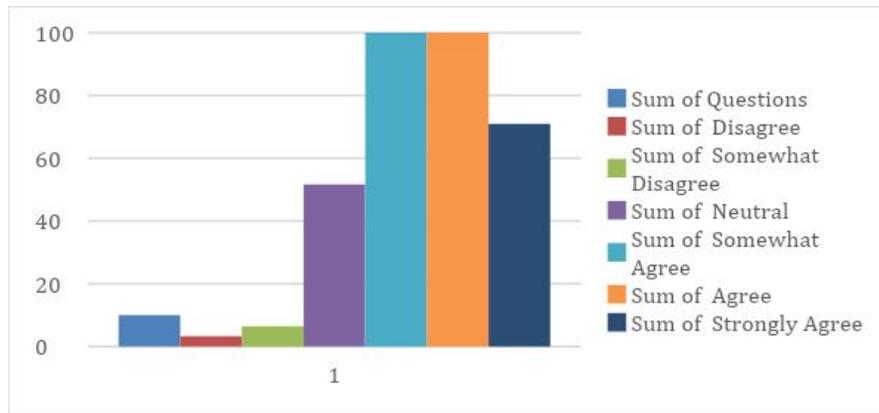
From a sample population of 31 workers using the CIMS, majority of the officers being 14(43.8%) gave a rating of 3 on Likert Scale with the second highest being 2 represented by 13(40.6%) meaning an average amount of the employees do not highly depend of the SIGTAS system for task or may not be knowledge of how to use the system in the workplace.
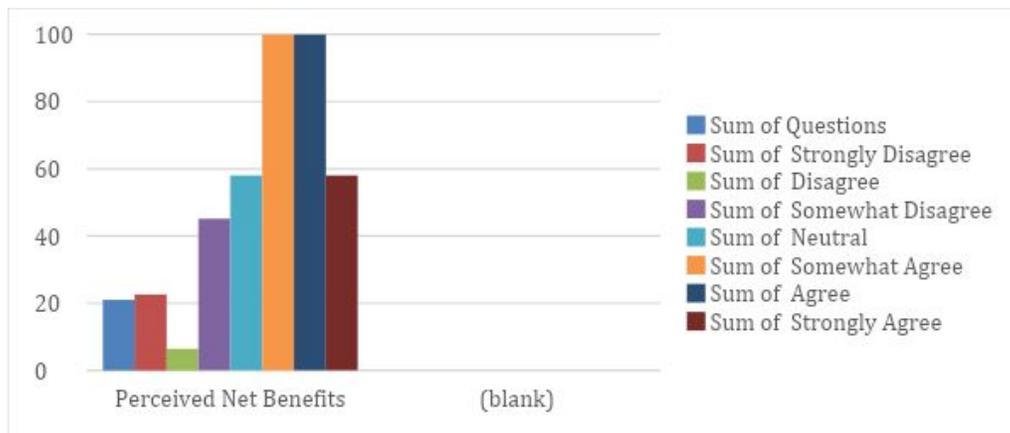
Bar Chart 8 illustrates the average responses report for the Perceived Net Benefits dimension

From a sample population of 31 officers using the CIMS, most of the officers 13(40.6%) gave a rating of 2 on the scale with the second-highest 3 of the scale voted by 12(37.5%) employees. From the data collected, the Belize Police Department (Cayo) does not fully utilize their system and incur benefits such as greater productivity and performance.

Hypothesis

Analysis of the data shows that there is no significant difference in the way Inspectors, Sergeants, Corporals and Constables perceive the success of the CIMS.

Most of the respondents indicated that they perceived the CIMS as being a success. (See Table 1). However, some respondents responded negatively to the questions with responses ranging from 3.23% to 12.90%. (See Table 1)

Although there were responses between the range 3.23% and 12.90%, majority responses agreed, ranging from 3.23% to 48.39%. Neutral responses range from 6.45% to 25.81%.

Conclusion

The purpose of this study was to find out if the CIMS is successful to the Police Department. The results of the questionnaires show that all level of respondents view the CIMS as an overall success, despite the few negative responses. Responses clearly indicate that they are satisfied with the overall net benefits and their usage of the CIMS.

The results of the questionnaires also indicate that the ranking of the officers perceive the usage of the CIMS differently. This may be because the CIMS is currently a part of the Police Academy curriculum and junior officers are required to take this training. The senior officers were not trained but got on the job training on the use of the CIMS.

The study reveals that the Police Officer perceive the CIMS as being successful. The Hypothesis was supported which signifies that all level of police officers perceives the CIMS to be successful.

Recommendations

Based on the findings from the data collected, the researchers recommend the following:

The Police Department needs to implement procedures that will effectively allow users of the CIMS to document faults and to provide feedback that will allow the IT department to fully assess the usage and determine if a back-up system is required. With continuous feedback, the IT department would be knowledgeable about the issues country-wide and would realize if a back-up system is needed because of the increased of usage.

The Police Department needs to implement more training to officers that were not trained. The results show that junior officers that received training were very knowledgeable of the CIMS and senior officers were not as knowledgeable. It is therefore proposed that training should be provided to those officers who were not trained. In addition, refresher training for all officers should be continuously given.

Infrastructure

Computer technology accelerates at such a quick pace that it is difficult to stay ahead of the curve. The sophistication of software applications and demand to expand the breadth of data collection requires that systems be developed to handle not just current technical needs, but anticipated future needs. It is vital that planning stages be coordinated by an individual (or individuals) who understands information technology and data collection (e.g., how cases are processed, how information is shared throughout an organization, etc.). Currently, there is an assortment of crime mapping software applications available. Some proprietary record management systems include crime analysis modules that provide a seamless integration of data collection and analysis functions.

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APPENDICES

Questionnaire

Purpose

This research is required for the CMPS3012 MIS course at University of Belize University. This questionnaire asks for information about yourself and how often you use the Crime Information Management System. The data gathered will be analyzed to determine the success of the CIMS.

Please answer each question based on your use of the System. Your individual responses to the questionnaire will be strictly confidential and used solely for this research.

Instructions

This is a survey, not a test; there are no right or wrong answers. Please tick the boxes to mark your answers.

1. Background Information	Answers:
Please indicate your gender:	Male ☐ Female ☐
Please indicate your age:	<25 ☐ 25-35 ☐ 36-45 ☐ 46-55 ☐ >55 ☐
Please indicate your Rank within the Police Department:	PC ☐ CPL ☐ SGT ☐ INSP ☐
Please indicate your working experience:	<5 ☐ 5-10 ☐ 11-15 ☐ >15 ☐

Indicate your agreement with each statement by rating it from (1) strongly disagree to (7) strongly agree.

2. Information Quality	Disagree -----------------------------Agree
IQ1: The CIMS system provides information that is exactly what you need	1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐
IQ2: The CIMS system provides information you need at the right time	1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐
IQ3: The CIMS system provides information that is relevant to your class	1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐
IQ4: The CIMS system provides sufficient information	1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐
IQ5: The CIMS system provides information that is easy to understand	1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐
IQ6: The CIMS system provides up-to-date information	1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐
IQ7: The CIMS system provides sufficient information	1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐

3. System Quality	Disagree -----------------------------Agree
SQ1: The CIMS system is easy to use	1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐
SQ2: The CIMS system is user-friendly	1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐
SQ3: The CIMS system provides interactive features between users and the system	1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐

4. Complementary Technology Quality	Disagree -----------------------------Agree

CTQ1: The computer (desktop,) you normally use to access CIMS is adequate	1 □ 2 □ 3 □ 4 □ 5 □ 6 □ 7 □
CTQ2: The computer (desktop) you normally use to access CIMS has a fast and reliable internet connection	1 □ 2 □ 3 □ 4 □ 5 □ 6 □ 7 □

5. Service Quality	**Disagree** ------------------------------**Agree**
SV1: The support staff keep the CIMS system software up to date	1 □ 2 □ 3 □ 4 □ 5 □ 6 □ 7 □
SV2: When users have a problem the CIMS system support staff show a sincere interest in solving it	1 □ 2 □ 3 □ 4 □ 5 □ 6 □ 7 □
SV3: The CIMS system support staff respond promptly when users have a problem	1 □ 2 □ 3 □ 4 □ 5 □ 6 □ 7 □
SV4: The CIMS system support staff tell users exactly when services will be performed	1 □ 2 □ 3 □ 4 □ 5 □ 6 □ 7 □

6. User Satisfaction	**Disagree** ------------------------------**Agree**
US1: Do you have a positive attitude of CIMS. the Moodle system function.	1 □ 2 □ 3 □ 4 □ 5 □ 6 □ 7 □
US2: You think that the utility of the CIMS system is high.	1 □ 2 □ 3 □ 4 □ 5 □ 6 □ 7 □
US3: The CIMS system has met your expectations.	1 □ 2 □ 3 □ 4 □ 5 □ 6 □ 7 □
US4: You are satisfied with the CIMS system.	1 □ 2 □ 3 □ 4 □ 5 □ 6 □ 7 □

7. Use	**Never** ----------------------------------**Often**
U1: Your frequency of use of the CIMS system is high	1 □ 2 □ 3 □ 4 □ 5 □ 6 □ 7 □
U2: You depend upon the CIMS system	1 □ 2 □ 3 □ 4 □ 5 □ 6 □ 7 □
U3: You were able to complete a task using CIMS even when there was no one around to tell you what to do	1 □ 2 □ 3 □ 4 □ 5 □ 6 □ 7 □
U4: You have the knowledge necessary to use the CIMS system	1 □ 2 □ 3 □ 4 □ 5 □ 6 □ 7 □

8. Perceived Net Benefits	**Never** ----------------------------------**Often**
NB1: The CIMS system helps you improve your work performance	1 □ 2 □ 3 □ 4 □ 5 □ 6 □ 7 □
NB2: The CIMS system helps you safe time and money	1 □ 2 □ 3 □ 4 □ 5 □ 6 □ 7 □
NB3: The CIMS system helps you achieve your goals	1 □ 2 □ 3 □ 4 □ 5 □ 6 □ 7 □
NB4: Using the CIMS system improves assessment and teaching	1 □ 2 □ 3 □ 4 □ 5 □ 6 □ 7 □
NB5: Using the CIMS system at work increases your productivity	1 □ 2 □ 3 □ 4 □ 5 □ 6 □ 7 □
NB6: Overall, using CIMS enhances performance	1 □ 2 □ 3 □ 4 □ 5 □ 6 □ 7 □

Please return this survey to the person who gave you the form.

Thank you for your participation.